Amorphous Approaches to Mutation

Jochen Trommer
jtrommer@uni-leipzig.de

University of Leipzig
Department of Linguistics

Phonological Aspects of Mutation Morphology
EGG 2008

Amorphous Approaches to Mutation

Mutation doesn't reflect affixation of phonological material

but is directly derived by constraints

Two Types of Amorphous Approaches

▶ **Cophonologies & Indexed Constraint Approaches:**
Mutation follows from specific phonology associated with
specific morphological categories

▶ **Pure Distinctivity Approaches:**
Similar to the MAXFLT approach, but without affixation of
floating features

Mutation by Cophonologies or Indexed Constraints

- **Cophonologies:** Mutation-triggering morphology is asociated with a specific constraint ranking of standard faithfulness and markedness constraints

- **Indexed Constraints:** There are specific versions of standard faithfulness and markedness constraints only applying in the context of mutation-triggering morphology

Manner Mutation in Fula

Class 2		**Class 1**
wɔ wu wa wɛ wi	$\rightarrow$	bV
rV	$\rightarrow$	dV
sV	$\rightarrow$	cV
yɛ yi yɔ yi ya	$\rightarrow$	jV
wɔ wu yɛ yi a	$\rightarrow$	gV
V	$\rightarrow$	V

Fula Manner Mutation by Cophonology

Class 2 Cophonology:

Input: wa

	FAITHFULNESS	SONORITY SEQUENCING
☞ a. wa		*
b. ba	*!	

Class 1 Cophonology:

Input: wa

	SONORITY SEQUENCING	FAITHFULNESS
a. wa	*!	
☞ b. ba		*

Terena 1st Person Marking (Akinlabi, 1996)

All sonorants from the left are nasalized

until an obstruent is reached which is prenasalized

	Other Forms		**1sg**	
(a)	ayo	'his brother'	ãỹõ	'my brother'
(b)	arıne	'sickness'	ãr̃ĩnẽ	'my sickness'
(c)	unae	'boss'	ũnãẽ	'my boss'
(d)	emoʔu	'his word'	ẽmõʔũ	'my word'
(e)	owoku	'his house'	õwõ$^{\eta}$gu	'my house'
(f)	ıwuʔıšo	'he rides'	ĩw̃ũʔĩ^{n}žo	'I ride'
(g)	ıtuke	'poss. pro'	ĩ^{n}duke	'1p. poss. pro'
(h)	nokone	'need'	nõ$^{\eta}$gone	'I need'
(i)	takı	'arm'	^{n}dakı	'my arm'

Terena Nasal Spreading by Cophonology

- ▶ **Observation:** In Terena nasal spreading only occurs with 1sg mutation

- ▶ **Possible Analysis:** Other constructions have cophonologies blocking nasal spreading
  the 1sg Cophonology requires nasal spreading

Problems with Cophonologies/Indexed Constraints

- ▶ **Restrictiveness:** Morpheme-specific constraints/rankings predict excessive inconsistency in phonological grammars

- ▶ **Locality:** (Wrong?) prediction that ATB-mutation is the standard case in mutation

- ▶ **Markedness-increasing Mutation** (cf. Aka) cannot be captured since cophonologies should enhance either phonological unmarkedness or faithfulness to the base

REALIZE MORPHEME (Kurisu, 2001)

▶ Uses a general distinctivity constraint which requires that derived forms differ in any phonological way from their morphological bases (REALIZE MORPHEME)

▶ Differently ranked indexed faithfulness constraints restrict the effects of REALIZE MORPHEME to specific morphological constructions

▶ **Caveat:** There are plenty of substantially different definitions for REALIZE MORPHEME in the literature. This one differs substantially from the one used above

REALIZE MORPHEME (Kurisu, 2001:39)

REALIZE MORPHEME (RM):
Let α be a morphological form, β be a morphosyntactic category, and F(α) be the phonological form from which F($\alpha+\beta$) is derived to express a morphosyntactic category β. Then RM is satisfied with respect to β iff F($\alpha+\beta$)$\neq$F(α) phonologically.

