Ellipsis, Minimality, and Movement in Bahasa Mandar

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Introduction

Dan

- I'm a Ph.D student in linguistics at the University of California, Santa Cruz
- I work with syntax and phonology, in the paradigm of generative linguistics
- My research is focused on a regional language of Sulawesi: Bahasa Mandar
- Since 2019: working with Jupri Talib

UC Santa Cruz

Bahasa Mandar

The Generative Program

- My work contributes to generative linguistic theory.
- Generative linguistics is a program that aims to:
  - find abstract similarities between languages,
  - build a theory to describe those similarities,
  - and try to explain **why** we find them.
    - Why do languages do specific things?
    - What is the nature of our linguistic competence?

The Generative Program

- There are two goals within this enterprise:
  - Descriptive Adequacy:
    - The theory must capture patterns in language
    - … and capture differences between languages
  - Explanatory Adequacy:
    - The theory must explain why these patterns exist
    - … and make predictions about what cannot exist.

The Generative Program

- Occasionally, there is tension between these goals:
  - The need for Explanation:
    - can lead to theories which are English-specific
    - … and make it harder to analyze other languages
  - The need for Description:
    - can lead to theories which are not very deep
    - … and do not allow us to make predictions
  - Our objective: to meet both goals + enrich the theory.

Today's Project

- The goal of my talk today: to use generative theory to understand a phonological pattern in Bahasa Mandar.

- The pattern involves alternations in phonological size:

  - There are demonstratives that are one syllable long.
  - Under some condutions, they stay small
  - Under others, they are forced to expand

Today's Project

- The normal demonstrative:

(1) bengang a' **do** buku o
give me that book there

- If the demonstrative is alone: sometimes it expands

(2) bengangi **di'o** ____ guru o
give that ____ teacher there
`Give that to the teacher.'

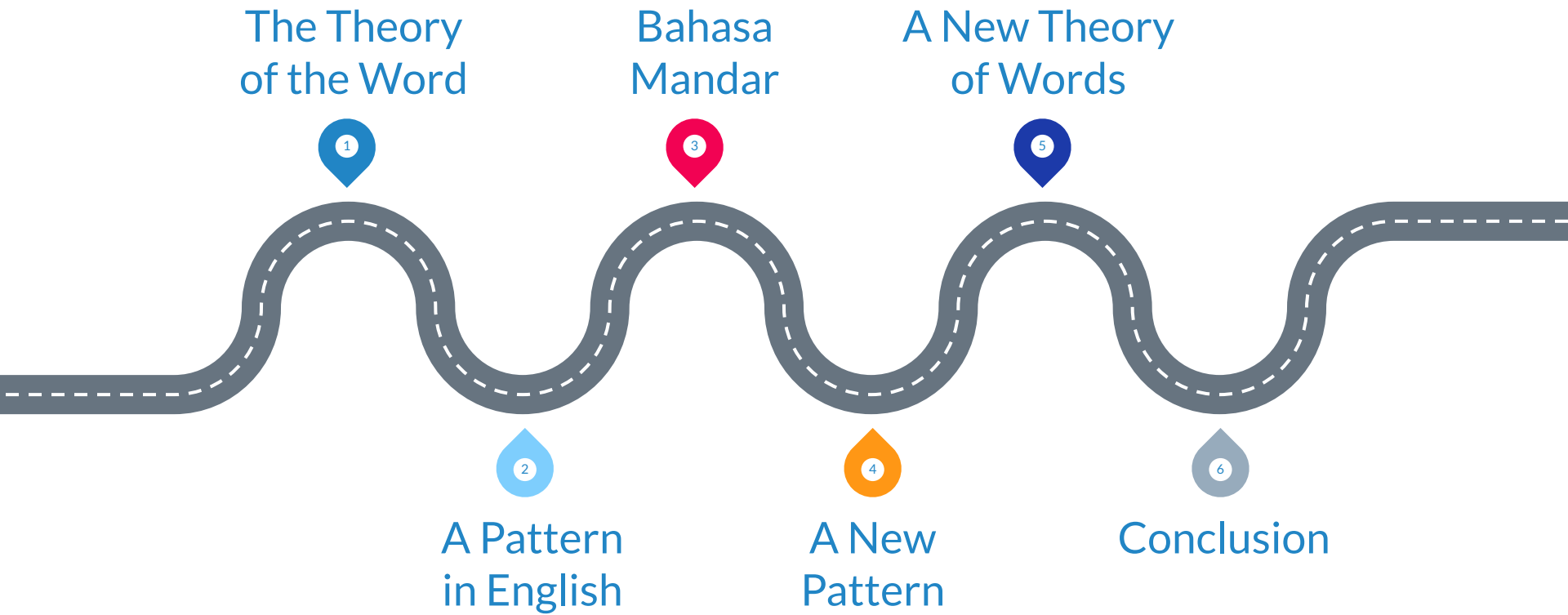
- … but under other circumstances, it does not.

(3) bengangi **do** ____ guru-mu o
give that ____ teacher-your there

Today's Project

- This humble pattern is similar to something in English.
- This similarity will lead us to a cross-linguistic theory
  - … which explains when demonstratives can be small
  - … and when they will be forced to expand.
- Our investigation will lead us to questions of depth:
  - on the nature of word-building,
  - on the interaction of syntax and phonology,
  - and ultimately: on the status of movement.

Roadmap


The Theory of the Word
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A Pattern in English
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1.

Background

The Theory of Word Formation

The Concept of Modularity

- Our investigation begins with the theory of sentences.

