

## **By No Means Marginal: Privative Tone in Zhuokeji Rgyalrong\***

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Zhuokeji Rgyalrong has long been identified as ‘atonal’ or ‘marginally tonal’. This paper presents a wealth of evidence from lexical distinctions and from a wide range of morphological constructions, establishing that Zhuokeji is by no means atonal, nor are tonal modifications restricted to a small range of uses. Instead, in addition to being employed to contrast lexical meanings, tones also serve as an essential device in the formation of all sorts of grammatical categories. This paper demonstrates that Zhuokeji Rgyalrong is a tone language that exhibits a privative system in which /HL/ contrasts with /Ø/. The basic domain of the tonal contrast is the word, and the surface phonological representation of every word is sensitive to the morphological contexts it is situated in. With respect to typology of tone systems, Zhuokeji tone bears both “Asian” and “African” tonal properties.

Key words: Rgyalrong, tone, privative tone, tonal polarity, Tibeto-Burman

### **1. Introduction**

When the Rgyalrong language is referred to in typological and historical studies, Zhuokeji Rgyalrong (henceforth Zhuokeji) is the most frequently cited representative speech form (see, for instance, Qu 2004, 1990, H. Sun et al. 2007:887-904, Ma 2003: 183-232). This is not only because it is among the first Rgyalrong languages<sup>1</sup> recorded

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<sup>1</sup> Rgyalrong is a Tibeto-Burman subgroup spoken in the northwestern part of Sichuan Province, China. Three major languages—Situ (eastern), Sidaba (northwestern), and Chabao/Japhug (northeastern) constitute Rgyalrong proper. Zhuokeji is a dialect of Situ Rgyalrong.

using a modern linguistic framework, but also because it has been a better described speech form since the middle of the twentieth century, after an extensive linguistic survey of the Rgyalrong area in the 1950s. Representative (and more frequently cited) studies on it include a reference grammar (X. Lin 1993), an MA thesis on its verbal morphology (Nagano 1984),<sup>2</sup> a sketch grammar (Nagano 2003), a preliminary overview (Qu 1984:69), and a few articles on Zhuokeji word-formation processes and morphology (Qu 1983, X. Lin 1983, Huang 1993). Among these previous linguists involved in the study of Zhuokeji, Qu (1984:69) and X. Lin (1993:746-750) noticed that a small number of lexical items and grammatical forms do contrast meanings or functions by tones. However, despite this, Zhuokeji is still referred to as ‘atonal’ or ‘marginally tonal’ in all the above-mentioned previous studies.

The present paper is going to argue against this common view, and propose instead that Zhuokeji is a tone language that exhibits a privative system in which /HL/ contrasts with /Ø/. Through a thorough analysis of tone patterns in lexicon and morphology, this paper will show that Zhuokeji tone is contrastive, with the surface phonological representation of every word being sensitive to the morphological contexts it is situated in. Tone is used to signal not only lexical, but also a wide range of grammatical meanings. In other words, Zhuokeji tone is far from marginal.

The remainder of the paper will start with a review of previous studies on Zhuokeji word prosody (§2). Then, based on a largely expanded set of related data, an essentially tonal analysis of Zhuokeji prosody is proposed in §3. A detailed discussion of lexical and grammatical functions of Zhuokeji tone is presented in §4. Section 5 compares the present analysis with the two previous (and rarely cited) analyses that have recourse to hybrid systems that invoke tone and pitch-accent. Section 6 summarizes the findings before discussing the typological status of Zhuokeji as a tone language.

## 2. Previous analyses of Zhuokeji word prosody

The linguistic significance of tone in Zhuokeji has gradually transitioned from being unnoticed to being highly recognized as linguists discover more and more related facts. While undertaking the earliest extensive studies on Zhuokeji, Nagano (1984:160, and later in 2003:470) dismisses tone as non-distinctive. Qu (1984) and X. Lin (1993: 744-755), on the other hand, observe some lexical and grammatical differences that are signaled by changes of tonal values. In particular, X. Lin (1993) mentions monosyllabic and disyllabic minimal pairs that contrast only in tone, as well as examples of verb

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<sup>2</sup> In this thesis and his sketch grammar (Nagano 2003), Nagano uses “Cogtse” to refer to Zhuokeji Rgyalrong.

forms that rely on tonal variation to complete present and past-tense inflections. These discoveries, however, did not prompt Qu or X. Lin to view Zhuokeji tone from a perspective that is drastically different from that of Nagano. Qu (1984:69) contends that Zhuokeji is atonal. X. Lin, in a rather reserved manner, proposes the tonal contrasts he discovers in Zhuokeji to have resulted from language contact with the neighboring Kham Tibetan or Sichuan Chinese. In particular, he suggests that it is unlikely for Zhuokeji to develop from being marginally tonal into a full-fledged tone language (1993:754).

A major contribution made by Hsieh in his unpublished 1999 master's thesis is that he provides the first systematic phonological account of Zhuokeji tonality. He characterizes the Zhuokeji tone system as a hybrid of word tone and “residual” pitch-accent. Grounded in tone patterns observed in basic vocabulary, as shown below in (1), Hsieh proposes that non-derived and uninflected words in Zhuokeji show a binary word-tone system that contrasts High and Low. The surface phonological representation of each word is predictable once the final syllable is specified with a tonal value underlyingly.

(1) Surface tone patterns of words on /H/ and /L/

		1-syllable	2-syllable	3-syllable	4-syllable
/H/	:	<b>H</b>	<b>L-H</b>	<b>L-H-H</b>	<b>L-H-H-L</b>
/L/	:	<b>HL</b>	<b>L-HL</b>	<b>L-H-HL</b>	<b>L-H-H-HL</b>

Meanwhile, based on tonal alternations observed in nominal compounds, absolutive prefixation, diminutive suffixation, and plural/dual suffixation,<sup>3</sup> Hsieh claims that “although most of the vocabulary is not distinguished by tones... tones do play an important role in morphological contexts” (Hsieh 1999:110).

In addition to the lexical tones, Hsieh suggests that Zhuokeji has a “residual” pitch-accent system that is culminative and is defined by a pitch drop. Words like *k<sup>h</sup>arʃalili* [L-H-H-L] ‘swallow (bird)’, therefore, can be analyzed as having an accent on the penultimate syllable since a pitch drop occurs from the penultimate to the final syllables.