Nonconcatenative Morphology by REALIZE MORPHEME

Morphological Process	Violated Constraint
Subtractive morphology	Max
Umlaut, Suppletion, Mutation	Ident
Morphological epenthesis	Dep
Metathesis	Linearity
Infixation	Contiguity
Reduplication	Integrity
Haplology (Fusion)	Uniformity

Affixless Umlaut in German

		/Vater/$_{Singular}$	Ident-IO-[+back]$_{Sg.}$	RM	Ident-IO-[+back]$_{Pl.}$
a.	☞	Vater		*	N/A
b.		Väter	*!		N/A

		/Vater/$_{Plural}$	Ident-IO-[+back]$_{Sg.}$	RM	Ident-IO-[+back]$_{Pl.}$
a.		Vater	N/A	*!	
b.	☞	Väter	N/A		*

Problem with REALIZE MORPHEME:
Umlaut with Affixation in German

Mutation Morphology

sg	pl	
Vater	Väter	'father'
Mutter	Mütter	'mother'

Mutation Morphology + Affixal Morphology

sg	pl	
Hahn	Hähn-e	'cock'
Buch	Büch-er	'end'

Affixed forms should satisfy REALIZE MORPHEME without umlauting

Umlaut with Affixation in German by Sympathy

	/Gast-e/_{Plural}	Max	RM	Ident-❀O [back]	Ident-IO [+back]	❀Stem ≡PrWd
a.	Gast	*!	*	*		
b.	Gaste			*!		*
c. ❀	Gäst	*!			*	
d. ☞	Gäste				*	*

(cf. McCarthy, 1999)

Jochen Trommer jtrommer@uni-leipzig.de   Amorphous Approaches to Mutation

Luo Voicing Polarity by Sympathy

	/alot-e/$_{Plural}$	Max$_{Plural}$	RM	Ident ✿O-[voi]	Ident IO-[voi]	✿Stem ≡PrWd
a.	alot	*!	*	*		
b.	alote			*!		*
c. ✿	alod	*!			*	
d. ☞	alode				*	*

	/kidi-e/$_{Plural}$	Max$_{Plural}$	RM	Ident ✿O-[voi]	Ident IO-[voi]	✿Stem ≡PrWd
a.	kidi	*!	*	*		
b.	kide			*!		*
c. ✿	kiti	*!			*	
d. ☞	kite				*	*

Problems with REALIZE MORPHEME + Sympathy

- ▶ stands and falls with the highly controversial status of Sympathy Theory

- ▶ Polarity mutation should be the standard, not an exception

- ▶ needs distinctivity constraints + excessive indexing of faithfulness constraints

Antifaithfulness Constraints (Alderete, 2001)

▶ For every output-output faithfulness constraint requiring a specific type of identity (e.g. MAX) there is an antifaithfulness constraint requiring the respective non-identity (e.g. ¬MAX)

▶ Antifaithfulness constraints are always morphologically indexed (e.g. ¬MAX$_{Past}$)

Voicing Polarity by Antifaithfulness (Alderete, 2001)

¬IDENT[voice]

Base		Derivative	¬IDENT[voice]	IDENT[voice]
a./arip/	☞	i. arib-e	*	
		ii. arip-e		*
b./cogo/	☞	i. cok-e	*	
		ii. cog-e		*

Problems with Antifaithfulness

► Formally very unrestrictive and powerful
(each faithfulness constraint can be counteracted in
arbitrary morphological contexts)

► Main arguments for antifaithfulness outside of mutation are
questionable (Féry, 2002; Apoussidou, 2003; van
Oostendorp, 2005)

► Needs additiona machinery to derive locality
(why does kidi get ki**t**-e and not **g**id-e?)