

## Multiple Exponence and the phonology-morphology interface

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The theoretical relevance of Multiple Exponence (ME), a one-to-many mapping between meaning and form (Matthews 1974), has been attributed to the challenges it poses to wide-held principles of economy and structure complexity (Anderson 1992), and the conception of the morpheme as a Saussurean sign (Halle & Marantz 1993, Noyer 1997). In realizational theories of morphology ME is modeled as the multiple realization of morphosyntactic features in the word (Stump 2001), implicitly predicting that only inflectional morphology will display ME. In this paper, I present a typologically unusual case of ME in Choguita Rarámuri, an endangered language, where ME is not morphosyntactically conditioned (as expected in realizational theories), but is instead morphophonologically motivated. Specifically, ME in this language satisfies morpho-prosodic alignment requirements operating at different constituents of the word.

Choguita Rarámuri (Tarahumara), is a Uto-Aztecan language spoken in Northern Mexico, which is highly agglutinating and with a high degree of morphophonological fusion. All data presented were obtained through the author's field research. There are four patterns of optional ME in this language: i) pluractional prefixation and medial stem consonant mutation (1); ii) applicative stems that take applicative suffixes (2); iii) causative suffix doubling (3); and iv) multiple suffixation of applicative suffixes (4). Patterns (iii) and (iv) are prosodically conditioned (only final stress stems display ME). All patterns are uniformly characterized by the following properties: ME is completely superfluous (no additional meanings are realized by any of the exponents); each case involves derivational information (pluractionality and argument structure changing morphology); and each pattern involves formally distinct exponents, whether because they are different markers or different allomorphs of the same marker (e.g. causative *-ti/-ri*). Most importantly, ME is realized in only two verbal zones of the morphological structure (schematized in (5)).

These patterns receive a unified analysis in LPM OT, where constraints associated with different morphological domains within the word may have different rankings (Kiparsky 2000). In a first level of evaluation, a Stem level, unproductive markers and general markedness constraints may render the output of this stem level morphologically opaque (Booij 2002, to appear). In the case of prosodically conditioned ME, for instance, the first exponent is immediately post-tonic, loses its vocalic nucleus and the onset consonant is re-syllabified as coda of the stressed syllable (6). I follow Inkelas et al. (2006) and assume that the morphological opacity of a reduced level output can enforce a structural well-formedness requirement at a constituent level (a 'slot' in the word). The reduced Stem output is then the input to a second round of morphology, where ME turns the suboptimal Stem form into a possible (i.e., self-standing) word. The general, independently motivated markedness constraints operating at this level enforce that the exponent in this morphological constituent be coextensive with the syllable rhyme. Finally, other well-formedness constraints operating at this level rule out ME of other morphological exponents in the language. There are no ME-specific constraints, but only general markedness constraints operating at different morphological constituents of the word.

The Choguita Rarámuri case shows that ME requires a new typology. In this new typology, a subtype of ME will be synchronically motivated by structural well-formedness requirements and will not be restricted to any specific type of morphology. Morpho-prosodic alignment has been argued to be motivated functionally by the need to recover morphological information, as marked sequences at morpheme junctures will facilitate parsing of morphological components (Booij 2002, Broselow 2003). The properties of Choguita Rarámuri ME fall from a general principle of parsability or recoverability of morphological information (van Oostendorp 2004, 2006, Hay & Plag 2004). ME provides optimal morpho-prosodic alignment and a critical cue of a relevant juncture in this morphologically complex language.

## Examples

- (1) **i-kibá** ‘snow a lot’ < **kipá** ‘snow’  
**a-pahí** ‘drink a lot’ < **bahí** ‘drink’  
**i-sirákame** ‘be red, pl’ < **sitákame** ‘be red, sg’

- (2) **uké-ki** ‘rain.**Appl-Appl**’ < **ukú** ‘rain’  
**ičí-ki** ‘plant.**Appl-Appl**’ < **ičá** ‘plant’  
**suwé-ki** ‘finish.**Appl-Appl**’ < **suwá** ‘finish’

- (3) **mé-r-ti** ‘win-**Caus-Caus**’  
**ko’í-r-ti** ‘kill.pl-**Caus-Caus**’  
**bahí-r-ti** ‘drink-**Caus-Caus**’

- (4) **pá-s-ki** ‘throw-**Appl-Appl**’  
**sú-n-ki** ‘sew-**Appl-Appl**’  
**boto-bú-n-ki** ‘sink-Tr-**Appl-Appl**’

- (5) Choguita Rarámuri verbal domains and the localized appearance of ME

$\alpha$	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	S11	S12
<b>Inner Stem</b>	Derived Stem		<b>Syntactic Stem</b>			Aspectual Stem			Finite Verb			Sub Verb
<b>ME</b>			<b>ME</b>									

- (6) Causative doubling and multiple suffixation of applicatives

<b>Pattern</b>	<b>Prosodic generalization</b>	<b>Examples</b>
Causative doubling	[...’ $\sigma$ -C]-ti	[bučé- <b>r</b> ]- <b>ti</b> -ma
Multiple applicatives	[...’ $\sigma$ -C]-ki	[sú- <b>n</b> ]- <b>ki</b> -ma

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