- When we produce a sentence, it contains three parts:

  - Words (lexical items, like nouns and verbs)
  - Syntax (an order and organization of words)
  - Phonology (a rhythm and pronunciation)

The Concept of Modularity

- Generative theory: our internal knowledge of language contains different components that host these things.
- There is a **LEXICON**, which contains lexical items (roots, like “dog” and “play”)
- There is a **SYNTAX**, which organizes lexical items into phrases and then sentences, and
- There is a **PHONOLOGY**, which places rhythm on the sentence and prepares its pronunciation.

The Concept of Modularity

- Generative Theory: every sentence is built in stages
  - **Numeration**: we select lexical items. (Chomsky 2000)
  - **Syntax**: we place the lexical items into a structure, one by one, gradually building clauses. (Chomsky 2000)
  - **Phonology**: we then figure out the pronunciation of the whole sentence all at once. (Prince & Smolensky 1993)

The Concept of Modularity

- The Derivational Hypothesis (Chomsky 1995)
  - The three stages are strictly ordered
    - Once we select roots, we move to syntax
    - Once the syntax is finished, we move to phonology
  - There is no moving backwards.

The Theory of Late Insertion

- The Derivational Hypothesis raises a question of **Timing**.
- The syntax is resposible for operations like movement.

(4) You bought what?

(5) 

(Movement: Chomsky 1965; Ross 1967: McCloskey 2001)

The Theory of Late Insertion

- Movement is only sensitive to syntactic information.
  - The nouns that move in English are a syntactic class: they are all question words, like “who, how, why”
  - We can sketch the rule like this:

(6) Question-Displacement Rule

“Syntactic elements that bear the feature [+Question] must move to the left edge of the clause.” (cf. Chomsky 2000)

The Theory of Late Insertion

- Syntactic movement rules are not sensitive to phonology.
  - They may refer to syntactic features like [+Question]
  - But they cannot refer to properies like “starts with “w””

(5) What[+Q] did you buy ___?

(7) *Wheat[+w] did I buy ___.

- The Principle of Phonology-Free Syntax (Zwicky & Pullum 1986)

The Theory of Late Insertion

- The Principle of Phonology-Free Syntax can be explained through the Derivational Hypothesis in terms of **timing**.
  - Syntax precedes phonology.
  - In the syntax, phonological information is absent.
    - When the syntax looks at “what”, it just sees [+Q]
    - It does not know anything about pronunciation.

The Theory of Late Insertion

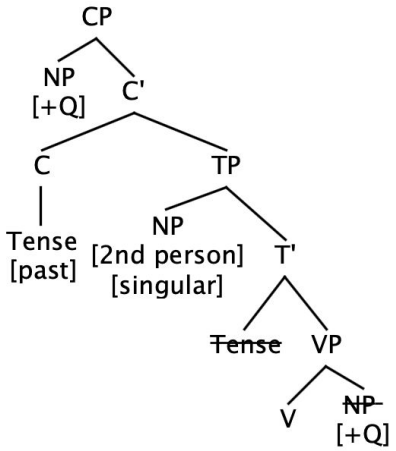
- The hypothesis: phonological information only appears after the syntax is complete, right here.

- This is known as the Theory of Late Insertion.
  (Bonet 1991; Halle & Marantz 1993)

The Theory of Late Insertion

- Late Insertion → words receive phonological content after syntax

- This means that the syntax doesn't contain phonological content. Terminals just have syntactic features, so for "what did you buy":



The Theory of Word Formation

- The Theory of Late Insertion raises a puzzle about the Word.
- Words are often internally complex: English verbs

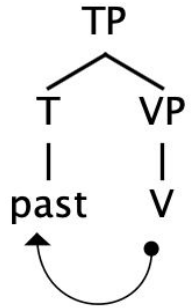
(8) walk-**ed**, laugh-**ed**, explain-**ed**, request-**ed**
V-T.past V-T.past V-T.past V-T.past

- These words must be assembled in the syntax, because their component parts can be separated (Halle & Marantz 1993)

(9) **Did** they walk?
(10) They **did** not walk.

The Theory of Word Formation

- Usually, the syntax combines the verb with tense:
  - Through more movement;
    Chomsky 1956, 2001
    Harizanov & Gribabova 2018



- And then it sets up specific instructions for pronunciation:
  - “With this verb, T.past is pronounced as “-ed”.
  - The verb and T.past form a single phonological word

(McCarthy & Prince 1993; Selkirk 1995; 2009)

The Theory of Word Formation

- Within this system, the form of T.past raises a mystery.
- English past tense is exponed in many different ways:

(11)	Vowel change:	run	ran	fall	fell
(12)	Vowel change + t:	sleep	slept	buy	bought
(13)	No change at all:	hit	hit	spit	spit

The Theory of Word Formation

- These patterns suggest that [T.past] can have four shapes:
  - /-ed/
  - [Vowel change]
  - [Vowel change] + /-t/
  - /Ø/

- The alternation between these forms is called **Allomorphy**.
  - It is a matter of rich research in modern generative work (Bonet 1991, Embick 2010, Nevins 2011, Bobaljik 2012)

The Theory of Word Formation

- Most cases of allomorphy are not sensitive to phonology.
  - The shape of tense does not depend on the shape of V.

    (14) ride slide glide
    (15) rode slid glided

  - Rather: the choice of allomorph is generally arbitrary

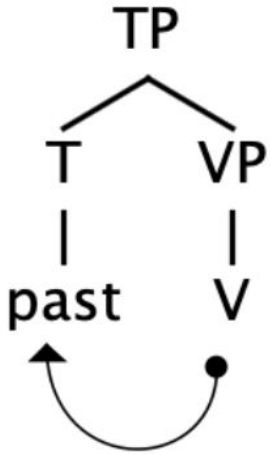
    (16) [T.past] → o / ride_, → i / slide, → -ed / glide_

The Theory of Word Formation

- The Derivational Hypothesis: this suggests a fact of timing.
  - Allomorph selection occurs before there is phonology.
  - The syntax sees a tree like this:
  - And forces one allomorph to appear.

