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The Prosodic System of Japanese as a Subtype of Tone System: Evidence from Prinmi

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- The prosodic system of Japanese
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The prosodic system of Tokyo Japanese

Accent=H-L; mora: TBU

Accent	1-mora	2-mora	3-mora	4-mora
none	H	L-H	L-H-H	L-H-H-H
1	H	H-L	H-L-L	H-L-L-L
2		L-H	L-H-L	L-H-L-L
3			L-H-H	L-H-H-L
4				L-H-H-H
...				

The prosodic system of Kyoto-Osaka Jap.

Accent	2-mora	3-mora	4-mora	5-mora
none	H-H L-H	H-H-H L-L-H	H-H-H-H L-L-L-H	H-H-H-H-H L-L-L-L-H
1	H-L	H-L-L	H-L-L-L	H-L-L-L-L
2	L-HL	H-H-L L-H-L	H-H-L-L-L- H-L-L	H-H-L-L-L L-H-L-L-L
3		L-L-HL	H-H-H-L L-L-H-L	H-H-H-L-L L-L-H-L-L
4			H-H-H-H L-L-L-H	H-H-H-H-L L-L-L-H-L
...				

The problem: tone, accent, pitch-accent?

Pitch-accent (McCawley 1968)

Japanese

Tone (Clark 1986)

Special kind of tone:

Prelinked tone (Pulleyblank 1986)

Restricted tone (Hyman 2009)

Definition of (Free) Tone Languages

A language is a (free) **tone language**, if, and only if, all lexical words of the language (including loan words) can be classified into a system of pitch-based categories which can not be derived through any phonological rules and thus must be specified in the lexicon.

Crucial facts unaccounted

A greater dialectal difference in tone systems is seen between Tokyo (H only) and Kyoto-Osaka (H & LH).

Tone neutralization in citation form:

hi^H 'fire', hi^H 'day' (cf. hi^H wa^L 'fire TOPIC', hi^L wa^H 'day TOPIC')

ha^L na^H (wa^L) 'flower', ha^L na^H (wa^H) 'nose'

Sugiyama's (2008) perception tests on Tokyo Japanese:

- (a) final-accented & unaccented pairs uttered in isolation,
- (b) final-accented & unaccented pairs excised from clauses,
- (c) the pairs with a following particle excised from clauses.

None of 23 listeners could identify minimal pairs under conditions (a) or (b).

