

HALF-SYLLABLES IN SOUTHEAST ASIAN LANGUAGES

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Series

INTRODUCTION

- In this talk, I will...
- investigate the notion of the half-syllable (and implicitly the sesquisyllable) in two languages – Khmer and Bunong – and its use as a diagnostic feature of Southeast Asia as a whole.
- subject the half-syllable to phonetic analysis and show that it is different in the two languages, is not a coherent linguistic unit and is therefore far from being a shared feature of Southeast Asian languages.
- use these results as a springboard to address the issue of using language as a criterion for defining geographic areas more generally.

OUTLINE

- Southeast Asia as a linguistic area
- Linguistics background
 - Syllables
 - Speech
- Phonetic experiments
 - Khmer
 - Bunong
- Implications for half-syllables

LANGUAGES IN SOUTHEAST ASIA

- At least five different languages families
 - Mon-Khmer
 - Sino-Tibetan
 - Austronesian
 - Tai-Kadai
 - Hmong-Mien
- Over 1,000 different languages
- Remarkable internal consistency
 - vowel inventories
 - tone systems
 - minimal morphology
 - small word shapes
 - sesquisyllables

SOUTHEAST ASIA AS A REGION



Many languages of mainland SEA are more similar to languages of neighboring China and India than they are to languages of insular SEA.

A recent conference on mainland SEA languages featured talks on Tani (India) and languages of China spoken south of the Yangtze Basin.

EFFICACY OF LANGUAGE AS A BOUNDARY MARKER WRT SOUTHEAST ASIA

- Internal consistency of language within Southeast Asia
 - Mainland/Insular
- Border between Southeast Asia and other countries/regions
 - India and China
- Division between groups within Southeast Asia
 - Upland/Lowland

SYLLABLES

SYLLABLES: UNITS OF SPEECH TIMING

- 1 Syllable
 - rice
 - cō'm
- 2 Syllables
 - Asia
 - Cornell
- 3 Syllables
 - Washington
 - tomato
- And so on!

HALF-SYLLABLES

- 1 Syllable

- rice
- cɔ'm

- Sesquisyllable: One syllable preceded by a half-syllable

- σ **σ**

- 2 Syllables

- Asia
- Cornell

SESQUISYLLABLES

- Sounds not spelling!
- English (kind of)
 - about (vs. able)
 - because (vs. beaver)
- Vowel in half-syllable is reduced: [ə]
- RELEVANCE: Supposedly very common in (mainland) Southeast Asia languages

SESQUISYLLABLES IN SOUTHEAST ASIA

- Burmese [pə.lwè] ‘flute’
 - (Green 2005)
- Thai [sa.nùk] ‘fun’
 - (Bennett 1994)
- Kammu (Laos) [rə.háaŋ] ‘bamboo’
 - (Svantesson and Karlsson 2004)
- Moken (Burma, Thailand) [phə.la:] ‘husked rice’
 - (Pittayaporn 2005)
- Kuay (Thailand) [kə.thiim] ‘garlic’
 - (Preecha 1968)
- Vietnamese ☹

SPEECH AS ARTICULATION

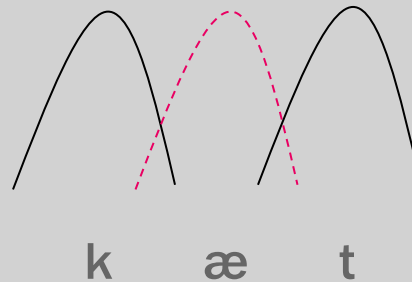
DISCRETE V. CONTINUOUS

- Speech as discrete units (consonants and vowels)

cat [kæt]



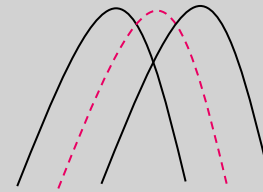
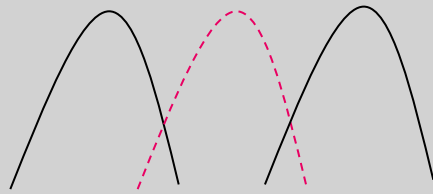
- Speech as gestures



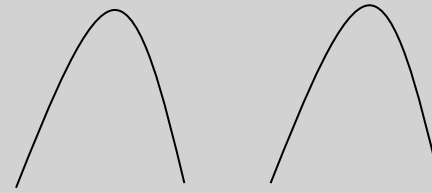
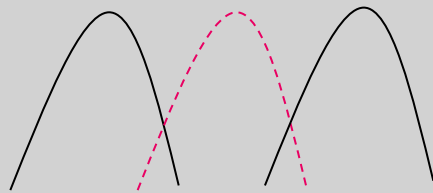
[Tongue Movement](#)

PROPERTIES OF SPEECH

■ Overlap

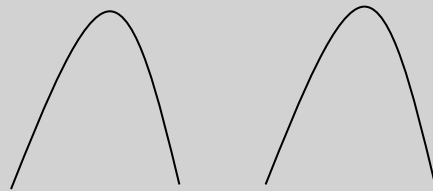


■ Underlap



UNDERLAP CONT.