(17) Realization Rules (Halle & Marantz 1993)

[T.past] ⟷ [-ed] / GLIDE
[T.past] ⟷ [-Ø] / RIDE
[RIDE] ⟷ [rode] / T.past



The Phonology of Allomorphy

- This hypothesis: allomorphy does not care about phonology.
  - In every case where an element has multiple allomorphs,
  - The choice between the two
    - Cannot be sensitive to phonology
    - Cannot be driven by phonological constraints.
  - Rather: the syntax gives instructions that are sensitive to
    - Syntactic features (Tense.Past), and
    - The lexical identity of roots (Glide, Ride, Slide)

The Phonology of Allomorphy

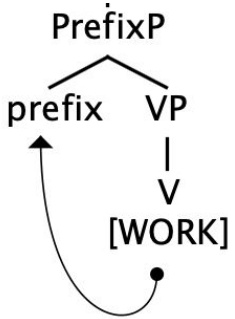
- Puzzle: there are exceptions to this pattern.

(18)	**ber**-jalan	ber-usaha
(19)	**be**-per**r**gian	be-ker**r**ja
(20)	oma**h**-**e**	(rumah-nya; bahasa Jawa)
(21)	kanc**a**-**ne**	(teman-nya; bahasa Jawa)
(22)	kiri**ng**-**ang**	(kirim-kan; bahasa Mandar)
(23)	bac**a**-**ngang**	(baca-kan; bahasa Mandar)

The Phonology of Allomorphy

- These exceptions suggest that the phonology can play a role.

- A phonological account:
  - The syntax attaches the affix “ber” to a verb.
  - It doesn’t say anything about its pronunciation.
  - The syntax of “bekerja” looks like this:

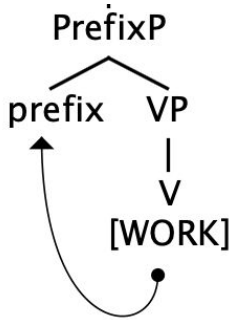


The Phonology of Allomorphy

- These exceptions suggest that the phonology can play a role.

- A phonological account:
  - The phonology looks at this and makes a choice.
  - It sees two possible allomorphs for the prefix:

    [**be**-kerja]
    [**ber**-kerja]



  - The phonology does not want two syllables in a row to end in “r”, so
  - It forces the prefix to be pronounced **be-**.
    (Mester 1994, Mascaró 2007, Wolff 2009, Bennett 2018)

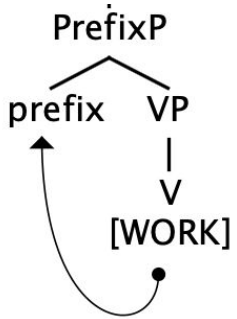
The Phonology of Allomorphy

- However: there is a large literature that rejects this idea.
  (Paster 2006, Embick 2010; Bobaljik 2012; Gouskova & Bobaljik 2022)

- This literature says: it's about roots and features.
  - From the same starting syntax…
  - The root [WORK] contains an instruction:

    (24) [ber] → [be] / __-[WORK]

  - The pattern of allomorphy does not refer to phonology.
  - It is accidental and irrelevant that it avoids a sequence of coda r's.



The Phonology of Allomorphy

- The debate between these two camps is serious and deep, and it touches on two central questions in the theory:
  - What is the role of phonology in word formation?
  - What is the division of labor between syntax and phonology?

- The goal of this talk: to work through this mystery.

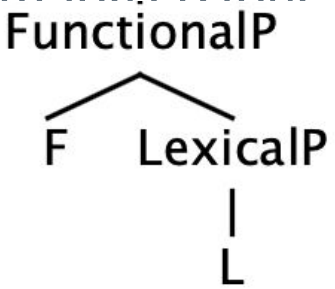
2.

An English Effect

A New Kind of Allomorphy

Functional Words

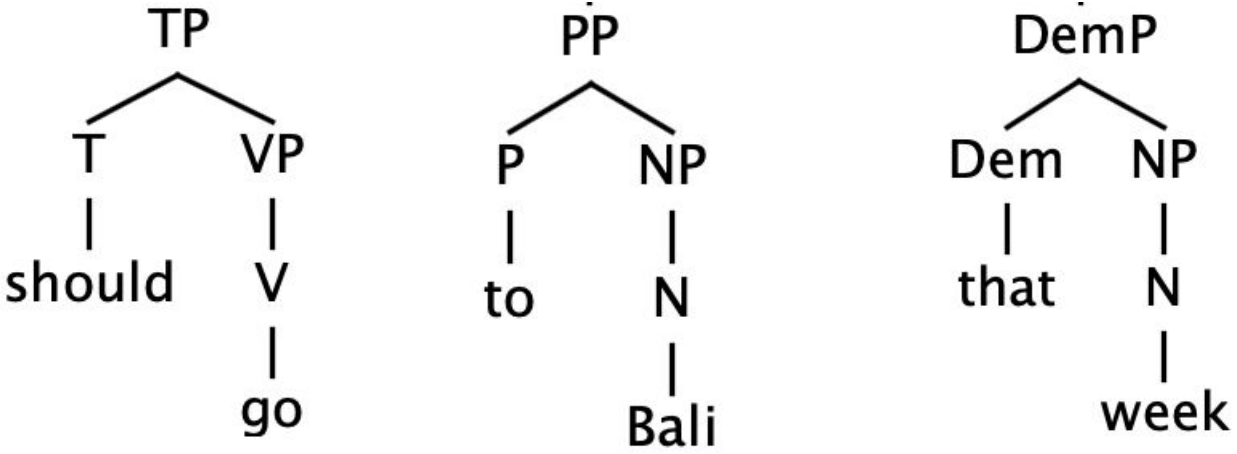
- We will contribute to this debate by looking into "Stranding."
  (Ross 1967; Hornstein & Weinberg 1981; Merchant 2000 Anderson 2008)
- In English, there are many strings with this shape:



  - "F" is a functional element: an auxiliary or preposition
  - "L" is a lexical element: a verb or a noun

Functional Words

- Some examples of Functional and Lexical Projections:



Functional Words

- In English, functional heads are often phonologically small.

