

Co-phonologies and morphological exponence in OT

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As work since Spencer (1998) points out, Optimality Theory redefines the exponence of reduplication in purely realizational terms. The input form of reduplicative morphemes in work since McCarthy & Prince (1993) is simply a label, RED, linking the reduplicative construction to reduplication-specific (B-R) Faithfulness constraints. The grammar defined by the interaction of B-R Faithfulness constraints with other constraints is what determines the reduplicative morpheme's output form (or exponence). It does not introduce an 'item' in the Hockettian (1966b) sense. The co-phonology approach to formalizing morphologically-conditioned phonology takes all morphological exponence one step closer to Anderson's (1992) amorphous goal. As Orgun (1996) and Inkelas & Zoll (2005) argue, in this theory all morphemes are defined as complexes of semantic, syntactic and phonological features. The phonological 'features' can consist entirely of a constraint grammar, or co-phonology.

The goal of this talk is to first provide a brief introduction to co-phonologies, summarizing the leading arguments in favor of co-phonologies over constraint indexing from other work (Inkelas 2008, Inkelas & Zoll 2007). New arguments in favor of co-phonologies will be introduced, based on case studies of reduplication in Squamish (Skwxwú7mesh) and Chichewa. What I will show is that indexed constraints cannot handle languages like Squamish, which have two (or more) reduplication patterns which are subject to complementary (rather than nested) markedness constraints. (The relevant data is in (1) on the next page.) Indexed constraints can also not easily handle tonal transfer (and non-transfer) in languages like Chichewa, where the same reduplicative construction applies to Bases subject to two (or more) morphologically-conditioned tone patterns. (The relevant data is in (2) on the next page.) An analysis for each case study requires the power of co-phonology. Each analysis emphasizes how OT in general and co-phonologies in particular provide a realizational (rather than item-based) definition of reduplication.

References

- Anderson, Stephen. 1992. *A-morphous Morphology*. Cambridge University Press.
- Bar-el, Leora. 2000. Reduplicants are Roots in Skwxwú7mesh (Squamish Salish). *Proceedings of WECOL 12*, 81-99.
- Downing, Laura J. 2003. Compounding and tonal non-transfer in Bantu languages. *Phonology 20*, 1-42.
- Downing, Laura J. 2006. *Canonical Forms in Prosodic Morphology*. OUP.
- Hockett, Charles F. 1966. Two models of grammatical description. In Martin Joos (ed.), *Readings in Linguistics I*, 4th ed. Chicago: University of Chicago Press, 386-99.
- Inkelas, Sharon. 2008. The morphology-phonology connection. Talk given at Pomona College, 1 April 2008.
- Inkelas, Sharon & Cheryl Zoll. 2007. Is grammar dependence real? A comparison between cophonological and indexed constraint approaches to morphologically conditioned phonology. *Linguistics 45*, 133-171.
- Inkelas, Sharon & Cheryl Zoll. 2005. *Reduplication*. Cambridge University Press.
- McCarthy, John & Alan Prince. 1993. *Prosodic Morphology: Constraint Interaction and Satisfaction*. Report no. RuCCS-TR-3. New Brunswick, NJ: Rutgers, NJ.
- Orgun, Orhan. 1996. Sign-based Morphology and Phonology: with special attention to Optimality Theory. PhD dissertation, UC-Berkeley.
- Spencer, Andrew. 1991. Morphophonological operations. In Spencer & Zwicky (eds.), *The Handbook of Morphology*. Oxford: Blackwell, 123-43.

(1) Skw̥wú7mesh (Squamish Salish) reduplication (cited in Downing 2006: 224)

[23] Skw̥wú7mesh reduplication (Bar-el 2000a: figs. (7), (10))

(a) CaC reduplication		
p'əq ^w -p'əq ^w	'yellow'	
təc-təc	'skinny'	
k ^w əs-k ^w əs	'burn'	
təq ^w -təq ^w	'red codfish'	
(b) CV reduplication		
k ^w á-k ^w ay?	'very hungry'	
śé-siq	'fly'	
pó-pum?	'swell'	

(2) Verbal reduplication in two dialects of Chichewa (Downing 2003)

(a) Chichewa-AI and Chichewa-Sam, **stem High tone on penult** (‘[´ marks stem edge)

Base stems of 3+ syllables - tonal transfer

<u>Stem</u>	<u>Gloss</u>	<u>do X here and there</u>
ti-sa-[thandíz-e	let's not help	-[thandíze=thandíze
ti-sa-[vundikír-e	let's not cover	-[vundikíre=vundikíre
ti-sa-[fotokozér-e	let's not explain to	-[fotokozére=fotokozére

Dialect distinction, **stem High tone on final**

(b) **Chichewa-AI** - tonal transfer

ti-[thandiz-é	let's help	-[thandizé= thandizé
ti-[vundikir-é	let's cover	-[vundikiré= vundikiré
ti-[fotokozer-é	let's explain to	-[fotokozeré= fotokozeré

(c) **Chichewa-Sam** - tonal mismatch !

<u>Stem</u>	<u>Phrase-medial/Phrase-final</u>	<u>Gloss</u>	<u>do X here and there (phrase-final)</u>
ti-[thandiz-é.../	-[thandíz-e	let's help	-[thandizé=thandíze
ti-[vundikir-é ... /	-[vundikír-e	let's cover	-[vundikiré=vundikíre
ti-[fotokozer-é... /	-[fotokozér-e	let's explain to	-[fotokozeré=fotokozére

Base stems of 1-2 syllables

(d) **Chichewa-AI**

stem High tone on penult - tonal mismatch

ti-sa-[phé	let's not kill	-[phé=i-phé
ti-sa-[ménye-e	let's not hit	-[ménye=menyé (*-[ménye=ménye)
ti-sa-[péz-e	let's not find	-[péze=pezé (*-[péze=péze)

(e) **Chichewa-Sam**

stem High tone on penult - no transfer!

ti-sa-[phé	let's not kill	-[phe=i-phe (*-[phé=i-phe)
ti-sa-[ménye-e	let's not hit	-[menye=ménye (*-[ménye=ménye)
ti-sa-[péz-e	let's not find	-[peze=péze (*-[péze=péze)