

Prosodic structure in Japanese
I. Background

- (1) Prosodic structure
- (a) Phonologists in the 1960s tried to explain phonological patterns in human language based on **segments** (consonants and vowels) and word/morpheme **boundaries** only
 - (b) This doesn't work — to properly state phonological generalizations, we need to recognize that segments are organized into larger phonological units, such as the mora or syllable
 - (c) These units are known collectively as **prosodic constituents**; the phonological organization of a language above the segmental level is called **prosodic structure**
- (2) Controversy concerning Japanese: Does it have syllables? (Is the syllable universal?)

II. The mora

- (3) The mora (μ) is a prosodic unit that plays a large role in Japanese
- What is some evidence that the mora is psychologically real in Japanese?
See the examples on the “Mora structure in Japanese” data set handout
- (4) Evidence from speech errors: The mora is a unit that can be substituted for or transposed with another mora

μ	μ	μ	μ	μ	μ	μ	μ	μ
/		/		/		/		/
da	n	ga	i	sa	i	ba	n	syo
	↓		↓					
	i		n					

‘court of impeachment’

μ	μ	μ	μ	μ	μ	μ	μ	μ
/		/	/		/	/		
ku	u	bo	mi	d	do	we	e	
	↓							
	b		↑					

‘aircraft carrier *Midway*’

- (5) Evidence from language games

μ	μ	μ	—>	μ	μ	μ	μ	μ	μ
/	/	/		/	/	/	/	/	/
te	ga	mi		te	be	ga	ba	mi	bi

μ	μ	μ	μ	—>	μ	μ	μ	μ	μ	μ	μ
/		/			/	/	/	/	/		/
ga	k	ko	o		ga	ba	tsu	bu	ko	bo	o

- To what extent are language games affected by orthography? (ㄟ = ㄟ??)

- (6) Bonus question for phonologists: Long and short vowels are phonologically contrastive in Japanese. What are some ways that V length might be stored in the mental lexicon?
- (7) **Template for building mora (μ) structure**
- (a) Moras dominate (i.e., contain) segments in phonological structure. All segments must be included in some mora in a well-formed surface representation.
- (b) Associate segments to moras as follows:
- i. Every instance of a vowel projects and associates to a μ (long vowels associate to two μ)
 - ii. Every instance of /N/ projects and associates to a μ
 - iii. Every /y/ to the left of a μ associates to that μ
 - iv. Every unassociated consonant to the left of a vowel or /y/ associates to the μ of the vowel or /y/
 - v. An unassociated consonant may project and associate to a mora if it is the first half of a long consonant (i.e., is identical to the following consonant)

III. The syllable

- (8) Can we make a case that syllables are necessary in Japanese?
- See the examples on the “More about mora structure” data set handout
- (9) **Template for building syllable (σ) structure**
- (a) Syllables dominate (i.e., contain) moras in phonological structure. All moras must be included in some syllable.
- (b) A possible syllable in Japanese must have the structure $\mu_1(\mu_2)$, where:
- μ_1 must be a (C)(y)V mora *i.e.*, must contain at least V
 - μ_2 is not a C(y)V mora *i.e.*, C is okay; V is okay; N is okay; but not C(y)V
- (10) Additional questions about syllable structure in Japanese
- (a) When there are two vowels in a row, our model allows both two light syllables and one heavy syllable to be formed — what actually happens?
- A number of factors appear to be relevant, including which vowels are involved and where the pitch accent is located
- (b) It appears that Japanese occasionally tolerates a syllable with *three* moras
- Loanwords: [toon] ‘tone’, [t̚een] ‘chain’
 - Complex words: [nihomppoi] ‘Japan-like’, [tootta] ‘pass-PAST’