- Many prepositions are pronounced as a single letter.
- Many auxiliaries are also pronounced in that way.

(25)	you	**sh**	travel		**t**	Bali		
	NP	T	V		P	NP		
(26)	I	**c**	take	**a**	cup	**a**	coffee	
	NP	T	V	D	NP	P	NP	

Functional Words

- 2 prepositions can be pronounced as single segments: t’ (to) and a (of)
- Many more auxiliaries show the same effect:

Form	Example	Orthography
sh’	**I sh’ go**	should
c’	**C’I get some?**	could
d’	**D’you already go?**	did
d’	**D’you wanna?**	do
‘d	**I’d go**	would
‘ll	**I’ll go**	will
‘s	**He’s here**	is
‘s	**He’s done it**	has
‘ve	**We’ve done it**	have
‘re	**You’re leaving?**	are
‘m	**I’m going to.**	am

Stranding

- Everything changes when we separate the sequence F-L.

- English has a process of “VP-ellipsis” which deletes the VP.
  - This construction has been extensively studied:
    (Hankamer 1978; Johnson 2001, 2009; Merchant 2013)
  - It also exists in Indonesian, with very similar properties (Fortin 2007)

(27) They would do it, and I would _____, too.
(do it)

Stranding

- VP-Ellipsis forces functional elements to appear on their own.
- In this context, many of them take different forms.

(28)			[T …	~~VP~~	, too]
They'd do	it,	and I	**would** / *I**'d**	_____	, too.
They sh' do	it,	and I	**should** / *I **sh'**	_____	, too.
They c' do	it,	and I	**could** / *I **c'**	_____	, too.
They're here,		and I	**am** / *I**'m**	_____	, too.

Stranding

- This is allomorphy, not regular phonology.
  - There are no identical alternations with similar words

(29)	I would	buy	wood	from there.
	I'd	buy	wood	from there
	*I'd	buy	'd	from there

- These alternations are similar to those with the other T:

(30) [WOULD] → 'd / ___ verb
→ would / stranded

Stranding

- The same kind of pattern can be seen with prepositions.
  - English allows prepositions to be stranded by movement.
  - When this happens…

[P NP]

(31) Somebody get me a cup **a** coffee.

[P _____]

(32) What do you want a cup **of** _____?

*What do you want a cup **a** _____?

Stranding

- We can summarize the changes in this system as follows.

Regular	Stranded	Regular	Stranded
sh'	should	**'s**	is
c'	could	**'s**	has
c'	can	**'ve**	have
d'	did	**'re**	are
d'	do	**'m**	am
'd	would	**t'**	to
'll	will	**a**	of

- The analysis of this pattern is a matter of contentious debate

(Selkirk 1995, Johnson 2001; Anderson 2008; Ito & Mester 2019)

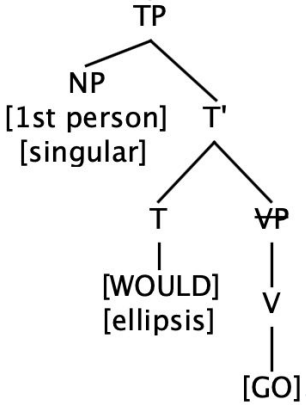
Stranding

- Some researchers argue that this is a syntactic effect:
  - Movement is a syntactic operation, and ellipsis is, too.
  - When these operations occur, they require a syntactic mark on the stranded functional head. (Merchant 2001)

- Syntactic accounts:
  - Allomorphy depends on the presence of this mark.

(33) [WOULD] → would / [ellipsis]
→ ‘d elsewhere

(34) He won’t go, but I would [+ellipsis].



Stranding

- Nevertheless: there is a good case for phonology here.
- The alternation is sensitive to overt phonological content:
  - (even though that correlates with a syntactic feature)

(28) They'd do it, and I **would** / *I'**d** __, too.
(32) What do you want a cup **of** / *a __?

- And: the alternation has a consistent phonological shape.
  - Functional heads are always longer when alone.