Background about Prinmi

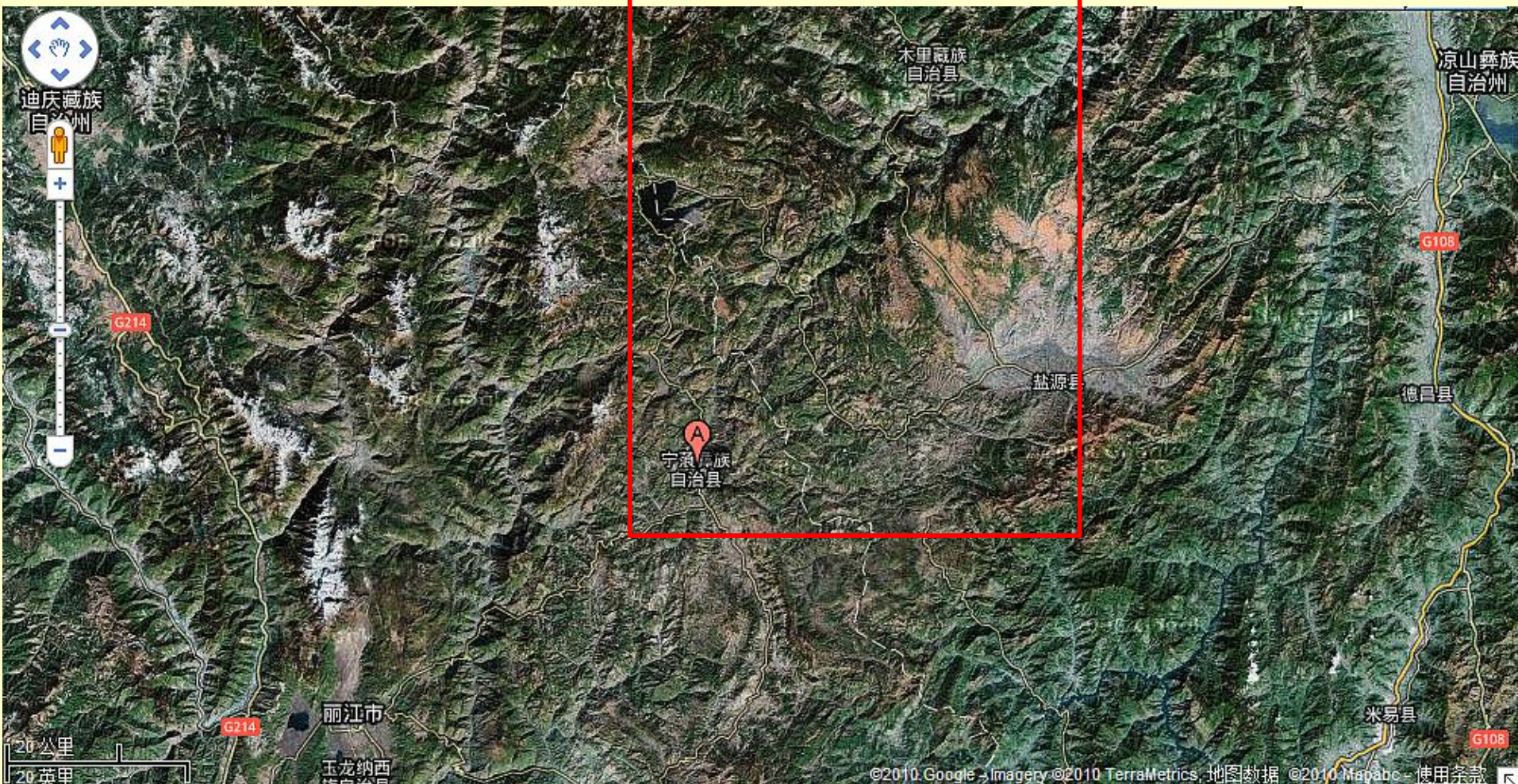
A Tibeto-Burman language;

Spoken by the *Pǔmǐ* (普米) nationality in Yunnan. In the Big Cool Mountain Prefecture, Sichuan speakers of Prinmi are classified into the Tibetan nationality;

Population of *Pǔmǐ* was 33,600 and that of ‘Tibetans’ in Sichuan totals 49,500 in 2000;

Fluent speakers of all Prinmi varieties in Yunnan are unlikely to exceed 20,000.





The prosodic system of Prinmi (Xinyingpan)

	1-syllable	2-syllable	3-syllable	4-syllable
1a	H^L	H-L	H-L-L	H-L-L-L
1b	H	H-H	H-H-L	H-H-L-L
2a	LH	L-H	L-H-L	L-H-L-L
2b		L-H	L-H-H	L-H-H-L
3a	(LH)	L-LH	L-L-H	L-L-H-L
3b			L-L-H	L-L-H-H
4			L-L-LH	L-L-L-H