(2) (Hsieh 1999:155)

\*  
|  
k<sup>h</sup>arʃalili

<sup>3</sup> Nominal plural and dual markers are actually enclitics rather than suffixes, as will be shown in §4.2.1.2.

Hsieh also discovers grammatically-conditioned pitch-accent placement in the vocative case of nouns (marked by a penultimate accent), as well as in the Indirect Evidential<sup>4</sup> verb forms (marked by an initial accent).

Although Hsieh's analysis is able to account for most of the surface tone patterns he observed, some analytical inconsistencies have been detected in the system he proposes. For one, Hsieh claims that the tonal contrast between /H/ and /HL/ is restricted to underived and non-inflected words. However, later in the same study, he documents examples of what he terms "High-toned" patterns on an array of deverbal nouns (see (3)), which, of course, are by no means underived.

(3) Deverbal nouns (Hsieh 1999:160)

Verb Stem		Gloss	Deverbal Noun		Gloss
-pkôr <sup>2</sup>	[HL]	'carry on back'	sa-pkór	[L-H]	'belt for carrying on back'
-mp <sup>h</sup> âr	[HL]	'sell'	sa-mp <sup>h</sup> úr	[L-H]	'marketplace'
prêt	[HL]	'break'	sa-prát	[L-H]	'breaking tool'

The other inconsistency occurs when High-toned words of four or more syllables are examined. For example, in introducing his word tone system, Hsieh analyzes the tetrasyllabic word *k<sup>h</sup>arjalili* [L-H-H-L] 'swallow (bird)' as a High-toned word which gets a Low on the final syllable because words of four syllables or longer cannot have a High tone at the end of a prosodic word. Nonetheless, the same word (i.e. *k<sup>h</sup>arjalili* [L-H-H-L] 'swallow (bird)') is also characterized as a prosodic word carrying penultimate accent (as already shown above in (2)). Such inconsistencies suggest that 1) with respect to tonal behaviors, the distinction between lexicon and grammar is not easy to maintain; 2) treating tone and pitch-accent as two parallel systems for Zhuokeji can be problematic, as these two systems seem to interact with each other.

Y. Lin (2000, 2003) avoids the aforementioned problems by proposing an analysis in which pitch accent interplays with tone on both lexical and grammatical levels. Y. Lin (2000, 2003) proposes that every word in Zhuokeji is accented; non-final accent is realized with a level tone, but a final accent can be associated with either a Level or a Falling. This hybrid system, characterized by a binary tone contrast on the accented final syllable, as well as morphologically and phonologically determined accent-placement

<sup>4</sup> The Indirect Evidential verb form is inappropriately termed "Indirective Evidential" in Hsieh (Hsieh 1999:156). See §4.2.3.2 for more details about the Indirect Evidential verb form in Zhuokeji.

<sup>5</sup> The tonal notations employed in Hsieh (1999) are:

ô {H,L} (Falling tone)      ó {H} (High tone)

rules, permeate all the lexical and grammatical categories in Zhuokeji. It is able to hold up against all the tonal phenomena observed in this language without giving rise to any analytical or descriptive inconsistencies.

The account for Zhuokeji word prosody proposed in the current paper, however, is essentially distinct from these previous analyses. I shall first present the new phonological analysis in §3, discuss the functions of Zhuokeji tone in §4, then compare the present analysis to the two hybrid systems in §5.

### 3. A privative interpretation of Zhuokeji tone

I begin this section with an overview of the general tonology of Zhuokeji. This language lacks a length or syllable weight distinction, and the notion of mora is not relevant to tone behavior. The tone-bearing unit in Zhuokeji, therefore, is the syllable.<sup>6</sup> Following are the attested surface tonal sequences in the Zhuokeji word. The patterns in (4a) and (4b) are realizations of Surface Tone-Pattern 1, as will be examined in §3.1. Patterns in (4c) are realizations of Surface Tone-Pattern 2, and will be discussed in §3.2. The surface patterns in (4d-e) are observed in the Indirect Evidential verb form (analyzed later in §4.2.3.2).

#### (4) Zhuokeji tone patterns

	H: High Level		HL: Falling	L: Low Level	
	1-syllable	2-syllable	3-syllable	4-syllable	5-syllable
a.	<b>H</b>	<b>L-H</b>	<b>L-H-H</b>	<b>L-H-H-L</b>	<b>L-H-H-H-L</b>
b.	<b>HL</b>	<b>L-HL</b>	<b>L-H-HL</b>	<b>L-H-H-HL</b>	<b>L-H-H-H-HL</b>
c.	<b>L</b>	<b>H-L</b>	<b>L-H-L</b>	<b>L-H-H-L</b>	<b>L-H-H-H-L</b>
d.			<b>H-H-L</b>	<b>H-H-L-L</b>	<b>H-H-L-L-L</b>
e.			<b>H-L-L</b>	<b>H-L-L-L</b>	<b>H-L-L-L-L</b>

The surface restrictions of the tone patterns are summarized below in (5).

#### (5) Surface restrictions observed for the tone patterns:

- a. Monosyllabic words can occur with H, L, or HL.
- b. HL only occurs on the rightmost edge.

<sup>6</sup> I follow Gussenhoven (2004:29) in defining the *tone-bearing unit* as “the element in the segmental tier to which tone associates”. The “tone” here is not restricted to the underlyingly determined tone. It can also be assigned through phonological derivation. See Evans (2009a: 215) for a brief review of different ways to define *tone-bearing unit* in related literature.

- c. H can occur at initial, medial, and final positions.
- d. On prosodic words of four or more syllables, H never occurs on the rightmost edge.
- e. L only occurs on the edge, but a sequence of Ls on the rightmost edge is allowed (as in 4d-e).
- f. There is no sequence \*H-L-H or \*H-L-L-H; that is, a word does not have more than one peak.

As shown in the monosyllabic words in (4), the surface tone patterns oppose three tones: [H], [HL], and [L]. Throughout this section I shall demonstrate that Zhuokeji word prosody is an underlyingly privative system in which /HL/ contrasts with /Ø/ (zero). As illustrated in (6), on the phonetic level Zhuokeji has three output tones, but underlyingly only /HL/ has to be specified. The surface [H] is introduced primarily by metrical rules, and [L] is assigned by phonetic implementation.