3.
Bahasa Mandar

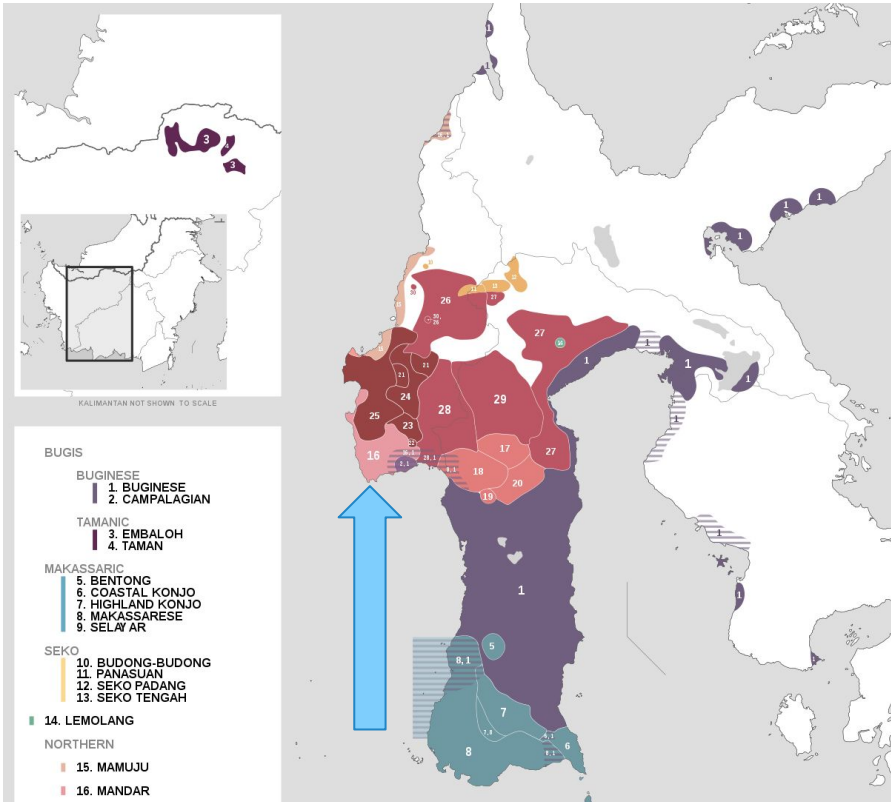
A Similar System

Bahasa Mandar

- Bahasa Mandar
  is a regional language
  of West Sulawesi Province.

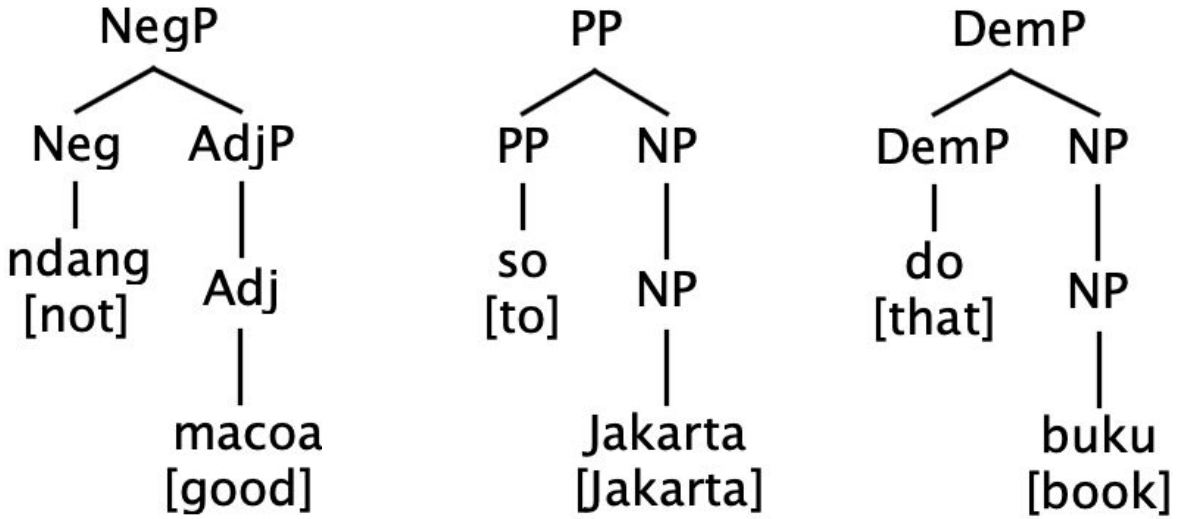
- Roughly 400.000 speakers
- Historical lingua franca

- Data on Bahasa Mandar:
  gathered with Jupri Talib.



Bahasa Mandar

- Bahasa Mandar shows similar structures to English.



Bahasa Mandar

- The functional elements in these structures are also small
- Before lexical items, they are usually one syllable long.

Auxiliary	Gloss	Preposition	Gloss	Demonstrative	Gloss
ndang	tidak	**de’**	ke atas	**de**	ini
rwa	pernah	**nong**	ke bawah	**do**	itu

Bahasa Mandar

- Like English, Bahasa Mandar has a process of VP-ellipsis.

(35) Usanga dionging ndangi rwa napikkiri fonologi.
Kupikir kemarin tidak pernah dia pikkirkan fonologi

(36) Jari tiwikke a' apa' **rua i** [_____]
Jadi terkejut aku karena pernah ia (memikirkan fonologi)

"I used to think he had never thought about phonology,
So now I'm shocked, because he has."

Bahasa Mandar

- VP-Ellipsis forces a similar pattern of allomorphy:

  When the negator is stranded, it gets longer.

(37) do ande **ndam** macoa o.
that food not good there.
"That food is not good."

(38) mau macoai de ande e,
Though good this food here

do ande **andiang** _____ o.
that food not there.

Bahasa Mandar

- The same pattern can be seen with preposition-stranding.
  - It is possible to strand prepositions in Bahasa Mandar,
  - And stranded prepositions are forced to expand.

(39) Bemmei **sung** basket-mu,
It fell out basket-your
`It fell out of your basket.'

(40) Apa nabemmei **su'ung** _____ **?**
What it fell out
`What did it fall out **of** / *a?'

Bahasa Mandar

- The same pattern can be seen with demonstratives.
  - It is possible to strand demonstratives in the language,
  - And stranded demonstratives are forced to expand.

(41) Bengangi **do** buku guru o.
give that book teacher there.
`Give that book to the teacher.'

(42) Bengangi **di'o** ____ guru o.
give that ____ teacher there.
`Give that to the teacher.'

Bahasa Mandar

- These alternations look just like the English pattern:
  - Functional elements are small before nouns/verbs
  - But when they are stranded, they are forced to expand.

