Stress Uniformity in Albanian: Morphological Arguments for Cyclicity

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GLOW – Workshop on Approaches to phonological opacity
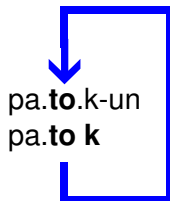April 5, 2006

Stress in Nouns

	Final o ('midwife')	Final oC ('gander')
Nominative Indefinite	**ba**.bo	pa.**tok**
Accusative Definite	**ba**.bon	pa.**to**.kun

Stress Rules

▶ Stress final (C)VC syllable
▶ Otherwise: Stress penultimate syllable

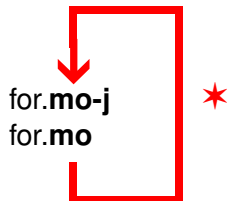# Possible Accounts of Uniformity

Cyclic

pa.**to**.k-un
pa.**to k**

Paradigmatic

pa.**tok** $\longleftrightarrow$ pa.**to**.kun

Stress in Verbs

	final oC ('to graze')	**final o** ('to form')
1sg	ku.**llot-Ø**	for.**mo-j**
2sg	ku.**llot-Ø**	for.**mo-n**
3sg	ku.**llot-Ø**	for.**mo-n**
1pl	ku.**llo**.t-im	for.**mo-j**.më
2pl	ku.**llot**.-ni	for.**mo**.-ni
3pl	ku.**llo**.t-in	for.**mo-j**.në

→ Stress is always on the final syllable of the stem

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Possible Accounts of Uniformity

Cyclic

for.**mo-j**
for.**mo**

$*$

Paradigmatic

for.**moj** $\longleftrightarrow$ form.**mo**.ni

Claims

- ▶ Verbs are compatible with cyclic stress assignment

- ▶ Stress Uniformity in Albanian is cyclic

- ▶ Morphological details are crucial for evaluation

Outline

Phonological Aspects of Stress Assignment

Analyzing Verbs Cyclically

Arguments for Cyclicity

Albanian

- ▶ Indoeuropean language spoken by $\approx$ 5 million speakers in Albania, Kosova, Macedonia

- ▶ Two main dialects: Gheg & Tosk
  Standard language is closer to Tosk

- ▶ Phonologically transparent orthography close to IPA
  but: ë= /ə/, nj = /ɲ/, ll = /ɫ/, q = /c/, gj = /ɟ/

Phonological Aspects of Stress Assignment

► 1 stress/word form

► Right-edge orientation

► Sensitivity to vowel quality

► Sensitivity to syllable weight

1 Stress/Word Form

	from the left		**from the right**	
1st	**ma**.l-i	'the mountain'	vësh.ti.rë.**si**	'difficulty'
2st	nje.**ri**	'human'	për.pu.**ni**.m-i	'the treatment'
3rd	për.pa.**rim**	'progress'	gë.**njesh**.tr-a.ve	'of lies'
4th	qy.te.të.**rim**	'civilization'	**kum**.bu.ll-a.ve	'of the plums'

Right-Edge Orientation

Inflected Forms

	from the left		from the right	
1st	**ma**.l-i	'the mountain'	vësh.ti.rë.**si**	'difficulty'
2st	nje.**ri**	'human'	për.pu.**ni**.m-i	'the treatment'
3rd	për.pa.**rim**	'progress'	gë.**njesh**.tr-a.ve	'of lies'
4th	qy.te.të.**rim**	'civilization'	**kum**.bu.ll-a.ve	'of the plums'

Base Forms

1st	**mal**	'mountain'	vësh.ti.rë.**si**	për.pu.**nim**
2st	nje.**ri**	'human'	gë.**njesh**.tër	**kum**.bull
3rd	për.pa.**rim**	'progress'		
4th	qy.te.të.**rim**	'civilization'		

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Sensitivity to Vowel Quality

