

A preliminary archaeology of tone in Raja Ampat

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Contact and substrate in the languages of Wallacea

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1. Tone in Raja Ampat

Ma'ya phonology

Matbat phonology

Ambel phonology

2. Tonogenesis

Previous work

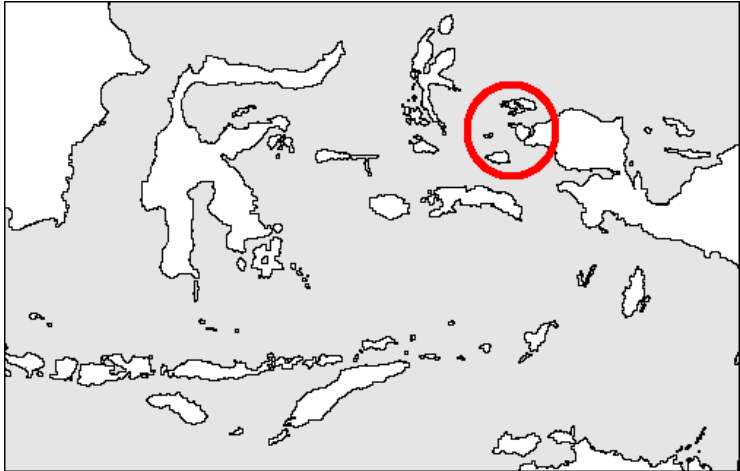
Comparative data

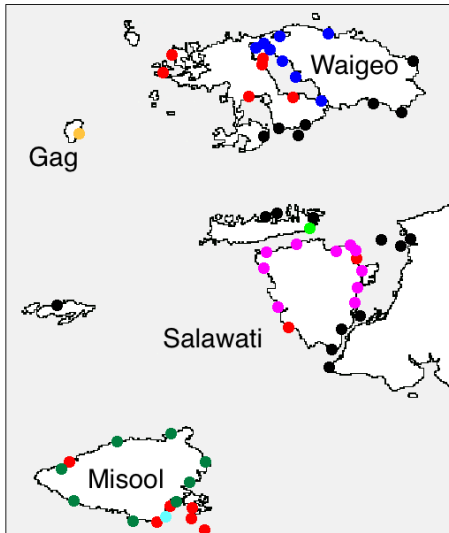
3. Discussion

Scenarios for tonogenesis

Implications: Timescale of tonogenesis

Implications: Nature of contact





Key:

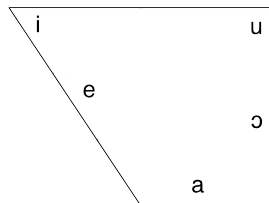
- Ma'ya
- Matbat
- Ambel
- Biga
- Bata
- Gebe
- Salawati
- languages
- Other

Based on Remijsen (2001:16)

Ma'ya (van der Leeden 1993; Remijsen 2001a, 2001b)

► Segmental phonology:

	bilabial	alveolar	velar	glottal
stops	p b	t d	k g	(?)
fricatives	f	s		
nasals	m	n		
liquids		l r		
semivowels		y	w	



Ma'ya (van der Leeden 1993; Remijsen 2001a, 2001b)

► Prosodic system:

Rise/Low	/ ¹² /	'sa ¹²	'sweep'
High	/ ³ /	'sa ³	'climb'
Fall	/'/	'sa	'one'

► Stress:

- Restricted to penultimate and final syllables
- Primary acoustic correlate is length
- Words with penultimate stress: Final syllable is toneless or High
- Words with final stress: Vowel of penultimate syllable is /a/; epenthetic IP-final /-o/

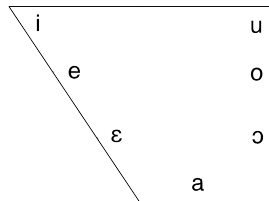
► Tone:

- Restricted to word-final syllables
- Domain of specification is the syllable
- Salawati Rise ~ Misool Low

Matbat (Remijsen 2007, 2010)

► Segmental phonology:

	bilabial	alveolar	velar
stops	p b	t d	k g
fricatives	f	s	
nasals	m	n	ŋ
liquids		l (r)	
semivowels		y	w



- Syllable structure: (C)V(C)
- Preference for monosyllables

Matbat (Remijsen 2007, 2010)

► Prosodic system:

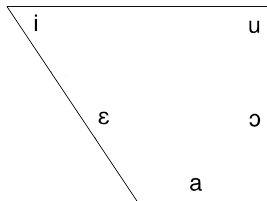
Low	/ ¹ /	na ¹ n 'betel'	
High	/ ³ /		de ³ 'house'
Extra-high Fall	/ ⁴¹ /		de ⁴¹ '1PL.I-go.down'
Low Fall	/ ²¹ /	na ²¹ n 'name'	
Low Rise	/ ¹² /	na ¹² n 'animal'	
Rise-Fall	/ ¹²¹ /		de ¹²¹ 'sick'

- Domain of specification is the syllable
- Toneless syllables are permitted
 - Tonal specification is obligatory in content words
- /²¹/ on final syllable → /-o/ IP-finally

Ambel (Arnold forthcoming)

► Segmental phonology:

	bilabial	alveolar	velar	glottal
stops	p b	t d	k g	
fricatives		s		h
nasals	m	n		
liquids		l r		
semivowels		y	w	



- Syllable structure: (C(S))V((G)C)
- Marginal preference for disyllables

Ambel (Arnold forthcoming)

► Prosodic system:

- Two-way, privative tonal contrast: /H/ vs. /Ø/
- Domain of specification is the syllable; TBU is the mora
- /H/ is culminative but not obligatory

/H/		/Ø/	
tún	'moon'	tun	'thorn'
súp	'bathe.1sg'	sup	'repeat.1sg'
y-ún	'1sg-pick.up'	y-un	'1sg-know'

Summary

	Ma'ya	Matbat	Ambel
No. of tonemes	2	6	1
Domain	σ	σ	σ
Obligatory?	N	Y	N
Culminative?	Y	N	Y
Epenthetic /-o/	Y	Y	N
Lexical stress?	Y	N	N

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Implications: Timescale of tonogenesis

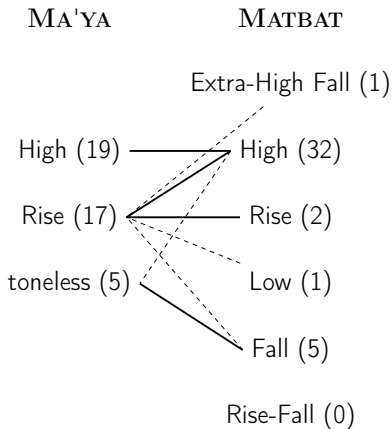
Implications: Nature of contact

- ▶ Spontaneous tonogenesis:
 - ▶ Kamholz (2014):
No obvious segmental predictors for Ma'ya or Matbat tone

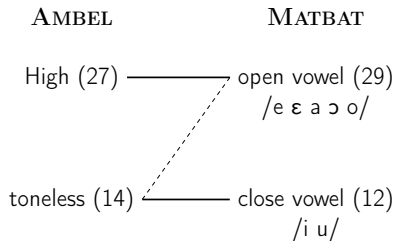
- ▶ Inheritance:
 - ▶ Kamholz (2014: 117):
Epenthetic /-o/ may have been inherited from a common ancestor to Ma'ya and Matbat

- ▶ Contact:
 - ▶ Kamholz (2014: 117), Remijsen (2001b: 102–104):
Tone developed in Ma'ya and Matbat as the result of contact with a tonal Papuan substrate

- ▶ Monosyllabic forms identified as cognate by Kamholz (2014) were compared to see whether any informative patterns emerge w.r.t the suprasegmental phonology
 - ▶ Ma'ya and Matbat: Evidence for tonal correspondences
 - ▶ Ambel: Tone correlates with height of vowels in Ma'ya and Matbat



Ma'ya		Matbat	
High	~	High	(19/41)
'bo ³ t		bo ³ t	'come'
'wa ³ l		-wa ³ l	'eight'
'fe ³ n		fe ³	'sea turtle'
Rise	~	High	(12/41)
'ba ¹² t		ba ³	'earth'
'wa ¹² k		wa ³ ŋ	'canoe'
'fo ³ n		fo ³ n	'full'
Rise	~	Rise	(2/41)
'ma ¹² t		ma ¹² t	'die'
'mo ¹² t		to ¹²	'much'
toneless	~	Fall	(4/41)
'-a		-a ²¹	'eat (tr.)'
'be(o)		be ²¹	'give'
'-un(o)		-u ²¹	'know'