- Some alternations involve regular phonology… (sung-su'ung)
- But others look like allomorphy.

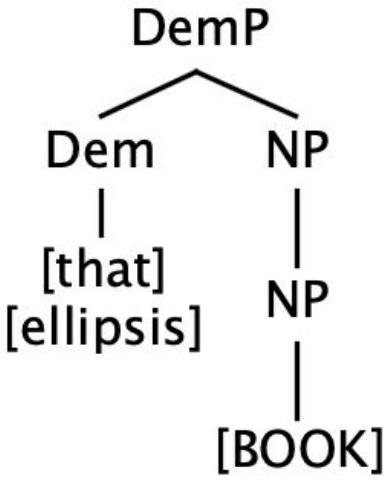
Normal	Stranded	Gloss
ndang	**andiang**	not
de	**di'e**	this
do	**di'o**	that

The Case for Phonology

- It seems possible to analyze this pattern in the syntax:
  - "The stranding operations require syntactic features."
  - "The allomorphy is conditioned by that."
- Concretely:

(41)	Bengangi	**do**	buku	guru o.	
	give	that	book	teacher	there.
(42)	Bengangi	**di'o**	____	guru o.	
	give	that	____	teacher	there.

(43) [that] → di'o / [ellipsis]
→ do elsewhere



The Case for Phonology

- But when we look further, we will find
  that a classical syntactic account is impossible.

- Our case will involve two separate arguments:
  - The allomorphic alternations in Mandar form part of a larger system within the phonology, so they must be localized to that system.

  - The alternations refer to information that is absent in the syntax, so there is no way to construct a syntactic account of the pattern.

- The result: this must be phonologically-driven allomorphy.

4.
A Conspiracy

Classical Evidence for Phonology

The Phonological Phrase

- Our starting point is an observation on phrasal phonology.
  - Sentences are organized into phonological constituent structures (Selkirk 1984; Nespor & Vogel 1986; Kubozono 1989, Elfner 2015)
  - Syntactic XPs usually form phonological phrases (φs; Selkirk 2009)

(44)

They	bought	rice
[TP	[VP	]
(φ	(φ	))

The Phonological Phrase

- Our starting point is an observation on phrasal phonology.

- Functional elements form phonological phrases with the nouns and verbs that follow them. (Selkirk 1995, Hall 1997)
  - They're not single words, since they can be separated
  - But they're clearly phonological units.

(44)

All a those people		might appeal		to the president		
[NP	]	[T'		[PP	]]	
(φ	)	(φ		(φ	))	

The Phonological Phrase

- This same pattern can be seen in Mandar.
  - Functional elements form phonological phrases with following Ns/Vs.
  - The right edge of the phonological phrase can also be seen in a tone.

(45)	Bengangi^{H}	**do**	buku^{H}	lo	guru-mu^{H}		o^{H}.
	give	that	book	to	teacher-your		there.
		[DemP	]	[PP		]	
		(φ	)	(φ		)	

The Phonological Phrase

- The stranding pattern is connected to this tone.
  - The sequence “dem + noun” carries the tone at its edge. This tone persists when the demonstrative is stranded.

(41)	Bengangi^{H}	**do**	buku^{H}	guru^{H}	o^{H}.
	give	that	book	teacher	there.
		(φ	)	(φ	)
(42)	Bengangi	**di’o^{H}**	____	guru^{H}	o.
	give	that	____	teacher	there.
		(φ	)	(φ	)

The Phonological Phrase

- The same tone persists when other elements are stranded.

(39) Bemmei **sung** basket-mu^{H}.
It fell out basket-your
`It fell out of your basket.'
(φ)

(40) Apa nabemmei **su'ung**^{H} _____ **?**
What it fell out
`What did it fall out **of** / *a?'
(φ)

The Phonological Phrase

- This allows us to update our generalization as below:

(46) The Stranding Generalization:
When functional heads are stranded,
they always form phonological phrases.

(cf. Itô & Mester 2019)

Baseline:	(φ	**Fnc**	L	)
Stranding:	(φ	**Fnc**	___	)

The Conspiracy

- The Stranding Generalization opens up a new hypothesis:

(47) The Prosodic Hypothesis:

The size alternation is conditioned by position in the φ.
When functional elements appear at the right edge of a phonological phrase, they must be disyllabic. Otherwise, they can be monosyllabic.

- Schematically:

Outside the right edge:	(φ	**σ**	N/V)
At the right edge:	(φ	**σσ**	___)

The Conspiracy

- The Prosodic Hypothesis suggests that this is all phonology.
  - The motive for allomorphic alternations is not a syntactic feature.
  - Rather: it is a phonological constraint

(48) The Positional Constraint: (φ … *σ)
"The final constituent in the φ must be at least disyllabic."

(Itô & Mester 1992; Downing 1998, Booij 1999, de Lacy 2001, Smith 2002, Prieto 2005, Elordieta 2008, McCarthy 2011)

The Conspiracy

- Prediction: this constraint should drive other patterns too.

(48) The Positional Constraint: (φ … *σ)
"The final constituent in the φ must be at least disyllabic."

- Specifically: we should see similar patterns at the right edges of all phonological phrases, not just those created in this way.

The Conspiracy

- Observation 1: there's a restriction on vowel coalescence.
  - Mandar: Noun-adjective sequences form one phonological phrase.
  - In this context: many nouns appear as monosyllabic.

(49)

bo kaiyang^{H}	**to** malutta^{H}	**sya** macoa^{H}
fish big	person lazy	salt good
`a big fish'	`a lazy person	`good salt'

  - When these nouns appear at the right edge of the φ, they expand.

