



# Minimality, Movement, and Existential Match in Mandar

Dan; Research Symposium; 5/7

# The Central Question

- ▷ What gives rise to prosodic words?
  - Syntactic diacritics: Svenonius 2016
  - Content Alignment: McCarthy & Prince 1993a,b  
“The left edge of an  $X^0$  → the left edge of a  $\omega$ .”
  - Content Matching: Selkirk 2009, 2011  
“Both edges of an  $X^0$  → the edges of a  $\omega$ ”

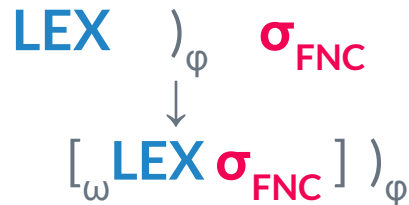
# Existential Correspondence

- ▷ **My Proposal: Existential Match:**
  - “Lexical  $X^0$ s must correspond to  $\omega$ s.”
  
- ▷ **Comparandum: Content-Sensitive Match( $X^0_{\text{LEX}}, \omega$ )**
  - “The exponents of Lexical  $X^0$ s must be left/right-aligned with the left/right edges of  $\omega$ s.”

# Word-Level Mismatch in Mandar

- ▷ **Mandar** imposes prosodic constraints on the  $\omega$ , and it resolves them with syntax-prosody mismatch.
  - There are second-position clitics that attach to the  $\phi$ ,
  - ... but they get parsed into  $\omega$ s with certain  $X^0$ s

- **Prosodic Lowering:**



- ▷  **Existential Match;**  **Content-Sensitive Alternative**

# Payoff: Deriving Ordering Effects

- ▷ Mandar has second-position clitics that show an ordering effect:  $\sigma\sigma > \sigma$

(1) loppa'    sannal        dua        memang    to i  
hot        very        still        indeed    also agr

- ▷ Proposal: the ordering effect follows from a requirement for Existential Match.

# Roadmap

- |                                   |       |
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1.

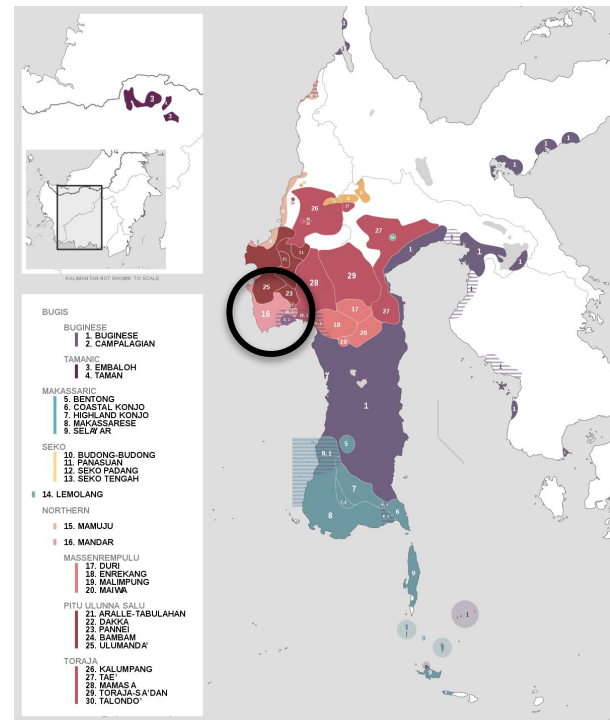
# Word and Phrase in Mandar

Minimality and Epenthesis

# Mandar

- ▷ South Sulawesi, Austronesian
- ▷ 400,000 Speakers; Indonesia

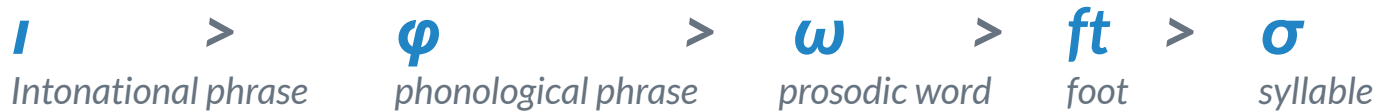
- ▷ Sources of Data:
  - Descriptive work
  - Elicitation, 2018-





# The Topic

- ▷ Prosodic Hierarchy Theory: (Selkirk 1984...)  
Phonological strings have constituent structure.



- ▷ Some structure: built by phonology      *σ*
- ▷ Other structure: built at the interface      *ω*

# The Prosodic Word

- ▷ The word: penultimate stress.
- ▷ This pattern: disyllabic trochee

[ω ... ('σσ)]

(2) **Bémme** mi      **hapému**      sun di      **pokétmu**  
fell      agr      your phone      out of      your pocket  
'Your phone fell out of your pocket.'

# The Minimality Effect

- ▷ Prosodic Constraint:  $*[\omega \sigma]$ 
  - **Headedness:** the  $\omega$  must contain a foot
  - **Foot Binariness:** the foot must contain two syllables
  
- ▷ **Loanword Phonology: ?V-Epenthesis**
  - Malay: lem rem bom cap bang
  - Mandar le'eng re'eng bo'ong ca'a ba'ang  
glue brake bomb brand azan

2.