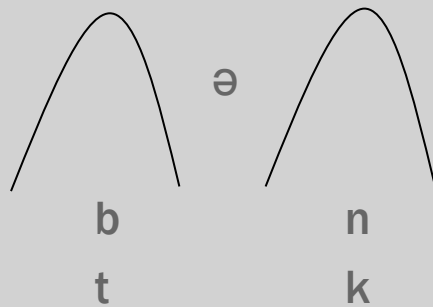
- What happens when gestures separate?



- Experiment:

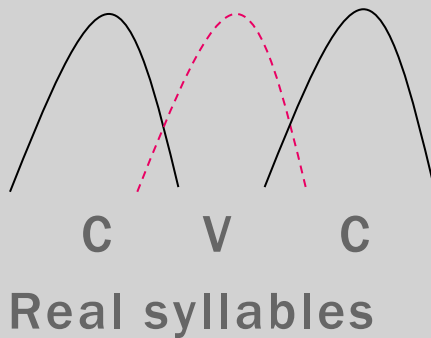
bnick

tkat

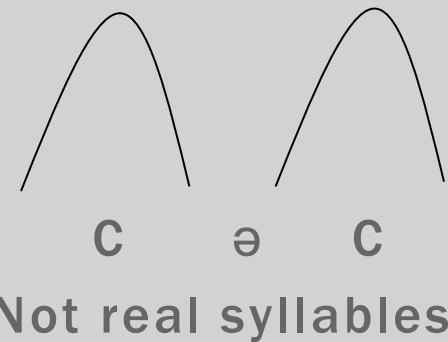


HYPOTHESIS

Some half-syllables:



Other half-syllables:



Disyllables
CVCVC

Sesquisyllables:

Monosyllables
CCVC

Half-syllables don't actually exist!

QUESTIONS

- Lots of things sound like [ə]. How can we tell them apart?

Stressed [ə]	Unstressed [ə]	Underlap
Longest	Shorter	Shortest
Neutral Position in the Mouth	Equal or Higher Position in the Mouth	Highest Position in the Mouth

- Ex. English: “abut” [ə.bət]
 - Cambodia abuts Vietnam.

EXPERIMENT

- Compared sesquisyllables in two Mon-Khmer languages

- Khmer

- 12 mil – 13 mil speakers
- ~65% literacy

- Bunong (Phnong, Mnong)

- 50,000 speakers
- Literacy: Low



KHMER

WHY KHMER?

- In addition to monosyllables, disyllables and longer words, Khmer has a wealth of clusters which might be half-syllables.

C1 \ C2	s	h	r	l	p	t	tʃ	k	m	n	ɲ	ŋ	ʔ	b	d
p	ps	ph	pr	pl		pt	ptʃ	pk		pn	pɲ	pŋ	pʔ		pd
t		th	tr	tl	tp			tk	tm	tn		tŋ	tʔ	tb	
tʃ		tʃh	tʃr	tʃl	tʃp			tʃk	tʃm	tʃn		tʃŋ	tʃʔ	tʃb	tʃd
k	ks	kh	kr	kl	kp	kt	ktʃ		km	kn	kɲ	kŋ			
s			sr	sl	sp	st		sk	sm	sn	sɲ	sŋ	sʔ	sb	sd
m	ms	mh	mr	ml		mt	mtʃ			mn	mɲ		mʔ		
l		lh			lp			lk	lm			lŋ	lʔ	lb	

KHMER

■ Participants

- 18 Khmer speakers, ages 18 – 44 ($\mu = 27$)
- Recorded at Royal University of Phnom Penh

■ Stimuli

- Potential sesquisyllables: 20
- Disyllables: 4
- Monosyllables: 13



METHODOLOGY

- Record three repetitions of supposed sesquisyllables in a frame sentence

- និយាយ ផ្កា ម្តង ទៀត.