(50)

bau^{H}	**tau**^{H}	**siya**^{H}

The Conspiracy

- These Ns show the same alternation as functional elements

(49)	**bo** kaiyang^{H}	**to** malutta^{H}	**sya** macoa^{H}
	fish big	person lazy	salt good
	`a big fish'	`a lazy person	`good salt'
(50)	**bau**^{H}	**tau**^{H}	**siya**^{H}

Outside the right edge:	(φ	**σ**	Adj)
At the right edge:	(φ	**σσ**	___)

The Conspiracy

- This alternation suggests a real phonological constraint:
  - Vowel sequences are generally reduced, when they can be.

(49)

bo kaiyang^{H}	**to** malutta^{H}	**sya** macoa^{H}
fish big	person lazy	salt good
`a big fish'	`a lazy person	`good salt'

  - However, the final word in the phonological phrase must be disyllabic.
  - If vowel reduction would put a monosyllabic word there, it is blocked.

(50)

bau^{H}	**tau**^{H}	**siya**^{H}

The Conspiracy

- Observation 2: the same pattern emerges in another place.
  - Question words generally appear at the front of the sentence.
  - In this context, they are always disyllabic and always form φs.

(51) **Apa**^{H} milloa^{H}?
what is ringing?

  - But: they can be protected from the right edge of the φ by adverbs.
  - In that context: they also become monosyllabic.

(52) **A** **rua**^{H} milloa^{H}
what still is ringing

The Conspiracy

- This alternation has the same exact shape:
  - Wh-words are monosyllabic if protected from the right edge of the φ

(52) **A** **rua**^{H} milloa^{H}
what still is ringing

  - However, the final word in the phonological phrase must be disyllabic.
  - If wh-words take that position, they are forced to show allomorphy.

(51) **Apa**^{H} milloa^{H}?
what is ringing?

The Conspiracy

- We have thus found another pattern of allomorphy that is driven by the same phonological constraint.

Outside the right edge:	(φ	**σ**	Adv)
At the right edge:	(φ	**σσ**	___)

- The inventory of wh-words:

Normal	Exposed	Gloss
a	**apa**	what
ne	**innai**	who
na	**inna**	which

The Conspiracy

- This kind of allomorphy must be handled in the phonology.
  - Phonological phrasing is absent in the syntax (Zwicky & Pullum 1986) … so it is not possible to characterize the context of alternation.
  - The best syntactic attempt:
    "Stranded functional heads (which bear a feature),
    "plus question words that are not followed by adverbs (????)"
  - Syllables are absent too, so we can't explain the shape of the pattern.

Short	Long	Gloss
a	**apa**	what
ne	**innai**	who
na	**inna**	which

Short	Long	Gloss
ndang	**andiang**	not
de	**di'e**	this
do	**di'o**	that

The Conspiracy

- Proposal: the choice is made in phonology.

- The syntax does not decide which allomorphs are selected
- Once the syntax ends, the phonology begins
  - It constructs phonological phrases,
  - looks at where functional elements appear,
  - and decisions about allomorphy are made here.

5.
An Alternative Repair

Classical Evidence for Phonology

The Suspension Effect

- This account makes a prediction about allomorphy:
  - as the choice of allomorph is handled in the phonology,
  - it might be possible for phonological factors to interfere.

- If the driving force of allomorph selection is this constraint:

(48) The Positional Constraint: (φ … *σ)
"The final constituent in the φ must be at least disyllabic."

- Then we may be able to keep short allomorphs in many contexts if this constraint can be satisfied in another way.

The Suspension Effect

- As it turns out, this seems roughly correct.
  - There is a context where functional heads are stranded…
  - But where they are able to retain their monosyllabic forms.
- When they are stranded before three-syllable nouns:

(42)	Bengangi	**di'o**	____	guru	o.
	give	that	____	teacher	there.
	`Give that to the teacher'				
(53)	Bengangi	**do**	____	guru-mu	o.
	give	that	____	teacher-your	there.
	`Give that to your teacher'				

The Suspension Effect

- The same pattern can be seen with prepositions.

(54) Tambusi **naung** ____ allo.
go down ____ sun
`The sun set.'

(55) Tambusi **nong** ____ allo-na.
go down ____ matahari-nya
`The sun set.'

The Suspension Effect

- It can also be seen with question words.

(56) **Innai** lamba?
who left?
`Who left?'

(57) **Ne** na-lamba?
who will-leave?
`Who will leave?

The Suspension Effect

- And also with regular nouns.

(58) Wannei **siya** peca'.
I added salt bubur
`I added salt to the bubur'

(59) Wannei **sya** waro'bo.
I added salt bubur jagung
`I added salt to the corn chowder

The Suspension Effect

- The generalization that emerges from this pattern:

(60) The Updated Generalization

Outside the right edge:	(φ	**σ**	Adv)
At the edge, before a disyllabic word:	(φ	**σσ**	___)
At the edge, before a trisyllabic word:	(φ	**σ**	___)

The Suspension Effect

- This means that there is no syntactic analysis of allomorphy.
  - Stranding operations may require syntactic features,
  - But allomorphy **cannot** be conditioned by those features.
- Concretely:

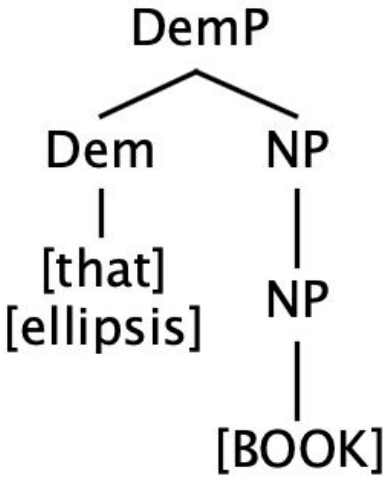
(42)

Bengangi	**di'o**	____	guru	o .
give	that	____	teacher	there.