- (6) Phonetic and phonological oppositions in Zhuokeji tone systems (as of monosyllabic words):

**Phonetic opposition**

[H] vs. [L] vs. [HL]

**Phonological opposition**

/Ø/ vs. /HL/

In Zhuokeji, every prosodic word is either toneless or falling-toned, and every word has only one tone value (/Ø/ or /HL/). That is to say, Zhuokeji exhibits a “word tone” system. In languages that exhibit a word tone system, the word is the domain over the tone. Once the tonal value of a word is determined underlyingly, the word surfaces with fixed and predictable tone patterns that are derived in lexical phonology. Falling-toned words, with /HL/ assigned to the rightmost edge, surface with only Surface Tone-Pattern 1 irrespective of the contexts in which they occur. Toneless words, on the other hand, surface with either Surface Tone-Pattern 1 or Surface Tone-Pattern 2 depending on the morphological environments they are situated in.

In the remainder of this section, I shall first account for how Zhuokeji toneless and falling-toned words obtain Surface Tone-Pattern 1 (§3.1). Then, the tonal rules involved in the derivation of Surface Tone-Pattern 2 will be introduced in §3.2.

### 3.1 Surface Tone-Pattern 1

Examples of Surface Tone-Pattern 1 on words of one to four syllables are provided in (7). In Zhuokeji a toneless word surfaces with Tone-Pattern 1 when it is either a noun (including deverbal nouns) or a non-finite verb in the citation form (See (7a)). On the

other hand, a falling-toned word surfaces with Tone-Pattern 1 in all morphological contexts but the Indirect Evidential verb form (See the surface patterns in (7b)):

(7) Zhuokeji Surface Tone-Pattern 1 and examples

	Monosyllabic	Disyllabic	Trisyllabic	Tetrasyllabic
<b>a. H</b>	<b>L-H</b>	<b>L-H-H</b>	<b>L-H-H-L</b>	
(Nouns)				
ʒo ‘curd’	ta-ro ‘leader’	ta-me-ndzo ‘toe’	a-bu-ru-ru ‘snail’	
(Verbs in citation)				
— <sup>7</sup>	ka-rjap ‘to stand’	ka-wa-mot ‘to blow (tr.)’	kə-nə-ŋk <sup>h</sup> səŋk <sup>h</sup> sət ‘to smell (tr.)’	
(Deverbal nominalized nouns)				
— <sup>8</sup>	sa-rjap ‘standing place’	sa-wa-mot ‘blowing tool’	sə-nə-ŋk <sup>h</sup> səŋk <sup>h</sup> sət ‘smelling tool’	
<b>b. HL</b>	<b>L-HL</b>	<b>L-H-HL</b>	<b>L-H-H-HL</b>	
(Nouns)				
ca ‘musk deer’	ta-ro ‘chest (body part)’	tə-po-prəm ‘large intestine’	ŋgo-mpo-k <sup>h</sup> a-ŋna ‘(a kind of) spider’	
(Verbs in citation)				
—	kə-mp <sup>h</sup> ər ‘to wrap’	ka-nə-na ‘to rest’	ka-nə-mcə-rə ‘to watch, to read’	
(Deverbal nominalized nouns)				
—	sə-mp <sup>h</sup> ər ‘wrapping place/tool’	sa-nə-na ‘resting place’	sa-nə-mcə-rə ‘reading place/tool’	
(Inflected verbs)				
ŋjir ‘(s/he) will change’	to-rjap ‘(s/he) stood up’	to-wa-mot ‘(s/he) blew (it)’	to-nə-ŋk <sup>h</sup> sər-ŋk <sup>h</sup> sər ‘(s/he) smelt it’	
(Non-Past)	(Perfective)	(Perfective)	(Perfective)	
(Vocative nouns)				
—	kra-ŋes ‘Krashis (Person Name)’	kra-ŋi-smon ‘Krashismon (Person Name)’	mts <sup>h</sup> o-mo-scit ‘Tshomoscit (Person Name)’	

<sup>7</sup> Verbs in the citation form are prefixed with the nominalizers *ka-* or *kə-*, so they must have at least two syllables. For detailed discussions of the distinction between *ka-* and *kə-*, see J. Sun (2006) and J. Sun & Lin (2007).

<sup>8</sup> Deverbal nouns are formed with an oblique nominalizer *sa-~sə-* plus verb stem, and are thus minimally disyllabic.

Note that the number of tonal sequences does not increase with the number of syllables. This indicates that once a word is assigned as toneless or falling-toned underlyingly, its surface tone pattern is derivable using a set of tone rules that specify directions of foot parsing, foot structure, and tone association. The prominence of the foot head is realized as a high tone, while the non-head position receives either an H to avoid multiple peaks within a single word, or an L by default.

Taking trisyllabic patterns for example, five rules are required to derive the surface tone patterns for falling-toned words and toneless nouns and verbs in the citation form. First, the word is parsed into feet. Foot parsing in Zhuokeji is bidirectional. Quantity-insensitive trochaic and iambic feet are assigned non-iteratively at the left (iambic) and right (trochaic) edges. In addition, this language allows non-initial degenerate feet. Each foot head is then associated to an H. Finally, Ls are inserted on toneless syllables. The rules are stated in (8)-(12).

- (8) **Ft Parsing (L, iambic):** Parse a word from the left edge by a binary, iambic foot.
- (9) **Ft Parsing (R, trochaic):** Parse a word from the right edge by a binary, trochaic foot.
- (10) **Degenerate Ft:** A remaining free single syllable forms monosyllabic foot if it is not word-initial.
- (11) **Obligatory H:** Each foot head is associated to an H.
- (12) **Default L:** Insert L onto toneless syllables.

To derive Surface Tone-Pattern 1, the rule of iambic footing is applied prior to the rule of trochaic footing. The rules should thus be applied in the following order:

- (13) Rule Ordering in Tone-Pattern 1:  
 Ft Parsing (L, iambic) (8) > Ft Parsing (R, trochaic) (9) > Degenerate Ft (10)  
 > Obligatory H (11) > Default L (12)

Consider the derivations in (14). Note that lexically only the falling-toned word is associated to a tone (/HL/) on the rightmost syllable.