Final Vowel =			**Stress =**
ë	**a**.në, **hë**.në, **e**.hë, **pro**.në, **si**.vë		**penultima**
e	**fa**.qe, **ën**.dje, **en**.de, **go**.lle, **fi**.ce		
o	**ba**.bo, **ne**.to, **lo**.ço, **bir**.ko		
a	ha.**ta**, pas.tër.**ma**, xhe.**la**, ot.**ra**, ri.**xha**		**final**
i	ba.**ri**, gju.hë.**si**, qer.**shi**, kom.**shi**, zi.**li**		
u	ash.**tu**, a.kë.**ku** ku.cu.**ru**		

→   Only quality of vowels in final syllables is "visible"

→   High and low vowels attract stress

Sensitivity to Syllable Weight

Final Syllable

open		closed		Stress
qer.**shi**	'cherry'	ar.**mik**	'enemy'	
ha.**ta**	'calamity'	re.zul.**tat**	'result'	**final**
ash.**tu**	'this way'	çi.**fut**	'gipsy'	
fa.qe	'face '	she.**qer**	'sugar'	**final**
ba.bo	'midwife'	pa.**tok**	'gander'	
a.në	'side'	**a**.fër	'near'	**penultimate**

→ Only Weight of final syllables is "visible"

→ Closed Syllables with full vowels attract stress

Stress Algorithm

For a given base form *B*:

1. If Monosyllabic(*B*)**:**

➜ stress only syllable of *B*

2. Else: Find the final syllable *S* of *B*

    a. **If** Full_Vowel(Nucleus(*S*)) and Closed(*S*)
        or Nucleus(*S*) = i,a,u**:**

➜ stress final syllable of *B*

    b. **Else:**

➜ stress penultimate syllable of *B*

Problem for a Stem-based Acccount

- ▶ Noun stress depends on
  weight/vowel quality of final syllable (**ba** .bo ↔ pa.**tok**)

- ▶ Verb stress is always final   (for.**mo** & ku.**llot**)

→ Different Phonologies for Nouns and Verbs

Bevington (1972)

$$V \rightarrow [+stress] \underline{\quad\quad} C_0 \left\langle \left\{ \begin{array}{c} e \\ a \\ o \\ \ddot{e}(C) \\ as \\ ull \end{array} \right\} \right\rangle]_{\substack{\text{Stem} \\ <\textbf{-V}>}}$$
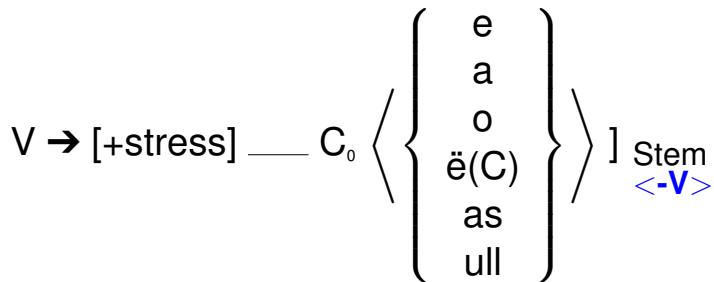
No Problem for a Paradigm-based Acccount

- ▶ Base of nouns is indefinite nominative

- → Effect of weight/vowel quality on stress (**ba** .bo ↔ pa.**tok**)

- ▶ Base of verbs is 1sg indicative present

- ▶ Final syllable of 1sg is always heavy   (for.**mo-j** & ku.**llot**)

- → Different Stress in nouns and verbs
  follows from different morphology

Claim

All relevant verb stems end in heavy syllables

Traditional Segmentation in Verb Inflection

	final C ('to graze')	**final V** ('to form')
1sg	ku.**llot**-Ø	for.**mo-j**
2sg	ku.**llot**-Ø	for.**mo-n**
3sg	ku.**llot**-Ø	for.**mo-n**
1pl	ku.**llo**.t-im	for.**mo-j**.më
2pl	ku.**llot**.-ni	for.**mo**.-ni
3pl	ku.**llo**.t-in	for.**mo-j**.në

(cf. Dodi & Gjinari, 1983; Buchholz & Fiedler, 1986)