(53)

Bengangi	**do**	____	guru-mu	o.
give	that	____	teacher-your	there.

(43) [that] → di'o / [ellipsis, sometimes]
→ do / [ellipsis, other times]



Phonological Movement

- Still: this pattern raises a huge mystery in the phonology.
- The driving force of allomorphy is this constraint:

(48) The Positional Constraint: (φ … *σ)
"The final constituent in the φ must be at least disyllabic."

- How can that be squared with this?

(60) The Updated Generalization

Outside the right edge:	(φ	**σ**	Adv)
At the edge, before a disyllabic word:	(φ	**σσ**	___)
At the edge, before a trisyllabic word:	(φ	**σ**	___)

Phonological Movement

- A solution falls into place when we look at the high tone.
- When words seem to be monosyllabic at the right edge, the tone that marks the right edge of the φ shifts right.

(58) Wannei^{H} **siya**^{H} peca'^{H}.
I added salt bubur
`I added salt to the bubur'

(59) Wannei^{H} **sya** wa^{H}ro'bo^{H}.
I added salt bubur jagung
`I added salt to the corn chowder

Phonological Movement

- This suggests a change in the position of the right edge.

(58) (φ)
Wannei^{H} **siya**^{H} peca'^{H}.
I added salt bubur
`I added salt to the bubur'

(φ)
(59) Wannei^{H} **sya** wa^{H}ro'bo^{H}.
I added salt bubur jagung
`I added salt to the corn chowder

Phonological Movement

- The same effect can be seen in all cases of “suspension”:

(54) (φ)

Tambusi^{H} **naung**^{H} allo^{H}.
go down sun
`The sun set.’

(55) (φ)

Tambusi^{H} **nong** al^{H}lo-na.
go down matahari-nya
`The sun set.’

Phonological Movement

- The same effect can be seen in all cases of “suspension”:

(42)

	(φ	)	
Bengangi^{H}	**di’o**^{H}	guru^{H}	o^{H}.
give	that	teacher	there.

`Give that to the teacher’

(53)

	(φ	)	
Bengangi^{H}	**do**	gu^{H}ru-mu^{H}	o^{H}.
give	that	teacher-your	there.

`Give that to your teacher’

Phonological Movement

- When we look at a pitch track, this process is easy to spot.

(61) (φ)

a mu^{H}pogau’^{H}?

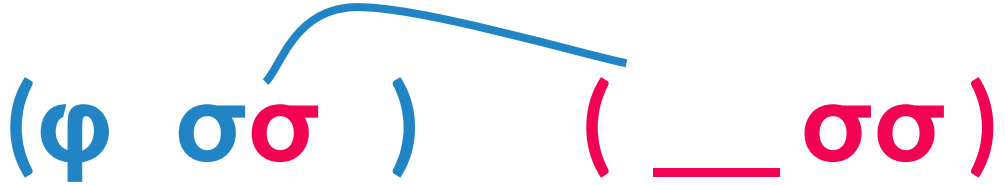
what are you doing?

a	mu	po	ɣa	uʔ
a	mupogau’			
what are you doing?				

Phonological Movement

- This suggests that our constraint is resolved in a new way:
  - A syllable is literally pulled across a phrase boundary
  - And placed within the preceding word.

(62) Syllable Movement



Phonological Movement

- In derivational terms, this means that the phonology builds phonological phrases and then discovers a problem:

(φ σ) …

- And then it makes a choice:
  - Resolve with allomorphy, or
  - Resolve with movement.

(φ σσ)(σσ)

(φ σσ)(_ σσ)

Phonological Movement

- The result is that these patterns of allomorph selection must be resolved in an extremely sophisticated phonology:
  - One which is able to force allomorph selection
  - And weigh that against other tools like movement
  - In a calculus that is aware of word-external phonology.
- This fits with the classical theory of phonology in Prince & Smolensky 1994- and falsifies much later work (Embick 2010)

6.

Conclusions

What have we learned?

The Takeaways

- The most immediate consequence of this analysis is that we have to think hard about the meaning of the term “word.”
- The classical perspective:
  - Words correspond to lexical heads in the syntax (Chomsky 1956; Di Sciullo & Williams 1987 et seq)
  - And the phonological word’s edges are aligned with those of the syntactic word (McCarthy & Prince 1993)
- Our results show that phonological words have a life of their own - and need not be so faithful to syntactic heads.

The Takeaways

- At a higher level, our results deliver a decisive argument that allomorph selection can be resolved in the phonology.
- In order to choose allomorphs for these six heads,

Short	Long	Gloss
a	**apa**	what
ne	**innai**	who
na	**inna**	which

Short	Long	Gloss
ndang	**andiang**	not
de	**di'e**	this
do	**di'o**	that

- It is not enough to reference the syntax: instead, we need to look at the pattern of phonological phrasing and the phonology of the following word.

The Takeaways

- This result suggests that we are on the right track when we think about a phonological analysis of the English pattern:
  - These alternations are likely also driven by the phonology: stranded functional elements form φs, and φs have to contain phonologically licit words

Regular	Stranded	Regular	Stranded
sh'	should	**'s**	is
c'	could	**'s**	has
c'	can	**'ve**	have
d'	did	**'re**	are
d'	do	**'m**	am
'd	would	**t'**	to
'll	will	**a**	of

The Takeaways

- Finally, we arrive at a natural confirmation of the value of:
  - Generative linguistic theory,
    - Which allows us to explain remarkably fine patterns in the phonology of Mandar, and connect those to a conceptually similar set of alternations in English,
  - And research on regional languages,
    - Which show intricate and revealing patterns
    - That could not be found without this kind of work.

Thank you!

Any questions?

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