(14)	‘flail’ tamərdam /Ø/	‘shoulder pole’ samarpak /HL/
Lexicon	tamərdam	<div style="text-align: center;"> H L  \ /  samarpak </div>
a. Ft Parsing (L, iambic)	( <b><u>tamə</u></b> )rdam	<div style="text-align: center;"> H L  \ /  (<b><u>sama</u></b>)rpak </div>
b. Ft Parsing (R, trochaic)	N/A	N/A
c. Degenerate Ft	( <b><u>tamə</u></b> )( <b><u>rdam</u></b> )	<div style="text-align: center;"> H L  \ /  (<b><u>sama</u></b>)(<b><u>rpak</u></b>) </div>
d. Obligatory H	<div style="text-align: center;"> H    H          (<b><u>tamə</u></b>)(<b><u>rdam</u></b>) </div>	<div style="text-align: center;"> H    H L       \ /  (<b><u>sama</u></b>)(<b><u>rpak</u></b>) </div>
e. Default L	<div style="text-align: center;"> L H H         <b>tamərdam</b> </div>	<div style="text-align: center;"> L H H L      \ /  <b>samarpak</b> </div>
Surface	[L-H-H]	[L-H-HL]

Words of four or more syllables show an important tonal property that H never occurs on the rightmost edge. I assume this is because tetrasyllabic or longer words provide enough space to manifest the effect of both foot-parsing rules (8)–(9). Similar coexisting and competing stress rules are also observed in Stoney Dakota. The language assigns two stresses on a prosodic word, one on the initial or second syllable, and the other on the penultimate or final syllable. Only on words of four or more syllables can the stress rules fully apply (Shaw 1985:14-15).<sup>9</sup>

Consider the derivation of the Zhuokeji verbs ‘to cause to have dinner’ (/Ø/) and ‘to have lunch’ (/HL/).

<sup>9</sup> I am grateful to Matthew Gordon for bringing this work to my attention.

(15)	‘to cause to have dinner’ kasənapri /Ø/	‘to have lunch’ kənəsaksə/HL/
Lexicon	kasənapri	<div style="text-align: center;"> H L  \ /  kənəsaksə </div>
a. Ft Parsing (L, iambic)	( <b>kasə</b> )napri	<div style="text-align: center;"> H L  \ /  (<b>kənə</b>)saksə </div>
b. Ft Parsing (R, trochaic)	(kasə)( <b>napri</b> )	<div style="text-align: center;"> H L  \ /  (kənə)(<b>saksə</b>) </div>
c. Degenerate Ft	N/A	N/A
d. Obligatory H	<div style="text-align: center;"> H H       (kasə)(<b>napri</b>) </div>	<div style="text-align: center;"> H H H L         (kənə)(<b>saksə</b>) </div>
e. Default L	<div style="text-align: center;"> L H H L           kasənapri </div>	<div style="text-align: center;"> L H H H L           kənəsaksə </div>
Surface	[L-H-H-L]	[L-H-H-HL]

The other tonal property observed is that Hs occur sequentially. There is no such sequence as \*H-L-H. For example, the pentasyllabic word *kəsənəsaksə* ‘to cause to have lunch’ surfaces as [L-H-H-H-L]. I assume that Hs are inserted to toneless syllables between two Hs to achieve a plateau-like H-sequence in the case at hand.

- (16) **H-Insertion**: Insert an H to toneless syllables between two Hs.

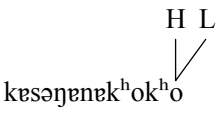
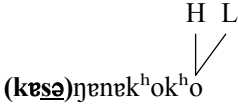
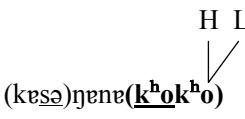
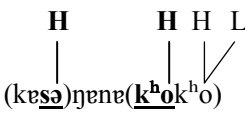
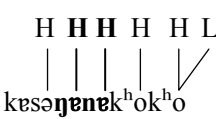
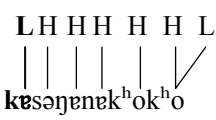
The rule of H-Insertion should be applied after Obligatory H (11):

- (17) Rule Ordering in Tone-Pattern 1

Ft Parsing (L, iambic) (8) > Ft Parsing (R, trochaic) (9) > Degenerate Ft (10)  
> Obligatory H (11) > **H-Insertion (16)** > Default L (12)

See the derivation of the hexasyllabic word in (18):

- (18) ‘to cause (some people) to shout to each other’  
 kəsəŋənək<sup>h</sup>ok<sup>h</sup>o /HL/

Lexicon	
a. Ft Parsing (L, iambic)	
b. Ft Parsing (R, trochaic)	
c. Degenerate Ft	N/A
d. Obligatory H	
e. H-Insertion	
f. Default L	
Surface	[L-H-H-H-HL]

It has been shown in this section that Zhuokeji word prosody can be analyzed as having an underlying system of /HL, Ø/. Underlyingly, only /HL/ has to be specified, then the surface tone pattern can be realized by the application of a set of tone rules. In transcribing tones, I shall leave toneless words unmarked, and mark /HL/ with a circumflex on the falling-toned syllable. For example:

(19) /Ø/	pak	‘pig’	[H]
	tə-pō	‘moxa’	[L-H]
	ka-ŋa-kru	‘to cry’	[L-H-H]
	k <sup>h</sup> a-rʃa-li-li	‘swallow (bird)’	[L-H-H-L]
/HL/	ʃâ	‘flesh, muscle’	[HL]
	tə-pô	‘intestines’	[L-HL]
	ka-nə-wô	‘to be sick’	[L-H-HL]
	kə-sə-co-lô	‘to mix’	[L-H-H-HL]

The contrastive relation between /Ø/ and /HL/ in Tone-Pattern 1 contexts can be seen in the disyllabic minimal pair in (20). Lexical differences between these two nouns are signaled by distinct tonal values over the same segments:

(20) Lexical meanings contrasting by tone

Nouns	Tone	Surface Form	Gloss
ta-ro	/Ø/	[L-H]	‘leader’
ta-rô	/HL/	[L-HL]	‘chest (body part)’

### 3.2 Surface Tone-Pattern 2

As mentioned at the beginning of §3, the surface realization of the toneless word is morphologically sensitive, and must be produced with either Surface Tone-Pattern 1 or Surface Tone-Pattern 2. Table 1 summarizes the distribution of the two tone patterns. Surface Tone-Pattern 1 occurs on nouns and non-finite verbs in the citation form, while Surface Tone-Pattern 2 occurs on inflected verbs, nouns in the vocative case, and ideophones. In other words, the two surface tone patterns are in complementary distribution with regard to the contexts they occur.