Alternative Analysis of Verb Inflection (Trommer, 1997)

	final C ('to graze')	**final j/n** ('to form')
1sg	ku.**llot-Ø**	for.**moj-Ø**
2sg	ku.**llot-Ø**	for.**mon-Ø**
3sg	ku.**llot-Ø**	for.**mon-Ø**
1pl	ku.**llo**.t-im	for.**moj**-më
2pl	ku.**llot**.-ni	for.**mon**.-ni
3pl	ku.**llo**.t-in	for.**moj**.-në

- ▶ n.n is simplified phonologically to n

- ▶ **Generally:** no word-internal geminates

Advantages of Alternative Analysis

- ▶ Unified analysis of singular suffix(es): -Ø

- ▶ Unified analysis of j: stem-final segment

- ▶ Unified analysis of j-verbs and j-less verbs

J-verbs and J-less Verbs

	j-verb ('to form')	**j-less verb** ('to eat')
1sg	formoj-Ø	ha-Ø
2sg	formon-Ø	ha-Ø
3sg	formon-Ø	ha-Ø
1pl	formoj-më	ha-m
2pl	formo-ni	ha-ni
3pl	formoj-në	ha-n

➜ Identical Suffixes

Other Stem-final Sound Changes

	final j/n ('form')	**final C** ('kill')	**final C** ('measure')
1sg	formo**j**-Ø	vra**s**-Ø	mat-Ø
2sg	formon-Ø	vret-Ø	mat-Ø
3sg	formon-Ø	vret-Ø	mat-Ø
1pl	formo**j**-më	vra**s**-im	mat-im
2pl	formon-ni	vrit-ni	mat-ni
3pl	formo**j**-në	vra**s**-in	mat-in

Stem Consonants Replacing or Following j/n

	'drink'	'form'	'open'	'nag'	'arrive'	'live'	'find'
1sg	pi	formo**j**	ha**p**	bre**j**	arri**j**	rro**j**	gje**j**
Participle	pi-r	formua-r	ha**p**-ur	bre**jt**-ur	arri**t**-ur	rro**jt**-ur	gje**nd**-ur

	'drink'	'form'	'open'	'enter'	'arrive'	'live'	'find'
Present	pi	formo**j**	ha**p**	hy**j**	arri**j**	rro**j**	gje**j**
Aorist	pi-va	formo-va	ha**p**-a	hy**r**-a	arri**t**-a	rro**jt**-a	gje**t**-a

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"Vowel-final" Stems in Non-Active Forms

	j/n-final	C-final
	('to form')	('to open')
1sg	formo-he-m	hap-e-m
2sg	formo-he-sh	hap-e-sh
3sg	formo-he-t	hap-e-t
1pl	formo-he-mi	hap-e-mi
2pl	formo-he-ni	hap-e-ni
3pl	formo-he-n	hap-e-n

Diphtong-final Stems in Non-active Forms

	'carry away'	'feel'	'guard'	'offend'
Active	shpie	ndiej	ruaj	fyej
Non-Active	shp**i**-het	nd**i**-het/ ndj**e**-het	r**u**-het	f**y**-het

→ Diphtongs before h are simplified to Monophtongs

Stem-final Diphtongs in Optative Forms

	'form'	'feel'	'write'	'finnish'	'guard'
Active	formoj	ndiej	shkruaj	kryej	ruaj
Optative	form**o**-fsha	ndj**e**-fsha	shkr**o**-fsha	kr**e**-fsha	ru**aj**t-sha

→ Diphtongs before f are simplified to monophtongs

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Stem-final Diphtongs in Aorist Forms

|	'feel'	'write'	'finnish'	'guard'
Active	ndiej	shkruaj	kryej	ruaj
Optative	ndj**e**-va	shkr**o**-va	kr**e**-va	r**uaj**t-a

→ Diphtongs before v are simplified to monophtongs

→ Diphtongs before fricatives are simplified to monophtongs

→ Only at morpheme boundaries: **qejf** , 'joy'; **qej.f-i** , 'the joy'

→ *[-cons][-cons]+[-son+cont]

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Deponent Verbs

Active	Non-Active
formoj	**formohem**
'I form'	'I am formed'
	('I form myself')
_	**pendohem**
	'I regret'

Problem for Paradigmatic Uniformity

Cyclic Approach

for.**mo**.hem
for.**moj**
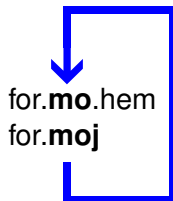
Paradigmatic Approach

?? ⟵★⟶ for.**mo**.hem

Potential Bases

	Wrong Stress	**Right Stress**
Present	pen.**do**.hem	
Imperfect	pen.**do**.he.sha	
Aorist	u pen.**do**.va	
Optative		u pen.**dof**.sha
Participle		pen.**duar**

What Makes a Good Base?