- /nijij pka mdoŋ tiət/



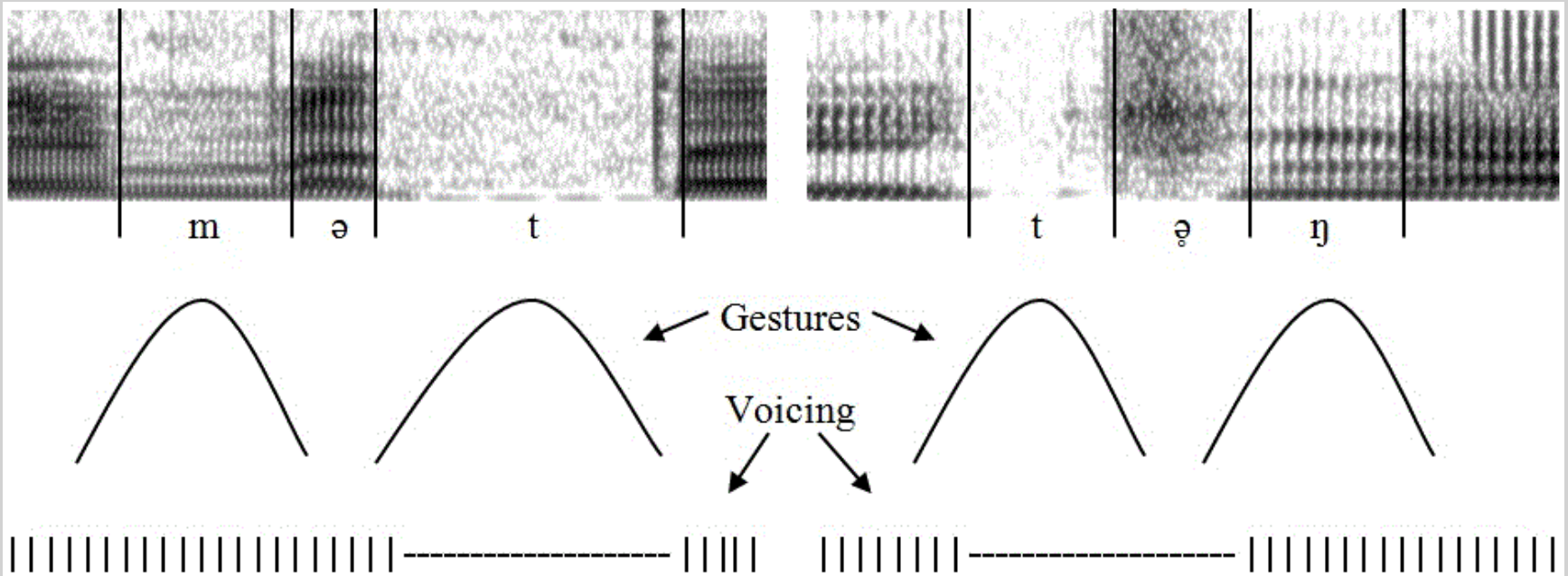
- និយាយ ស្ងៀម ម្តង ទៀត.

- /nijij sŋiəm mdoŋ tiət/



DISTRIBUTIONAL RESULTS

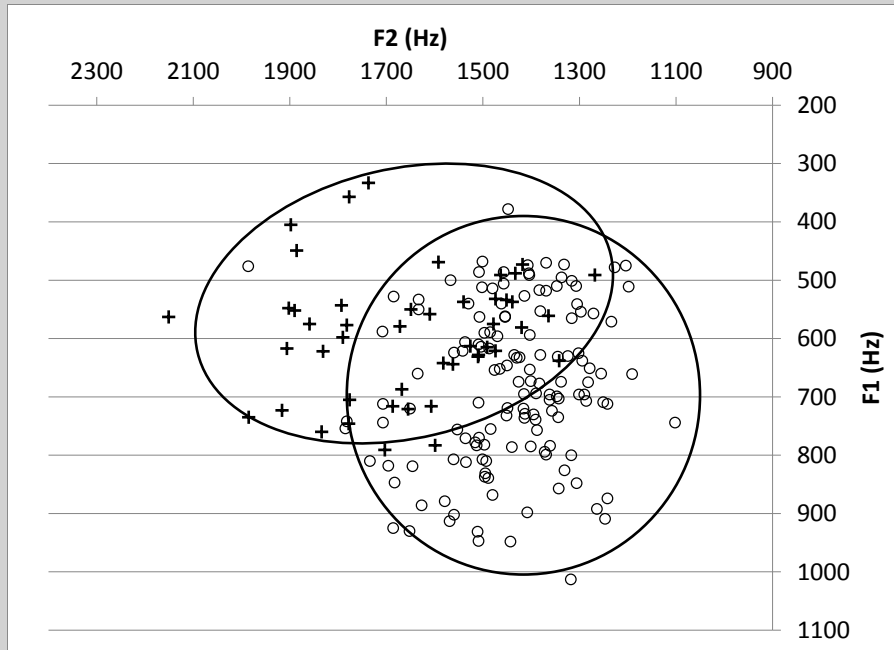
C1 is voiced ([m] or [l])	C1 is voiceless ([p] or [t])
Underlap in 93% of tokens	Underlap in 95% of tokens
Underlap is voiced 100% of the time	Underlap is voiceless 99% of the time