# Prosodic Lowering

Functional Clitics and Minimality Resolution

# The Functional Clitics

- ▷ Two sets of second-position clitics:
  - agreement: **a', o, i**
  - aspect: **mo, pa, da** “now, yet, just”
- ▷ Prosodic Parse: **outside of the  $\varphi$ .**

(3)  $(_{\varphi} [_{\omega} \text{boyán-na} ] )$  **i**  $(_{\varphi} [_{\omega} \text{íting} ] [_{\omega} \text{táu} ] )$   
house-of agr that guy  
“it’s that guy’s house”

# The Right Edge of $\varphi$

- ▷ Functional clitics surface before vowel sequences:

(4)  $(_{\varphi} [_{\omega} \text{massáu} ] )$  **i**  
          recover           agr  
          `he recovered`

- ▷ Comparison: vowel sequences eliminated  $\varphi$ -medially

(5)  $(_{\varphi} [_{\omega} \text{pura} ] )$            **i**            $(_{\varphi} [_{\omega} (\text{máссо}) ]$     $[_{\omega} \text{amongenna} ] )$   
          already           agr           recover           his disease  
          `He already recovered from his disease`

# Monosyllables: ?V-Epenthesis at )

φ

- ▷ “Functional” monosyllables: ok φ-medially...
- ▷ But: ?V-Epenthesis at )φ

páte=i      lagúmmu!  
turn off      the music!

(6)      ( φ    nauláccar ) i      (    sung      hapému      )  
          I'll throw      agr      out      your phone

(7)      ( φ    nauláccar ) i      (    sú'ung    )      ( íting hápe )  
          I'll throw      agr      out      that phone

# Prosodic Lowering

- ▷ When “functional” monosyllabic  $X^0$ s are initial:
  - They precede functional clitics
  - They form  $\omega$ s, but don’t show  $\text{?V-Epenthesis}$ .

(8) **Súng-i**      di boyang  
out-agr      of house  
‘He came out of the house’

(9)  $[\omega \sigma \sigma_{\text{FNC}}] )_{\varphi}$



# 3.

## Existential Match

**Correspondence and Autonomous Alignment**

# From Syntax to Prosody

- ▷ Syntactic  $X^0$ s are subject to this constraint:

**Max( $X^0$ ):** a lexical  $X^0$  must correspond to a  $\omega$ .

- ▷ Formally:
  - AOV for every  $X^0$  at the base of an extended projection in an input syntactic representation  $S$  that does not correspond to a  $\omega$  in an output prosodic representation  $P$ .

# From Prosody to Syntax

- ▷ Prosodic  $\omega$ s are subject to these:

**Align-L( $\omega, X^0$ ):** the left edge of a  $\omega$  must be aligned with the left edge of the exponent of the corresponding  $X^0$

**Align-R( $\omega, X^0$ ):** the right edge of a  $\omega$  must be aligned with the right edge of the exponent of the corresponding  $X^0$

# Prosodic Well-Formedness

- ▷ Four phonological constraints:

**Headedness( $\omega$ ):** the  $\omega$  must contain a foot

**Foot Binariness:** the foot must contain two syllables

**DEP(segment):** do not epenthesize segments

**DEP(place):** do not epenthesize place features

# Existential Match: Analysis

- ▷ Ranking:  $\text{Dep}(\text{Segment}) > \text{Align-R}(\omega, X^0)$

<b>sung i</b>	<b>Max(<math>X^0</math>)</b>	<b>Headedness(<math>\omega</math>)</b>	<b>Foot.Binariness</b>	<b>DEP(SEG)</b>	<b>Align-R(<math>\omega, X^0</math>)</b>
☞ $[\omega (\text{sung}i)]$					*
$[\omega (\text{su}'\text{ung})] i$				*!*	
$[\omega (\text{sung})] i$			*!		
$[\omega \text{ sung}] i$		*!			
<b>sung i</b>	*!				

# Alternative: Content-Sensitive Match


- ▷ A problem for Selkirk's (2009, 2011) theory:

**Content-Sensitive Match( $X^0$ ):** AOV for every lexical  $X^0$  whose exponent does not have its left and right edges aligned with those of a corresponding  $\omega$ .



# Alternative: No Misalignment

- ▷ The problem:
  - ?V-Epenthesis satisfies Content-Sensitive Match
  - Prosodic Lowering does not.

sung i	Match( $X^0, \omega$ )	Headedness( $\omega$ )	Foot.Binararity	DEP(SEG)
$[_\omega (\text{sungi})]$	*!			
 $[_\omega (\text{su'ung})]$ i				*!* i
$[_\omega (\text{sung})]$ i			*!	
$[_\omega \text{sung}]$ i		*!		

# Second Argument: Hiatus Resolution

- ▷ **Solution?** “Content-Sensitive Match is inactive.”
  - Ranking:  $\text{DEP}(\text{segment}) > \text{Match}(X^0)$
  - Result: “better to just give up if you need epenthesis.”
  