**Table 1:** Distribution of Tone-Pattern 1 and Tone-Pattern 2 of toneless words

	Tone-Pattern 1	Tone-Pattern 2
<b>Nouns</b>	All but in vocative case	Vocative case
<b>Verbs</b>	Citation form (nominalized with <i>ka-</i> or <i>kə-</i> )	Inflected verbs
<b>Ideophones</b>	None	All ideophones

Below are the attested patterns of /Ø/ on Surface Tone-Pattern 2.

## (21) Attested surface patterns of Tone-Pattern 2

	Monosyllabic	Disyllabic	Trisyllabic	Tetrasyllabic
<b>/Ø/</b>	<b>L</b>	<b>H-L</b>	<b>L-H-L</b>	<b>L-H-H-L</b>
(Inflective Verbs)				
rjap		nə-n̄jir	to-wa-tsor	to-nə-sa-ksə
‘(s/he) will stand’		‘(s/he) changed’	‘(it) cracked’	‘(s/he) had lunch’
(Non-Past) <sup>10</sup>		(Perfective)	(Perfective)	(Perfective)
(Vocative nouns)				
— <sup>11</sup>		kra-fes	kra-ʃi-smon	mts <sup>h</sup> o-mo-scit
		‘Krashis (Person Name)’	‘Krashismon (Person Name)’	‘Tshomoscit (Person Name)’
(Ideophones)				
—		boj-boj <sup>12</sup>	—	—
		‘choppy, fleshy’		

Compare the two sets of toneless patterns in (22):

(22)	/Ø/-1= Tone-Pattern 1	/Ø/-2= Tone-Pattern 2		
	Monosyllabic	Disyllabic	Trisyllabic	Tetrasyllabic
/Ø/-1	<b>H</b>	<b>L-H</b>	<b>L-H-H</b>	<b>L-H-H-L</b>
/Ø/-2	<b>L</b>	<b>H-L</b>	<b>L-H-L</b>	<b>L-H-H-L</b>

The /Ø/-2 Tone-Pattern is different from the /Ø/-1 Tone-Pattern in the following aspects. Note that the differences are only observed on words of three or fewer syllables. Tetrasyllabic or longer words surface with the same pattern in all contexts.

- (23) a. Monosyllabic toneless words surface as L instead of H.  
 b. Disyllabic words surface as H-L instead of L-H.  
 c. Trisyllabic words surface as L-H-L instead of L-H-H.  
 d. No H is allowed word finally, even in words of three or fewer syllables.

<sup>10</sup> The Perfective is formed with one of the seven orientationally specified perfective prefixes (*to-* ‘upward’, *na-* ‘downward’, *ko-* ‘eastwards’, *nə-* ‘westwards’, *ro-* ‘upstream’, *rə-* ‘downstream’, *jə-* (orientationally neutral)) and verb stem. Non-past forms are bare verb stems.

<sup>11</sup> Zhuokeji person names are disyllabic at a minimum.

<sup>12</sup> Unlike ideophones in the Caodeng dialect of Rgyalrong, which can be of one to four syllables (J. Sun 2004), ideophones in Zhuokeji are almost always disyllabic. Cf. J. Sun (2004) for the argumentation of ideophones as a distinct lexical category in Caodeng Rgyalrong.

The differences between the two types of surface tone patterns can be accounted for by an opposite order to apply the foot-parsing rules. That is, while Tone-Pattern 1 starts the foot-parsing processes from the left, Tone-Pattern 2 starts parsing a word by a trochaic foot from the right. All the related tonal rules to derive Tone-Pattern 2 are applied in the order as represented below in (24). Compare it with the rule ordering of Tone-Pattern 1 in (17). The only difference between the two is the application ordering of the two foot-parsing rules (8) and (9).

(24) Rule ordering of Tone-Pattern 2

Ft Parsing (R, trochaic) (9) > Ft Parsing (L, iambic) (8) >

Degenerate Ft (10) > Obligatory H (11) > H-Insertion (16) > Default L (12)

In (25), the Imperative verb form of ‘stand’ (monosyllabic), the ideophone ‘chubby, fleshy’ (disyllabic), and the Perfective form of ‘crack’ (trisyllabic) are all toneless. The derivation processes illustrate how their surface realizations are achieved.

(25)	‘(s/he) stands’ (Non-Past) rjap /Ø/	‘chubby, fleshy, very cute, ‘(it) cracked’ with rosy complexion’ (Ideophone) bojboj /Ø/	(Perfective) towatsor /Ø/
Lexicon	rjap	bojboj	towatsor
a. Ft Parsing (R, trochaic)	N/A	<b>(bojboj)</b>	to( <b>watsor</b> )
b. Ft Parsing (L, iambic)	N/A	N/A	N/A
c. Degenerate Ft	<b>rjap</b>	N/A	<b>to(watsor)</b>
d. Obligatory H	N/A	<b>H</b>   <b>(bojboj)</b>	<b>H</b>   to( <b>watsor</b> )
e. H-Insertion	N/A	N/A	N/A

f. Default L	<b>L</b>   <b>rjap</b>	<b>H L</b>     <b>bojboj</b>	<b>L H L</b>       <b>towatsor</b>
Surface	[L]	[H-L]	[L-H-L]

Words of four or more syllables are realized with the same surface patterns in both Tone-Pattern-1 and Tone-Pattern-2 contexts. (Compare surface patterns of tetrasyllabic /Ø/ for Tone-Pattern 1 and Tone-Pattern 2 in (22)). Below in (26) are two verbs inflected for perfectivity (respectively tetrasyllabic and pentasyllabic). Their surface representations were derived following the rule ordering I have proposed for Tone-Pattern 2. The output tone sequences, however, bear resemblance to the Surface Tone-Pattern 1 of tetrasyllabic and longer words.