Ambel	Matbat	
High	~ open vowel	(27/41)
mét	ma ³ t	'person'
sá	ha ³	'ascend'
láp	ya ³ p	'fire'
hín	fe ³ n	'sea turtle'
mát	ma ¹² t	'die'
byáw	bla ¹² w	'green/blue'
món	mo ¹ n	'heavy'
gám	ka ¹ m	'night'
mán	(wa ³ y)ma ²¹ n	'man'
toneless	~ close vowel	(12/41)
lim	li ³ m	'five'
hey	fi ³	'good'
ut	wu ³ t	'louse'
bu	bu ³	'white'
-un	-u ²¹ n	'know'
toneless	~ open vowel	(2/41)
gu	ga ¹ w	'hole'
bi	be ²¹	'give'

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► Tonogenesis in Ma'ya and Matbat:

	Pre-break up		Post-break up	
1.			Chance × 2	
2.			Chance × 1	→ Contact (AN)
3.			Contact (PAP) × 2	
4.			Contact (PAP) × 1	→ Contact (AN)
5.	Chance	→	Inheritance	
6.	Inheritance	→	Inheritance	
7.	Contact (PAP)	→	Inheritance	

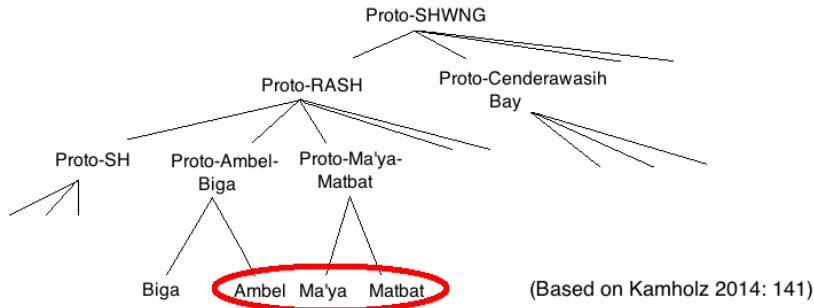
► Tone was innovated in a common ancestor of Ma'ya and Matbat, due to contact with a tonal Papuan substrate

- ▶ NB Thomason (2001: 5):
 - ▶ Requisites for establishing contact-induced change occurred in languages A and B:
 1. Establish contact between A and B occurred;
 2. Find feature(s) shared by both A and B;
 3. Prove that shared feature X was not present in pre-A;
 4. Prove that shared feature X was present in pre-B

- ▶ i.e. Contact as the origin for tone in Proto-Ma'ya-Matbat is **suspected**, but not **proven**

- ▶ Tonogenesis in Ambel:
 - ▶ Tonal splits on the basis of vowel height are very rare (Kingston 2011).
 - ▶ The f_0 of close vowels is intrinsically higher than open vowels. It is therefore plausible for close vowels to develop High tone.
 - ▶ In Ambel we see the opposite effect:
 - Historically open vowel > High
 - Historically close vowel > toneless
 - ▶ Data from and analysis of Ambel dialect Metsam required

- ▶ Tonogenesis in Ambel:
 - ▶ **Lack of tonal correspondences does not support the hypothesis that tone was inherited from a common ancestor of Ambel, Matbat, Ma'ya**
 - ▶ Spontaneous innovation? (NB segmental predictors)
 - ▶ ...encouraged by contact with tonal language (Ma'ya? Papuan?)



► **Contact with Papuan substrate occurred:**

1. **after break-up of most recent common ancestor of Ma'ya, Matbat, Ambel**
2. **before break-up of Ma'ya and Matbat**

- ▶ Trudgill (2010):
 - ▶ Additive change (e.g. clicks in Bantu lgs)
'stable, long-term co-territorial contact situations which involve childhood...bilingualism' (p.314)
 - ▶ Simplification (e.g. pigns, creoles)
'post-critical threshold non-native learning' (p.313)
- ▶ **Contact between Austronesian and non-Austronesian languages in Raja Ampat was long-term and stable**

► Summary:

- At least three (possibly more) Austronesian languages spoken in RA are tonal
- Suprasegmental correspondences between Ma'ya and Matbat suggest that tone was innovated in a common ancestor to these languages
 - The complexity of the Matbat system suggests this innovation may have been due to contact with a tonal Papuan substrate
- Lack of suprasegmental correspondences, but apparent segmental predictors suggest a separate origin for tone in Ambel
- Implications:
 - Common ancestor was in contact with a tonal Papuan substrate after Ma'ya and Matbat split from Ambel, but before Ma'ya and Matbat split
 - Additive change suggests this contact was long-term and stable

References I

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