

EMPIRICAL SUPPORT FOR MINIMALITY-DRIVEN MORAIC COERCION¹

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0 Introduction

Minimal restrictions on the size of words have a connection with the stress system (Prince 1980, McCarthy and Prince 1985)

- Words must be parsed by metrical feet
- Metrical feet are subject to size restrictions

The Prosodic Minimality Hypothesis (PMH): minimal words are identical to minimal feet

Empirical challenges for the PMH

- Garrett 1999: long list of languages where the minimal word is different from the minimal foot
- Gordon 2006[1999]: weight criteria for minimality differ from those for other weight-sensitive properties

In this talk, I focus on the most common subset of counterexamples

- CVC counts as heavy for minimality but is light elsewhere in the phonology
- About half of Garrett's counterexamples are of this type, and the vast majority of Gordon's examples

Solution: moraic coercion (cf. Morén 1999)

- Such weight mismatches are predicted by the interaction of ordinary OT constraints, as long as the weight of codas is negotiable by OT constraints
- Focus of this talk: independent arguments for coercion

1 Moraic coercion

- Like other phonological properties, weight is negotiable in OT (Morén 1999)
- A high-ranked constraint against moraic codas ($*C_{\mu}$) produces a language where CVC is light
- But this constraint can be trumped by word-minimality, resulting in bimoraic CVC words but monomoraic CVC syllables in longer words
- In the following generalized example, CVC counts as light except in monosyllables, where high-ranked FTBIN coerces the coda to be moraic
- The language still has a minimality syndrome, since underlying CV lengthens

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(1)

	FTBIN	DEP- μ (V)	*C $_{\mu}$	BEMORAIC(C)
/CVCCV/ \Rightarrow (CV $_{\mu}$ CCV $_{\mu}$)				*
(CV $_{\mu}$ C $_{\mu}$ CV $_{\mu}$)			*!	
/CVC/ (CV $_{\mu}$ C)	*!			*
\Rightarrow (CV $_{\mu}$ C $_{\mu}$)			*	
(CV $_{\mu\mu}$ C)		*!		*
CV (CV $_{\mu}$)	*!			
\Rightarrow (CV $_{\mu\mu}$)		*		

- If correct, the coercion analysis neutralizes most of the Gordonian counterexamples to the PMH
- Although perfectly ordinary in the OT context, the analysis implied by (1) amounts to speculation until independent evidence for the mora in CVC words turns up

Three empirical arguments for coercion:

- Djaru: evidence for mora in CVC words from allomorphy
- Walmatjari: evidence for mora in CVC members of compounds from a stress-deletion interaction
- Greek: evidence for mora in CVC morphemes in prefixed verbs from stress

2 Independent support for coercion

2.1 Djaru

- Data from Tsunoda 1981

Ergative allomorphy is sensitive to mora count

- (2) -(ŋ)gu in bimoraic stems (3)a
-lu in longer stems (3)b-c

- (3)d shows that CVC in polysyllables is monomoraic

- (3) a. ŋaba-ŋgu 'water'
b. maŋari-lu 'vegetable food'
c. ga:ja-lu 'bush tomato'
da:di-lu 'daddy'
d. jambi-gu 'big'

All monosyllables are CVC; no CV content words

- CVC 'preverbs' behave as bimoraic words
- Augmented with -gu/-ŋgu, whose nature is unclear (Tsunoda 1981)
- Resulting CVCCV form differs from that in (3)d in taking the ergative -lu instead of -(ŋ)gu

- (4) a. jud-gu-lu 'sitting'
jud-ŋu-lu
b. dyad-ŋu-lu 'standing'

2.2 Walmatjari

- Data from Hudson 1978, Hudson and Richard 1969

Ergative allomorphy words in the same way as in Djaru

- (5) a. -ŋa in bimoraic stems (6)a
b. -[a in longer stems (6)b

- CVCCV words are bimoraic (6)c

- (6) a. maŋa-ŋa 'with the girl'
b. ŋapu[u-[a 'with the sister'
maŋa-kura-[a 'at the girl's [place]'
c. ŋarpu-ŋa 'with the father'

Walmatjari has lexical monosyllables² (Hudson 1978: 6; Hudson and Richard 1969: 186-187)

- (7) ɬĩrp 'mark on message stick'
mil 'eye'
ral 'hair of head'
wil 'star'

- In the following examples, CVC verb stems are compounded with C-initial stems
- The initial consonants of the second stem delete under complex phonotactic conditions (8)a-b
- Under other conditions, the initial consonant becomes a stop (8)c
- Secondary stress on the initial syllable of the second morpheme is present only if the consonant has not been deleted (Hudson 1978: 13-14)

- (8) a. /yut-wanti/ → yúntanti 'sit down!'
/jup-wanti/ → yúpanti 'jump down!'
/taɬ-wanti/ → táɬanti 'break and fall [as a tree]'
- b. /kírr-maŋja/ → kírraŋja 'sit!'
/yuk-maŋja/ → yúkaŋja 'lie down!'
/yuŋ-manta/ → yúŋanta 'cut it!'
/lap-maŋja/ → lápaŋja 'run!'
- c. /kit-manta/ → kítpànta 'stick to it!'
/turt-manta/ → túrtpànta 'pluck it out!'
/paj-maŋja/ → pájpàŋja 'stink!'