Prinmi examples

Monosyllable	Disyllable	Trisyllable	Tetrasyllable
bi ^F 'honey'	bi ^H ge ^L 'as for honey'	bi ^H bi ^o bi ^o 'honeyroasted flour'	bi ^H bi ^o bi ^o ge ^L 'as for honeyroasted flour'
bi ^H 'sun'	bi ^H ge ^H 'as for sun'	bi ^H li ^H .u ^t 'sunflower stem'	bi ^H li ^H pɔ ^t tsi ^L 'sunflower'
tʃi ^h _i ^R 'dog'	tʃi ^h _i ^L mē ^H 'dog hair'	tʃi ^h _i ^L ni ^H dʒɛ ^L 'dog-nose category'	tʃi ^h _i ^L ni ^H dʒɛ ^L .ɔ ^t 'dog-nose categories'
	fɔ ^t pu ^H 'donkey'	fɔ ^t pu ^H ku ^h u ^H 'donkey head'	fɔ ^t pu ^H nɔ ^h le ^L 'donkey tail'
	dʒi ^o dʒi ^R 'buffalo'	dʒi ^o dʒi ^L ku ^h u ^H 'buffalo head'	dʒi ^o dʒi ^L nɔ ^h le ^L 'buffalo tail'
	.ɔ ^t tʃi ^R 'liquor'	.ɔ ^t tʃi ^L sɔ ^H 'clean liquor'	.ɔ ^t tʃi ^L sɔ ^H ge ^H 'as for clean liquor'
		ɔ ^t .ɔ ^t ni ^R 'to concentrate'	ɔ ^t .ɔ ^t ni ^L si ^H 'concentrated'

Melody-Tone: A working definition

A **melody-tone system** is one that generates tonal categories by varying the locus of a marked tone (usually H) on *all* possible positions within an underlying domain which is neither the word nor the syllable, irrespective of syllable weight.

Essential properties of Melody-Tone System

- Privative – only one marked tone in the system
- Culminative – maximumly 1 marked tone per domain
- Exhaustive distribution: covering all σ/μ in U domain
- Non-metrical – insensitive to syllable weight nor foot

The melody-tone system of Prinmi

Tone categories		Monosyllable	Disyllable	Trisyllable	Tetrasyllable
A	[1] [-spread]	H^L	H-L	H-L-L	H-L-L-L
B	[1] [+spread]	<u>H</u>	<u>H-H</u>	<u>H-H-L</u>	<u>H-H-L-L</u>
C	[2] [-spread]	LH	L-H	L-H-L	L-H-L-L
D	[2] [+spread]		L-H	L-<u>H-H</u>	L-<u>H-H-L</u>
E	[3] [-spread]		L-LH	L-L-H	L-L-H-L
F	[3] [+spread]			L-L-H	L-L-<u>H-H</u>
G	[4] [spread]			L-L-LH	L-L-L-H

The melody-tone system of Kyoto-Osaka

Tonal categories	2-mora	3-mora	4-mora	5-mora
A [<i>n</i> ; +spread]	H- H	H-H- H	H-H-H- H	H-H-H-H- H
B [<i>n</i> ; -spread]	L- H	L-L- H	L-L-L- H	L-L-L-L- H
C [1; spread]	H -L	H -L-L	H -L-L-L	H -L-L-L-L
D [2; +spread]		H- H -L	H- H -L-L	H- H -L-L-L
E [2; -spread]	L- H L	L- H -L	L- H -L-L	L- H -L-L-L
F [3; +spread]			H-H- H -L	H-H- H -L-L
G [3; -spread]		L-L- H L	L-L- H -L	L-L- H -L-L

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Explaining the crucial facts

How different is the prosodic system between Japanese dialects?

Tokyo and Kyoto-Osaka share the same kind of tone system, although differing in some details. So do all tonal dialects of Japanese (Ding 2006).

Why does the tonal neutralization occur in citation form?

Tonal neutralization of minimal pairs of words is due to the fewer number of TBU available in the word. When the domain of the word is extended to match the underlying pattern of the tonal category, the contrast is properly maintained.

