

Against Antifaithfulness in Luo

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Handout

<http://www.uni-leipzig.de/~jtrommer/ocp06.pdf>

Basic Data

Voiceless → Voiced

	singular		plural	
[-voiced]	a. arip	'milky way'	arib-e	[+voiced]



Voiced → Voiceless

	singular		plural	
[+voiced]	b. cogo	'bone'	cok-e	[-voiced]

Morphological Analyses

Gregersen (1972): $\alpha\text{voice} \rightarrow -\alpha\text{voice}$

Alderete (2001): $\neg\text{IDENT}[\text{voice}]$

Base		Derivative	$\neg\text{IDENT}[\text{voice}]$	$\text{IDENT}[\text{voice}]$
a./arip/		i. arib-e	*	*
		ii. arip-e		
b./cogo/		i. cok-e	*	*
		ii. cog-e		

(cf. also de Lacy, 1999; Wolf, 2005)

Basic Claim

Voicing polarity is phonological

LUO (Dholuo; Okoth-Okombo, 1984; Tucker, 1994; Heusing, 2004)

- Nilosaharan language of the Western Nilotic branch
- Spoken by more than 3 million speakers around Lake Victoria (Kenya, Uganda, Tanzania)
- Tone language with complex morphophonology

Outline

- 1 Problems with Morphological Accounts
- 2 A Phonological Analysis
- 3 Possession Forms

Important Phonological Facts

- Word-final obstruents in bare roots are always voiceless
e.g. **bet**, but not ***bed**
- Roots are either (C)V.CV, (C)VC , or (C)V.CVC,
e.g. **bet**, and **ari**, but not ***be** or ***ber.te**
- **Basically:** CVC or CV.CV

Gaps: CVCV

Attested

	singular		plural	
[+voiced]	c o g	'bone'	c o k-e	[-voiced]

Not attested

	singular		plural	
[-voiced]	*c o k		*c o g-e	[+voiced]

→ Incorrectly predicted by morphological accounts

Gaps: CVC

Attested

	singular		plural	
[-voiced]	ar p	'milky way'	ar b -e	[+voiced]

Not attested

	singular		plural	
[+voiced]	*ba d		*bet-e	[-voiced]

→ Incorrectly predicted by morphological accounts

Non-Alternating Roots: CV**C**V

a. cupa (sg.) cup-e (pl.) 'bottle'

b. ηudi (sg.) ηud-e (pl.) 'neck of meat'

→ **Should not exist under morphological accounts**

Non-Alternating Roots: CVC

- a. i:p (sg.) i:p-e (pl.) ‘tail’
- b. lep (sg.) lep-e (pl.) ‘tongue’

→ **Should not exist under morphological accounts**

A Phonological Analysis

- **Three patterns:** Alternating -
Non-alternating (voiced)- Non-alternating (unvoiced)
- **Due to three underlying voicing specifications:**
[+voiced] - [-voiced] - [] (Inkelas, 1995)
- **Alternations follow from:**
Intervocalic Voicing, Final Devoicing and
Default Voicelessness

CV.CV – A Three-Way Contrast

Singular	Plural	Underlying
voiced	voiced	[+voiced]
unvoiced	unvoiced	[–voiced]
voiced	unvoiced	[]



Intervocalic

Default

Voicing

Voicelessness

CVC – A Two-Way Contrast

Default Voicelessness →

Singular	Plural	Underlying
unvoiced	unvoiced	[–voiced]
unvoiced	unvoiced	[]
unvoiced	voiced	[+voiced]



Final
Devoicing

Constraints

Markedness

***+vcd**_{PW}:

Final obstruents are voiceless

***[-son+vcd]**:

Obstruents are voiceless

Intervocalic Voicing:

VCV shares the feature [+voiced]

Faithfulness

MAX [vcd]

Retain underlying values of [+/-voiced]

Morphology-Phonology

***Spread**

Features should not cross morpheme boundaries

Ranking

*+vcd]_{PW} ≫ MAX [vcd] ≫ *Spread ≫ Intervocalic Voicing ≫ *[-son+vcd]

CVC: Non-Alternating Roots I

Input: ip (sg.), 'tail'

	*+vcd] _{PW}	MAX [vcd]	*[-son+vcd]
☞ a. ip			
b. ib	*!	*	*

Input: ip-e (pl.), 'tail'

	*+vcd] _{PW}	MAX [vcd]	*[-son+vcd]
☞ a. ip-e			
b. ib-e		*!	*

Underlying voicelessness is retained

CVC: Non-Alternating Roots II

Input: iB (sg.), 'tail'

	*+vcd] _{PW}	MAX [vcd]	*[-son+vcd]
☞ a. ip			
b. ib	*!		*

Input: iB-e (pl.), 'tail'

	*+vcd] _{PW}	MAX [vcd]	*[-son+vcd]
☞ a. ip-e			
b. ib-e			*!