The base is:

- ▶ the unmarked form (Greenberg 1966)

- ▶ the most frequent form (Mańczak 1980)

- ▶ the most informative form (Albright, 2002)

- ▶ the majority of forms (McCarthy, 2003)

Optative and Participle are . . .

- ▶ not generally unmarked (Albright, 2002)

- ▶ relatively unfrequent (especially: Tosk)

- ▶ not the majority of forms (vs. present, imperfect, aorist)

- ▶ relatively uninformative

Optative	u	pend**o**ftë	u	shkr**o**ftë
Participle		pend**ua**r		shkr**ua**r
Present		pend**o**het		skr**u**het

Stress-shifting Nouns

	a. 'man'	b. 'head'	c. 'snake'	d. 'sickle'	e.'river'
sig	nje.**ri**	ka.**lli**	**gjar**.për	**dra**.për	**lum**
plu	**nje**.rëz	**ka**.llë.za	gjar.pë.**rinj**	dra.**pinj**	lu.**menj**

Problem for Paradigmatic Analysis

gjar.për   ⟵ ✶ ⟶   gjar.pë.**rinj**

Morphological Constituency of Stress-shifting Nouns

	Stem		Suffix
	Invariable	Variable	
'head'	kall	i	–
'heads'		ëz	a

	Stem		Suffix
	Invariable	Variable	
'man'	njer	i	–
'men'		ëz	

Same Allomorphy
Different Suffixes

	Stem		Suffix
	Invariable	Variable	
'house'	shpi	–	–
'houses'		–	a

Same Suffixes
No Allomorphy

Morphological Constituency of Stress-shifting Nouns

	Stem		Suffix
	Invariable	**Variable**	
'sickle'	drap	ër	–
'sickles'		in	j

Same Suffix
Different Allomorphy

	Stem		Suffix
	Invariable	**Variable**	
'snake'	gjarp	ër	–
'snakes'		ërin	j

Same Suffixes
No Allomorphy

	Stem		Suffix
	Invariable	**Variable**	
'child'	kalama	–	–
'children'		–	j

Stress Assignment in Stress-shifting Nouns

	Words	Stems	Stress triggered by
sg	qershi	qer.**shi**	final i
pl	qershia	qer.**shi**	

	Words	Stems	Stress triggered by
sg	kalli	ka.**lli**	final i
pl	kallëza	**ka**.llët	final schwa syllable

	Words	Stems	Stress triggered by
sg	drapër	**dra**.për	final schwa syllable
pl	drapinj	dra.**pin**	final closed full-vowel syllable

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Summary

▶ Cyclic analysis of Stress Uniformity is possible

▶ Cyclic analysis accounts for apparent exceptions

▶ Morphological Segmentation is crucial

"Vowel-final" Stems in Imperfect Forms

	j-verb ('to form')	**j-less verb** ('to open')
1sg	formo-j-a	hap-j-a
2sg	formo-j-e	hap-j-e
3sg	formo-nte	hap-te
1pl	formo-n-im	hap-n-im
2pl	formo-n-it	hap-n-it
3pl	formo-n-in	hap-n-in

Underlying Stems in Imperfect Forms

	j-verb ('to form')	**j-less verb** ('to open')
1sg	formoj-j-a	hap-j-a
2sg	formoj-j-e	hap-j-e
3sg	formon-**te**	hap-**te**
1pl	formon-n-im	hap-n-im
2pl	formon-n-it	hap-n-it
3pl	formon-n-in	hap-n-in

- ▶ nn and jj degeminate

- ▶ Unified account of 3sg forms