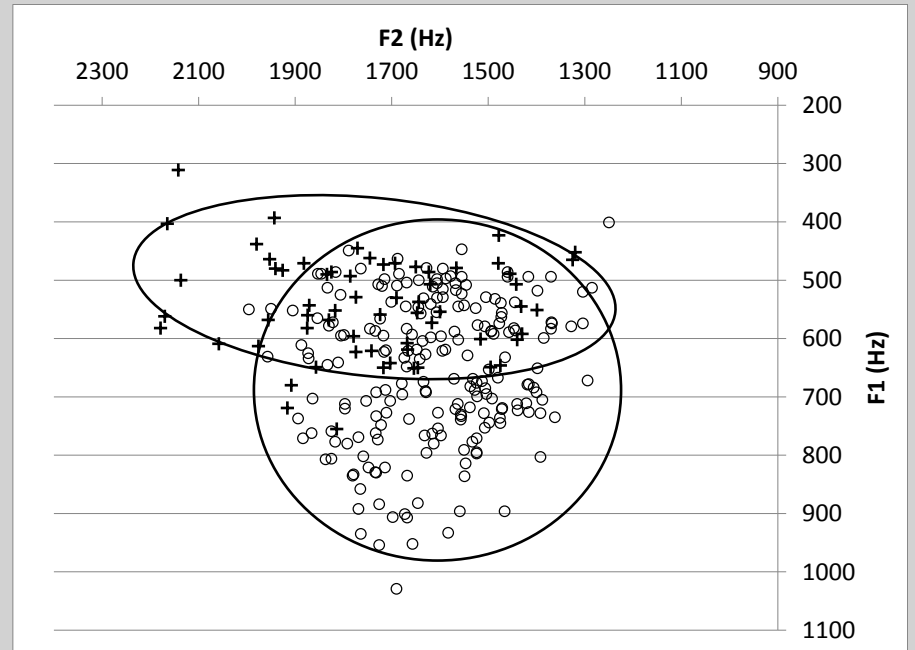
DURATION

- Durations of [ə] and [ə̃] are not significantly different.
- Duration of [ə] in clusters is significantly ($p < 0.0001$) shorter than [ə] in unstressed syllables
- [mteh]/[m_əteh] ‘pepper’ ម្លើស
- [m_ət. 'pot] ‘stretch one’s back’ មីព័ព័ត័

VOWEL POSITION



C1 - labial



C1 - alveolar

+ [ə] in sesquisyllables

o [ə] in disyllables and monosyllables

KHMER RESULTS SUMMARY

Stressed [ə]	Unstressed [ə]	Underlap
Longest	Shorter	Shortest
Neutral Position in the Mouth	Equal or Higher Position in the Mouth	Highest Position in the Mouth

- Half-syllables in Khmer are actually underlap.
- They do not have an associated gesture.
- They are not phonologically real.

“Sesquisyllables” in Khmer are monosyllables.

BUNONG

BUNONG BACKGROUND

- Not much previous work
 - Bequette (2008), Phaen et al. (2012), Phillips (1973 *et seq.*), Vogel and Filippi (2006)
- Not severely endangered but vulnerable
- Many recordings done at headquarters of International Cooperation Cambodia's Research Education and Development (READ) Project headquarters in Sen Monorom, Mondulkiri
- Some recordings done in Bunong village of Bou Sra









WHY BUNONG?

Along with monosyllables, Bunong is also claimed to have sesquisyllabic words but no longer words.