(26) Tetrasyllabic and longer Perfective verbs

	‘(s/he) had lunch’ (Perfective) tonəsaksəs /Ø/	‘(you) had lunch’ (Perfective) totənəsaksən /Ø/
Lexicon	tonəsaksəs	
a. Ft Parsing (R, trochaic)	tonə( <b>saksəs</b> )	totənə( <b>saksən</b> )
b. Ft Parsing (L, iambic)	( <b>tonə</b> )( <b>saksəs</b> )	( <b>totə</b> )nə( <b>saksən</b> )
c. Degenerate Ft	N/A	( <b>totə</b> )nə( <b>saksən</b> )
d. Obligatory H	<b>H H</b>     ( <b>tonə</b> )( <b>saksəs</b> )	<b>H H</b>     ( <b>totə</b> )nə( <b>saksən</b> )
e. H-Insertion	N/A	<b>H H H</b>       totənəsaksən

f. Default L	<b>L H H L</b>         <b>tonəsaksəs</b>	<b>L H H H L</b>           <b>totənəsaksən</b>
Surface	[L-H-H-L]	[L-H-H-H-L]

In the contexts where Surface Tone-Pattern 2 occurs, the contrast between /HL/ and /Ø/ is still maintained. Grammatical differences can be signaled by distinct tonal values over the same segments. For example, the following verb forms of ‘stand’ (27) differ only in tone, but respectively denote perfective and imperative meanings.

(27) Perfective and imperative contrasting by tone

Grammatical Category	Verb Form	Tone	Gloss
<b>Imperative:</b>	to-rjap IMP-stand <sub>1</sub>	/Ø/	‘Stand up!’
<b>Perfective:</b>	to-rjâp PFV-stand <sub>2</sub>	/HL/	‘S/he stood up’

By the same token, the verb form *na-nat* (28) conveys observational meaning when it is toneless, and denotes a past-imperfective situation when it is falling-toned:

(28) Observational and past imperfective contrasting by tone

Grammatical Category	Verb Form	Tone	Gloss
<b>Observational:</b>	na-nat OBV-burn <sub>1</sub>	/Ø/	‘(it) is burning’
<b>Past-Imperfective:</b>	na-nât IMPV:PT-burn <sub>2</sub>	/HL/	‘(it) was burning’

Throughout this section, I have demonstrated that underlyingly, Zhuokeji exhibits a tonal contrast between /HL/ and /Ø/. Every word is either falling-toned or toneless. Once the tonal value of a word is lexically determined, it surfaces with a contextually sensitive tonal pattern that is derived in lexical phonology. With a few examples it has been demonstrated that the two tones can contrast both lexical and grammatical meanings. In the ensuing section I shall discuss in detail the various functions Zhuokeji tone serves.



## 4. Functions of Zhuokeji tone

Tone can mark both lexical and grammatical distinctions in Zhuokeji. The current section will first demonstrate how tones are used to distinguish lexical meanings (in §4.1), then proceed to the functions they serve throughout verbal and nominal morphology (§4.2).

### 4.1 Contrasting lexical meanings

Tones can be applied to contrast lexical meanings in Zhuokeji, though minimal pairs of lexical items distinguished by tones are not many, just as observed by X. Lin (1993).<sup>13</sup> With my Zhuokeji consultant I carefully went over the eight disyllabic minimal pairs listed in X. Lin (1993:747), and six pairs (29a-f) were confirmed for correctness. The minimal pair in (29g) was newly discovered. The toneless word in each pair surfaces with Tone-Pattern-1 since it is either a noun or a verb in the citation form:

(29) Disyllabic minimal pairs contrasting in tone

/Ø/			/HL/	
[L-H]			[L-HL]	
a.	ka-po	‘to spin yarn (NOM)’	ka-pô	‘to come; to bake (NOM)’
b.	tə-po	‘moxa’	tə-pô	‘intestines’
c.	ka-rma	‘to sleep (NOM)’	ka-rmâ	‘Tibetan eared pheasant’
d.	kə-jo	‘sheep’	kə-jô	‘to be light (NOM)’
e.	kə-tʃor	‘to be narrow (NOM)’	kə-tʃôr	‘to be sour’
f.	kə-jam	‘sun’	kə-jâm	‘to be spacious’
g.	kə-lok	‘white conch’	kə-lôk	‘shepherd’

### 4.2 Grammatical tonal variations

On the morphological front, roots in Zhuokeji can be either monosyllabic or polysyllabic, and the morphology provides quite rich affixal possibilities. Zhuokeji is like Tamang (Mazaudon 2005) in that its affixes are atonal, and the surface representation of the affixes is determined by the tone of the whole word.<sup>14</sup> The tone of a word is

<sup>13</sup> Just as pointed out by one of the anonymous reviewers, the fact that the minimal pairs are not many should not be a concern. Many prosodic contrasts, including stress in English, are convincingly attested to by a small number of minimal pairs.

<sup>14</sup> Hsieh (1999) in his analysis discusses the tonal variations of some “tonal suffixes”, which in fact are either enclitics (which can be tonal) or compound elements.

predictable depending on the morphological construction it is situated in. The tonal variations, however, are restricted within the privative-tone system I have proposed for this language.

In terms of tonal behaviors, the tonal modifications involved in grammar can be classified into three types. In the first type, grammatical alternations preserve the two-way tonal contrast between /HL/ and /Ø/ (§4.2.1). In the second type, the tone of one of the constituent morphemes is retained (§4.2.2). In the third type, morphosyntactic environments assign a definite tone irrespective of the inherent tone of the constituent morphemes (§4.2.3).

#### 4.2.1 Tonal modification preserving the two-way contrast

Three grammatical processes — Stem1-Stem2 alternation (§4.2.1.1), nominal plural and dual cliticization (§4.2.1.2), and topicalizing and case-marking enclitics (§4.2.1.3) — preserve, though in different ways, the binary tonal contrast between /HL/ and /Ø/.

##### 4.2.1.1 Stem1-Stem2 alternation

Zhuokeji verbs have two stems that are employed in different grammatical constructions. Stem1 forms include other-person Present Imperfective [*ɲɛ*-(~*ɲɛ*) + stem1], Non-Past (unprefixed stem1), Imperative [PFV + stem1], and Irrealis [IRR + PFV/IMPFV + stem1]. Stem2 forms are Perfective [PFV + stem2], Past Imperfective [*na*-(~*nɛ*) + stem2], and self-person Present Imperfective [*ko*- + stem2]. While only twenty percent of Zhuokeji verbs distinguish two verb stems via ablaut, almost all verbs resort to tone to achieve stem alternation. The tonal variations involved in this morphological process invoke tone polarity.<sup>15</sup> That is, if a verb has /HL/ in its Stem1 form, then it switches to /Ø/ to achieve its Stem2 form; and if a verb is toneless (/Ø/) in its Stem1 form, then its Stem2 form is falling-toned (/HL/):

- (30) Stem1-Stem2 alternation: Flip-flop between /HL/ and /Ø/

(Alternation 1)

<b>Stem1</b>	HL	L-HL	L-H-H-HL	L-H-HL	/HL/
<b>Stem2</b>	L	H-L	L-H-H-L	L-H-L	/Ø/

<sup>15</sup> Tonal polarity is also observed to be applied in the morphology of Mianchi Qiang (Evans 2008) and Kuki Thaadow (Hyman 2007b).