Claim:

- Consonant deletion forces resyllabification of final C to onset
- If the consonant does not delete, FTBIN and ALIGN(STEM,FOOT) coerce that syllable to be heavy

²Hammond 1994 is wrong to claim otherwise.

- (9) a. /yut-wanti/ → (yú.t-an).ti 'sit down!' *(yú.)(t-ànti) *(yút).-(ànti)
 b. /kit-manta/ → (kít).-(pànta) 'stick to it!' *(kít.-pan)ta

(10)

	ONSET	ALIGN(ST,FT)	FTBIN	*C _μ	BEMORAIC(C)
/yut-wanti/ ☞ (yú.t-an).ti		*			*
(yú.)(t-ànti)		*	*!		*
(yút _μ).-(ànti)	*!			*	*
(yút).-(ànti)	*!		*		**
/kit-manta/ ☞ (kít _μ).-(pànta)				*	*
(kít).-(pànta)			*!		**
(kít.-pan)ta		*!			**

- The ranking of FTBIN >> *C_μ, motivated by the behavior of compounds, is exactly the ranking necessary for the coercion effect

2.3 Greek

CVC counts as heavy; final C is 'extrametrical' for the purposes of stress (Sauzet 1989, Golston 1991)

- Stress rule: ignoring the final consonant, build a moraic trochee at the right edge
- Default accent goes on syllable immediately preceding the head of that trochee (interpreted as HL* melody)
- Problem: CVC monosyllables exist (11)d

- (11) a. CVV: *gée* 'land', *dóo* 'give (subj)'
 b. CVVC: *p^hóos* 'light'
 c. CVCC: *háls* 'salt'
 d. CVC: *dós* 'give.AOR.IMP', *t^hés* 'put.AOR.IMP'

- Solution: coercion by FTBIN

(12)

	DEP(μ)-V	FTBIN	NONFIN(C)
do-s do _μ <s>		*!	
☞ do _μ s _μ			*
do _μ o _μ <s>	*!		

- Independent confirmation: accent
- Normally, imperatives receive default accent
- Imperatives of prefixed verbs built from the stems in (11)d receive unexpected non-default accent (13)a (Vendryes 1945: 128, Smyth 1956)
- The location of the accent can be explained if the CVC syllable is heavy and thus constitutes a foot of its own

- (13) a. perí-t^{hes} 'put round' (default accent would be *périt^{hes})
 par-én-t^{hes} 'insert'
 apó-dos 'give away'
 sym-pró-es 'join in paying' (from /hes/ with *h*-deletion)
 b. pe.ri.(t^{hes}) *pé.(ri.t^{he})<s>

- This is expected if the final -s in *t^{hes}* is moraic, and retains its moraicity in the derived form

3 Conclusion

Upshot: languages commonly have size-dependent weight mismatches

- Coercion insulates the PMH from Gordon's counterexamples
- More generally, explains the prevalence of CVC minima in languages with a variety of prosodic systems, including syllabic trochees, identified by Garrett 1999
- It is too early to claim, as Garrett did, that "minimal words are not minimal feet"

4 References

- Garrett, Edward (1999). Minimal words aren't minimal feet. In: Matthew K. Gordon, ed., *Papers in phonology 2: UCLA working papers in linguistics, vol.1.*, 68-105.
- Golston, Chris (1990). Floating L* (and H) tones in Ancient Greek. *Arizona phonology conference: Volume 3*, ed. by James Myers and Patricia Pérez, 66-82.
- Gordon, Matthew (2006[1999]). *Syllable weight: phonetics, phonology, and typology*. New York: Rutledge. (Author's revised PhD Thesis, UCLA).
- Hammond, Michael (1994). An OT account of variability in Walmatjari stress. Ms., University of Arizona. Available on ROA.
- Hudson, Joyce (1978). *The core of Walmatjari grammar*. Canberra: Australian Institute for Aboriginal Studies.
- Hudson, Joyce, and Eirlys Richards (1969). The phonology of Walmatjari. *Oceanic linguistics* 8(2): 171-189.
- McCarthy, John J. and Alan Prince (1985). Prosodic morphology. Ms., University of Massachusetts at Amherst.
- Morén, Bruce T. (1999). *Distinctiveness, coercion, and sonority*. PhD Thesis, University of Maryland at College Park.
- Prince, Alan (1980). A metrical theory of Estonian quantity. *LI* 11(3): 511-562.
- Sauzet, P. (1989). L'accent du grec ancien et les relations entre structure métrique et représentation autosegmentale. *Langages* 95: 81.
- Smyth, Herbert Weir (1956). *Greek grammar*. Revised by Gordon M. Messing. Harvard University Press.
- Tsunoda, Tasaku (1981). *The Djaru language of Kimberley, Western Australia*. Canberra: The Australian National University.
- Vendryes, Joseph (1945). *Traité d'accentuation grecque*. Paris: Librairie C. Klincksieck.