- ▷ **No.** Lowering is not just a trick to resolve minimality.



# Prosodic Lowering and Hiatus

▷ Vowel sequences of rising sonority:

- Word-final: (V.V)

(10) (di.ang) (saba)  
there's an issue

- Before functional clitics: (GV.σ<sub>FNC</sub>)

(11) (dyam.mo) (saba)  
there's-now an issue

# Prosodic Lowering and Hiatus

▷ Vowel sequences of falling sonority:

- Word-final: (V.V)

(12) Inna mukiringi (la.o)  
where'd you send it to?

- Before functional clitics: (VG.σ<sub>FNC</sub>)

(13) (law.mo) (Jogja)  
to-now Jogjakarta

# Analysis: Existential Match

- ▷ Ranking: \*Hiatus > Align-R( $\omega, X^0$ )

diang <b>mo</b>	Max( $X^0$ )	Headedness( $\omega$ )	Foot.Binararity	*Hiatus	Align-R( $\omega, X^0$ )
☞ [ $\omega$ (dyam.mo)]					*
[ $\omega$ (di.am) ] <b>mo</b>				*!*	
[ $\omega$ (dyam) ] <b>mo</b>			*!		
[ $\omega$ dyam ] <b>mo</b>		*!			

# 4.

## Clitic Linearization

### Weight-based Ordering and Existential Match

# The Second-Position System

- ▷ Second-position clitics: surface in the first  $\varphi$
- ▷ Surface order > Syntactic Height

(14) Matindo **bega** **dua** **memang** **i**  
sleeps too much still indeed agr  
`He indeed still sleeps too much!`

# The Templatic Effect

▷ Phonological generalization:  $\sigma\sigma > \sigma$

(15) Matindo **memang** **bo** **i**  
sleep indeed again agr  
'He's indeed asleep again!'

(16) \*Matindo **bo** **memang** **i**  
sleep again indeed agr  
'He's indeed asleep again!'

# Ordering Summary

- ▷ Phonological generalization:  $\sigma\sigma > \sigma$

Second-Position Clitic Order							
VP-level		TP-Level		CP-Level		Monosyllabic	
sannal	very	dua	still	memang	indeed	bo	again
tongang	really	le'ba'	precisely	bandi	verily	to	also
bega	too much			bappa	i hope	a	maybe

# Templatic Analysis?

- ▷ Similar patterns exist across the Philippines
- ▷ Billings & Kaufman 2004: Templatic Constraint

**$\sigma\sigma$**  >  **$\sigma$** :  $\sigma\sigma$  clitics must precede  $\sigma$  clitics

... <b>bo memang</b>	<b><math>\sigma\sigma</math> &gt; <math>\sigma</math></b>	<b>Linearity</b>
 <b>memang bo</b>		*
<b>bo memang</b>	*!	



# Mapping to Words

- ▷ Monosyllables alone:
  - Bear stress; show epenthesis

(17) Loppa'      **tó'o!**  
hot            also  
'Hot too!'

- ▷ Proposal:  $[\omega \sigma \text{?} \nu ] )_{\varphi}$

# Mapping to Words

- ▷ Before functional clitics:
  - Stress, but no epenthesis.

(18) Loppa'      **tó-i!**  
hot            also-agr  
'It's hot too!'

- ▷ Proposal:  $[\omega \sigma \sigma_{\text{FNC}}] )_{\varphi}$

# Existential Match > Linearity

- ▷ Linearity: higher clitics follow lower ones.
- ▷ Ranking:  $\text{Max}(X^0) > \text{Linearity}$

... <b>bo</b> <b>memang</b> <b>i</b>	$\text{Max}(X^0)$	Headedness	FtBin	DEP	Linearity	Align-R( $\omega, X^0$ )
☞ $[_\omega (\text{memang})] [_\omega (\text{bo.i})]$					*	*
$[_\omega (\text{memang})] [_\omega (\text{bo'o})] \mathbf{i}$				*!* *	*	
$[_\omega (\text{bo})] [_\omega (\text{memang})] \mathbf{i}$			*!			
$[_\omega \text{bo}] [_\omega (\text{memang})] \mathbf{i}$		*!				
<b>bo</b> $[_\omega (\text{memang})] \mathbf{i}$	*!					

# 5. Conclusion

# Misalignment: Summary

- ▷ Prosodic constraints force functional clitics to be parsed into  $\omega$ s with unrelated syntactic  $X^0$ s.
- ▷ This violates content-sensitive Match constraints.
- ▷ I've proposed that it satisfies Existential Match,
  
- ▷ And this allows us to explain cases where the phonology *places*  $X^0$ s near these functional clitics.

# The Bigger Picture

- ▷ The result is a theory that separates the need for correspondence from requirements of alignment.
- ▷ There's reason to do so:
  - Edge asymmetries suggest the need for content sensitive align constraints; redundant with content sensitive Match.
  - Itô & Mester 2019: Correspondence is enforced when alignment is impossible at the  $\phi$ -level (\*he's taller than i'm)

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