Monosyllables

[bri:]	‘forest’
[plaj]	‘fruit’
[cuaj]	‘offend’
[khʌt]	‘die’
[kuʔ]	‘sit’
[ko:ŋ]	‘uncle’

Sesquisyllables

[rə.la:w]	‘more than’
[lə.hat]	‘tightly fitting’
[kə.tojç]	‘hatchet’

METHODOLOGY

- Participants

- 12 Bunong speakers, ages 22 – 36 ($\mu = 28$)
- All men

- Stimuli

- Potential sesquisyllables: 12
- Monosyllables (CCVC): 7
- Monosyllable (CVC): 21

- Three repetitions in frame sentence:

- លាស នៅ កាលើ ‘above’

- /lah nau kalə/



- លាស នៅ ក្តីង

- /lah nau kləŋ/ ‘to miss’



DISTRIBUTIONAL RESULTS

- Bunong has far fewer consonant clusters than Khmer, but some underlap is still present
- Distribution of voicing is more variable

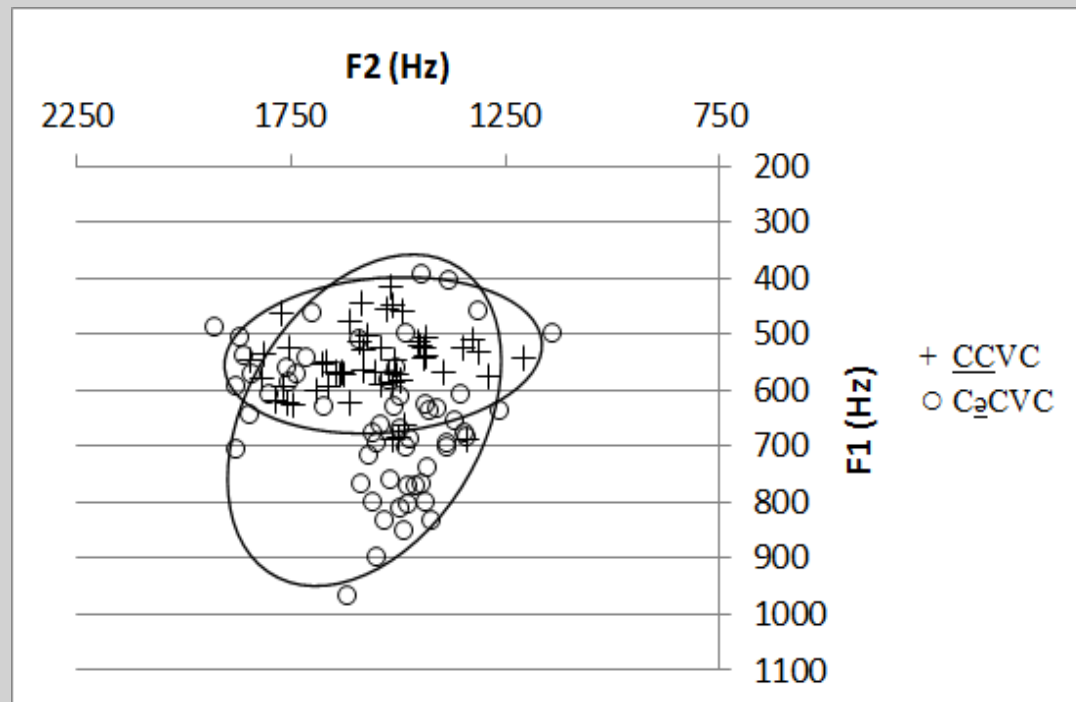
C1	C2	r	l
k			ə 98%
s		ə 80%	
m		ə 89%	
ŋ		ə 98%	ə 13%

DURATION

- Durations of [ə] and [ə̃] are not significantly different.
 - Duration of [ə] in clusters is significantly ($p < 0.0001$) shorter than [ə] in unstressed syllables
 - Duration of unstressed [ə] is significantly shorter than stressed [ə] ($p < 0.0001$).
- | | | |
|-------------------|--------------|-------|
| ■ [kləŋ]/[kə̃ləŋ] | ‘to miss’ | ក្តីង |
| ■ [kə̃nɑ:r] | ‘wing’ | កានាវ |
| ■ [kə̃l] | ‘big turtle’ | កីល |