(Alternation 2)

<b>Stem1</b>	L	H-L	L-H-H-L	L-H-L	/Ø/
<b>Stem2</b>	HL	L-HL	L-H-H-HL	L-H-HL	/HL/

Below in (31)-(32) are examples of the above-mentioned grammatical constructions showing Stem1-Stem2 alternation for two verbs of inherently distinctive tones: ‘to dig’ and ‘to stand’. Examples in (31) show a flip-flop from /HL/ to /Ø/ for Stem1-Stem2 alternation of ‘to dig’. Note that the Imperative and Perfective verb forms in (31c) make a minimal pair distinguished by tone.

(31) ‘to dig’: STEM1 (/HL/) vs. STEM2 (/Ø/)

STEM 1 /HL/			STEM 2 /Ø/		
<b>a. Non-Past</b>	<b>lwâ-w</b> [lwâw] <sup>16</sup> dig <sub>1</sub> :NPT-3SG:OBJ <sup>17</sup> ‘(s/he) digs’	(HL)	<b>a. Past IMPFV</b>	<b>na-lwa-w</b> [ná-lwâw] IMPFV:PT-dig <sub>2</sub> -3SG:OBJ ‘(s/he) was digging’	(H-L)
<b>b. Present IMPFV (other-person)</b>	<b>ŋa-lwâ-w</b> [ŋà-lwâw] IMPFV-dig <sub>1</sub> -3SG:OBJ ‘(s/he) is digging’	(L-HL)	<b>b. Present IMPFV (self-person)</b>	<b>ko-lwa-ŋ</b> [kó-lwàŋ] IMPFV-dig <sub>2</sub> -1SG ‘(I) am digging’	(H-L)
<b>c. Imperative</b>	<b>to-lwâ-w</b> [tò-lwâw] IMP-dig <sub>1</sub> -3SG:OBJ ‘(you sg.) Dig!’	(L-HL)	<b>c. Perfective</b>	<b>to-lwa-w</b> [tó-lwâw] PFV-dig <sub>2</sub> -3SG:OBJ ‘(s/he) dug’	(H-L)
<b>d. Irrealis as Jussive</b>	<b>a-to-lwâ-w</b> [à-tó-lwâw] IRR-PFV-dig <sub>1</sub> -3SG:OBJ ‘Let (him/her) dig!’	(L-H-HL)			

Examples in (32) show a flip-flop from /Ø/ to /HL/ for Stem1-Stem2 alternation of ‘to stand’. Here again the Imperative and Perfective verb forms in (32c) differ only in tone.

<sup>16</sup> In the phonetic transcription within square brackets, the grave accent (ò) represents L tone, the acute accent (ó) represents H tone, and the circumflex (ô) represents Falling tone.

<sup>17</sup> The following abbreviations appear in Zhuokeji glosses: 1 = first person, 3 = third person, DU = dual, EVI = indirect evidential, IMP = imperative, IMPFV = imperfective, IRR = irrealis, NEG = negative, NMZLR = nominalizer, NOM = nominalized, NPT = non-past, OBJ = object, OBV = observational, PFV = perfective, PL = plural, PT = past, SG = singular, TOP = topicalizer, Tr = transitive, V<sub>1</sub> = verb-stem1, V<sub>2</sub> = verb-stem2.

(32) ‘to stand’: STEM1 /Ø/ vs. STEM2 /HL/

STEM 1 /Ø/			STEM 2 /HL/		
<b>a. Non-Past</b>	<b>rjap</b> [rjâp] stand <sub>1</sub> :NPT ‘(s/he) stands’	(L)	<b>a. Past IMPFV</b>	<b>na-rjâp</b> [nà-rjâp] IMPFV:PT-dig <sub>2</sub> -1SG ‘(I) am digging’	(L-HL)
<b>b. Present IMPFV (other-person)</b>	<b>ŋa-rjap</b> [ŋá-rjâp] IMPFV-stand <sub>1</sub> ‘(s/he) is standing’	(H-L)	<b>b. Present IMPFV (self-person)</b>	<b>ko-rjâp-ŋ</b> [kò-rjâm] IMPFV-stand <sub>2</sub> -1SG ‘(I) am standing’	(L-HL)
<b>c. Imperative</b>	<b>to-rjap</b> [tó-rjâp] IMP-dig <sub>1</sub> -3SG:OBJ ‘(you sg.) Stand up!’	(H-L)	<b>c. Perfective</b>	<b>to-rjâp</b> [tò-rjâp] PFV-dig <sub>2</sub> -3SG:OBJ ‘(s/he) stood up’	(L-HL)
<b>d. Irrealis as Jussive</b>	<b>a-to-rjap</b> [à-tó-rjâp] IRR-PFV-dig <sub>1</sub> -3SG:OBJ ‘Let (him/her) stand!’	(L-H-L)			

#### 4.2.1.2 (Falling-)toned clitics: dual and plural cliticization

Nominal dual and plural markers are falling-toned enclitics that take the noun phrase as the domain. For example, while in (33b) the plural marker is attached to the head noun, in (33d) it is attached to the modifier *kəts<sup>h</sup>o* ‘fat’ of the noun phrase. The same applies to nominal dual markers. These facts indicate that the dual and plural markers are not nominal suffixes. Instead, they are clitics that are phonologically dependent on the last element of a noun phrase.