Typology of Tone Systems

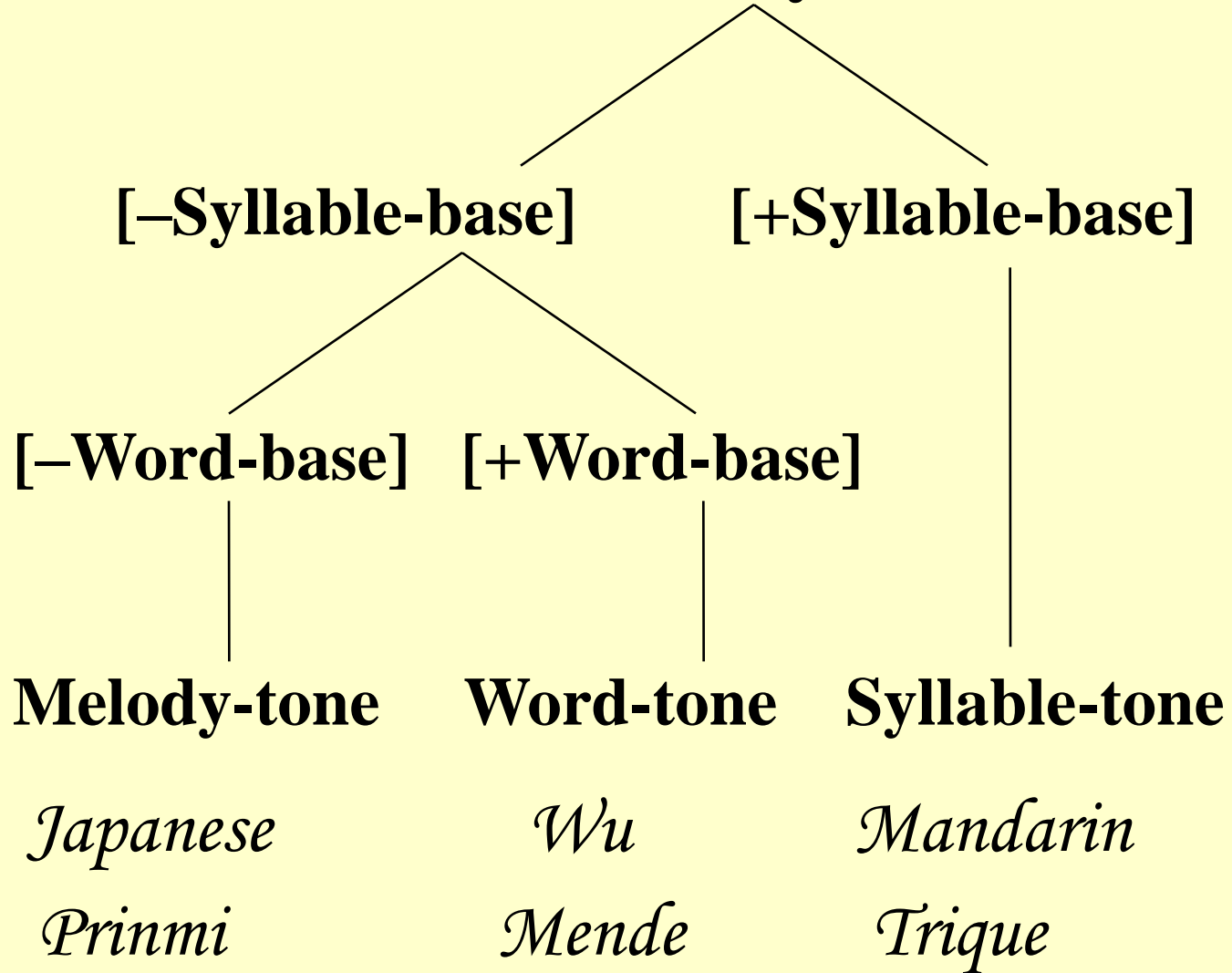
Defined in terms of domains, three types of tone system emerge:

Syllable-Tone: The syllable is taken as the basic domain for building tonal categories.

Word-Tone: The word is taken as the basic domain for creating tonal categories.

Melody-Tone: Tonal categories are built by varying the locus of H in an abstract domain.

Tonal Systems



Summary

- Japanese has an unusual type of tone system;
- The discovery of the melody-tone system in Prinmi helps to identify the Japanese tone system;
- The melody-tone system easily explains neutralization of minimal pairs in citation form;
- The melody-tone system also enhances our general understanding of the typology of tone systems in the world's languages.

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