Underspecified obstruents turn voiceless

CVC: Alternating Roots

Input: arib (sg.), 'milky way'

	*+vcd] _{PW}	MAX [vcd]	*[-son+vcd]
☞ a. arip		*	
b. arib	*!		*

Input: arib-e (pl.), 'milky way'

	*+vcd] _{PW}	MAX [vcd]	*[-son+vcd]
a. arip-e		*!	
☞ b. arib-e			*

Faithful plural/Finally devoiced singular

CVCV: Non-Alternating Roots I

Input: cupa (sg.), 'bottle'

	MAX [vcd]	*[-son+vcd]
☞ a. cupa		
b. cuba	*!	*


Input: cup-e (pl.), 'bottle'

	MAX [vcd]	*[-son+vcd]
☞ a. cup-e		
b. cub-e	*!	*


Underlying voicelessness is retained

CVCV: Non-Alternating Roots II

Input: η udi (sg.), 'neck of meat'

	MAX [vcd]	*[-son+vcd]
a. η uti	*!	
 b. η udi		*


Input: η ud-e (pl.), 'neck of meat'

	MAX [vcd]	*[-son+vcd]
a. η ut-e	*!	
 b. η ud-e		*

Underlying voicing is retained

CVCV: Alternating Roots I

Input: coGo (sg.), 'bone'

	MAX [vcd]	Intervocalic Voicing	*[-son+vcd]
a. coko		*!	
b. cogo		*!	*
 c. c(ogo)			*

Intervocalic Voicing: VCV is a [+vcd] (harmonic) span
(cf. McCarthy, 2004)

CVCV: Alternating Roots II

Input: coG-e (sg.), 'bone'

	MAX [vcd]	*Spread	Intervocalic Voicing	*[-son+vcd]
☞ a. cok-e			*	
b. cog-e			*	*!
c. c(og-e)		*!		*

***Spread:** Harmonic spans should not cross morphological boundaries

The Phonological Analysis

requires

- only independently motivated phonological constraints

accounts for

- the basic polarity data
- the gaps (by Intervocalic Voicing and Final Devoicing)
- non-alternating roots (by underspecification)

Nominal Possession Forms

Bare Root	ki:di		'a stone'
	stone		
Possession Form	kit	gôt	'a stone from a hill'
	stone	hill	

Bare Root	o:t		'a nest'
	nest		
Possession Form	od	winyó	'a bird's nest'
	nest	bird	

Problem: non-intervocalic [+voiced] → [-voiced]

Pronominal Possession Forms

o:t , 'house'

	sg		pl	
1	o:d-á	'my house'	o:d-wá	'our house'
2	o:d-í	'your (sg.) house'	o:d-ú	'your (pl.) house'
3	o:d-e	'his house'	o:d-gí	'their house'

ki:di, 'stone'

	sg		pl	
1	ki:t-á	'my stone'	ki:t-wá	'our stone'
2	ki:t-í	'your (sg.) stone'	ki:t-ú	'your (pl.) stone'
3	ki:t-e	'his stone'	ki:t-gí	'their stone'

Derivation of Nominal Possession Forms

Root	Truncation + Polarity	Nom.Poss.
o:t	→	od
ki:di	→	kit

or

Root	Affixation	Pron.Poss.	Truncation	Nom.Poss.
o:t	→	o:d-e	→	od
ki:di	→	ki:t-e	→	kit
		Voicing Alternations		

Evidence for the 2-Step Derivation

Root	Plural	Pron. Poss	Nom.Poss.	
í:p	i:p-e	í:w-ê	íw	'tail'
mo	mó:dh-î	mór-ê	mór	'oil,fat'
rawe:ra	rawé:r-ê	rawe:cé	rawec	'boy'

- Irregular stem changes of Nom.Poss.
always follow stem change of Pron.Poss.

Analysis for Possession Forms

- Nom.Poss are truncated from Pron.Poss. Forms
- Faithfulness Constraints (Base-Truncation)
retain voicing of bases
- Polarity is motivated in bases
and retained in truncated forms

Summary

Voicing polarity . . .

- is problematic for morphological accounts
- reduces to independently motivated phonological constraints

Morphology might . . .

- lack explicit polarity rules/constraints
- be simpler than we think

Voicing Polarity and Morphophonology

- Reduplication** = Concatenation + Phonology
(Marantz, 1982; McCarthy & Prince, 1995)
- Roots+Patterns** = Concatenation + Phonology
(Chomsky, 1951; Ussishkin, 2000; Trommer, 2005c)
- Voicing Polarity** = Concatenation + Phonology

References

Alderete, J. (2001). Dominance effects as transderivational anti-faithfulness. *Phonology*, 18:201-253.

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McCarthy, J. (2004) . Headed spans and autosegmental spreading. Ms., UMass, ROA 685-0904.

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More Phonological Polarity: Tone

H **yí-rì** 'house, sg.'

L **wì-rí** 'horse, sg.'

(Dagaare; Antilla & Bodomo, 1996)

- Tone Polarity follows from independently motivated phonological mechanisms (Hyman, 1993; Trommer, 2005a)
- **But:** Still unaccounted tone polarity in Vietnamese (Yip, 2002)

Morphological Polarity: Mam Possessor Agreement

		sg	pl
1excl	(+1 -2)	n-wi:xh- a	q-wi:xh- a
1incl	(-1 +2)		q-wi:xh
2	(+1 +2)	t-wi:xh- a	ky-wi:xh- a
3	(-1 -2)	n-wi:xh	ky-wi:xh

Noyer (1992):

-a = [α 1 - α 2]

- **Nevins (2003):** Apparent Polarity follows from feature geometry (Harley & Ritter, 2002; Trommer, 1999, 2005b)
- **Possible counterexample:** Romance subjunctive formation (Arregi, 2000)