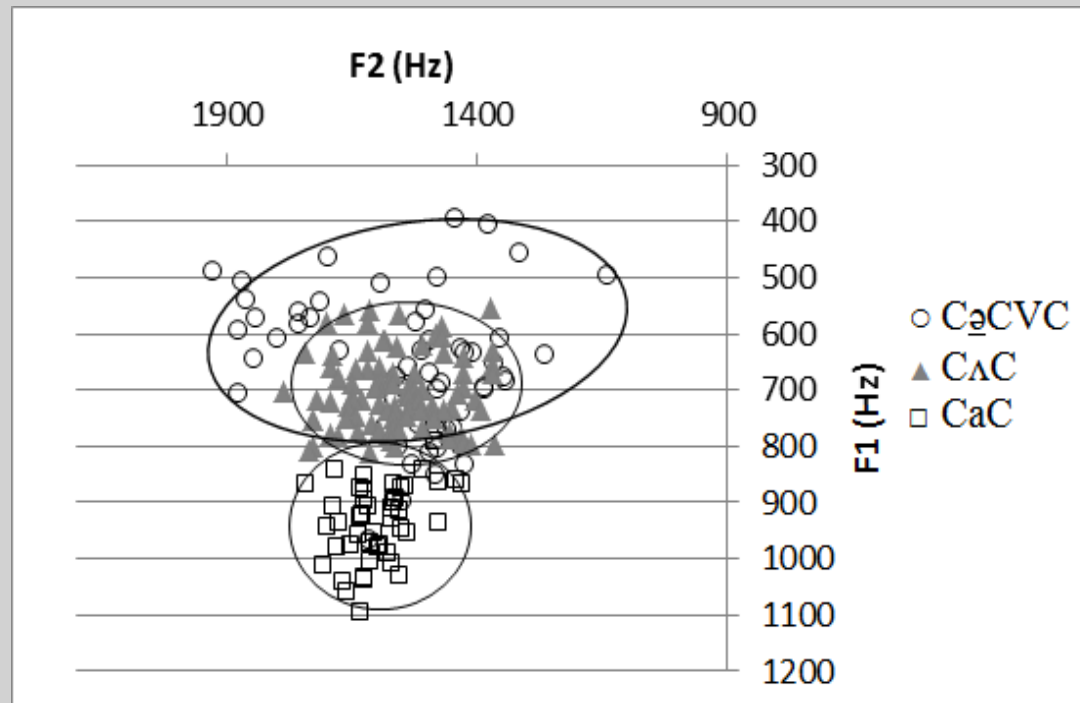
VOWEL POSITION

- Underlap “vowels” are higher in the mouth than half-syllable vowels ($p < 0.0001$).



VOWEL POSITION CONT.

- Unstressed schwa vowels (i.e. half-syllable vowels) are higher in the mouth than stressed schwa vowels.



BUNONG RESULTS SUMMARY

Stressed [ə]	Unstressed [ə]	Underlap
Longest	Shorter	Shortest
Neutral Position in the Mouth	Equal or Higher Position in the Mouth	Highest Position in the Mouth

- Half-syllables in Bunong are actually syllables.
- They have an associated gesture.
- They are phonologically real.

“Sesquisyllables” in Bunong are disyllables.

RESULTS AND IMPLICATIONS

COMPARISON OF RESULTS

Khmer

CCVC

Half-syllable is
underlap

Sesquisyllable is a
monosyllable

Bunong

Cv.CVC

Half-syllable is
a real syllable

Sesquisyllable is a
disyllable

VALIDITY OF THE SESQUISYLLABLE

- Too broad
 - Subsumes two different linguistic entities – monosyllables and disyllables – which are already well-studied in the linguistic literature
- Too narrow
 - Used as a defining characteristic of SEA, but not at all exclusive to SEA languages

Monosyllables with underlap	Disyllables with similar stress patterns
Georgian Polish Nuxalk (Salish) Tashlhiyt Berber	Hixkaryana Choctaw Chickasaw Cayuga

EFFICACY OF THE SESQUISYLLABLE

- Internal consistency of language within Southeast Asia
 - Mainland/Insular
 - ➔ Inconclusive; Need more data
- Border between Southeast Asia and other countries/regions
 - India and China
 - ➔ Maybe with India; probably not with southern China
- Division between groups within Southeast Asia
 - Upland/Lowland
 - ➔ No. Syllable type does not correlate with Zomia borders (Eg. Burmese)

EFFICACY OF LANGUAGE

- Is language useless as a boundary marker?
 - Probably not
- Are large scale generalizations useful?
 - Also probably not
- Since the sesquisyllable, which has long been considered one of the most salient defining properties of SEA languages, is a problematic concept, I suggest that more detail-oriented linguistic fieldwork is necessary to draw meaningful conclusions about the correlations between language and boundaries.

THANK YOU!