- (33) a. pak ‘pig’  
 b. pak=ɲê ‘pigs’  
 c. pak kə-ts<sup>h</sup>o ‘big pig’ [pig NMZLR-be.big]  
 d. pak kə-ts<sup>h</sup>o=ɲê ‘big pigs’

Two tonal patterns are observed in nominal plural and dual forms, and the differences seem to derive from an interaction of the inherent tone of the enclitics and that of their hosts. Compare the patterns on the examples in (34) and (35):

(34) Tonal Pattern Type 1

	<u>Singular (/Ø/)</u>	<u>Dual</u>	<u>Plural</u>	<u>Gloss</u>
a.	pak [H]	pak=ndʒes	pak=ɲe [H-HL]	‘pig’
b.	toru [L-H]	toru=ndʒes	toru=ɲe [L-H-HL]	‘cat’

- c. k<sup>h</sup>ɛmtsəɾjɔk      k<sup>h</sup>ɛmtsəɾjɔk=ndʒes      k<sup>h</sup>ɛmtsəɾjɔk=ɲe    ‘lizard’  
[L-H-H]                          [L-H-H-HL]

(35) Tonal Pattern Type 2

	<u><b>Singular (/HL/)</b></u>	<u><b>Dual</b></u>	<u><b>Plural</b></u>	<u><b>Gloss</b></u>
a.	ca [HL]	ca=ndʒes	ca=ɲe [H-L]	‘pig’
b.	rdəgə [L-HL]	rdəgə=ndʒes	rdəgə=ɲe [L-H-L]	‘argali’
c.	lanpɔtʃ <sup>h</sup> e [L-H-HL]	lanpɔtʃ <sup>h</sup> e=ndʒes	lanpɔtʃ <sup>h</sup> e=ɲe [L-H-H-L]	‘elephant’

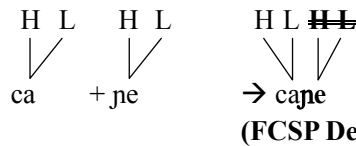
Note that in Type 1 (34), the dual and plural forms of toneless noun phrases all end with a falling-toned syllable, which happens to be the plural or dual marker. However, in Type 2 (35) all the plural and dual markers are on L.

These variations point to the fact that Zhuokeji allows no contour sequence within the same prosodic domain. Take the words in (35) as example, when the host is /HL/ (like the words in (35a), we have two inherent falling tones, one from the host, and the other from the plural or dual marker. My assumption is that under such circumstances only the /HL/ of the host (i.e. the first /HL/) survives. In other words, Zhuokeji requires that each tonal domain can only have one marked tone. In order to meet this requirement, the language deletes the tone(s) after the first /HL/ within the same domain. The rule, named “Forbidden Contour-Sequence Principle (FCSP)” for this analysis, is stated in (36):<sup>18</sup>

- (36) **FCSP Deletion:** Delete /HL/ after an /HL/ within the same tonal domain.

Take the plural form of ‘musk deer’ (37) as an example. The tonal modifications occur after the host surfaces with its post-lexical tone pattern:

- (37) ‘musk deer (PL)’: câ + =ɲê (Surface: [H-L])



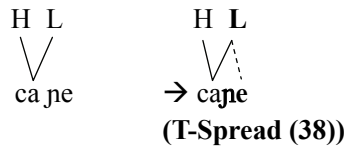
<sup>18</sup> I would like to thank the anonymous reviewers for their comments and suggestions on my earlier analysis of Zhuokeji plural/dual cliticization. In the earlier analysis, the Obligatory Contour Principle was invoked to account for the phenomena observed. In the present analysis, FCSP is proposed instead, as OCP applies exclusively to High tones, not contour tones.

After the plural marker becomes toneless, the tone of the host spreads on it by T-Spread:

- (38) **T-Spread:** A tone spreads onto toneless syllables once it is associated to a syllable.

Consider the process in (39) for how the plural marker in ‘musk deer (PL)’ obtains its surface phonological representation:

- (39) ‘musk deer (PL)’: câ + =ɲê (Surface: [H-L])

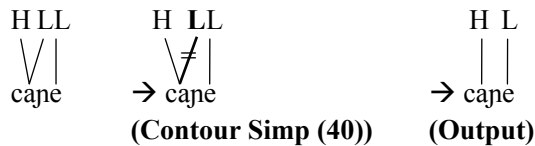


As for why the first /HL/ does not surface as falling but as high level, related studies have shown that contour tones tend to be simplified in non-final position. Zhang (2002), in a survey of contour-tone distribution, figures that phrase-final syllables are preferred contour-bearers, and the pitch excursion of contour tones are greater on a final syllable than on the same syllable elsewhere. Following Zhang’s generalization, I postulate that Zhuokeji does not allow non-final contours, so a potential non-final contour is avoided by deletion of the underlying L from /HL/. A contour-simplification rule is thus stated as in (40) for Zhuokeji:

- (40) **Contour Simplification:** L is deleted from /HL/ if it is non-final.

In the case of ‘musk deer (PL)’, the /HL/ of the host is maintained after FCSP, but since it is at a non-final position, the rule of Contour Simplification (40) applies:

- (41) ‘musk deer (PL)’: câ + =ɲê (Surface: [H-L])



On the other hand, when the host is a toneless word, the enclitic bears the only marked tone in the whole tonal domain, so post-lexical tone patterns of the host and the enclitic stay invariant. Consider the example in (42):

- (42) ‘pigs (PL)’: pak + ɲê (Surface: [H-HL])



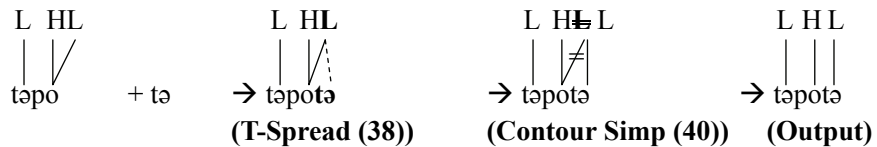
In transcribing nominal plural and dual forms, I shall represent the inherent tone values of both the host and the enclitic. For instance:

- (43) a. câ=ɲê (/HL/=HL/) ‘musk deer (PL)’  
           musk.deer=PL  
       b. toru=ndʒê (/Ø/=HL/) ‘(two) cats’  
           cat=DU

#### 4.2.1.3 Toneless clitics

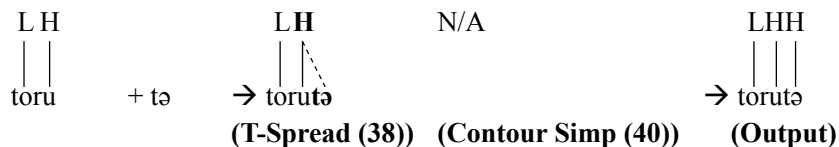
Toneless clitics include topicalizers =*tə*, =*mənaŋorə* and =*təmənaŋorə*, oblique topicalizer and subordinator =*ti*, as well as the ergative marker =*kə*. When these toneless enclitics are attached to the host, the last tone of the host spreads rightward onto the enclitics. Compare (44) and (45), which show how the topicalizer =*tə* receives different tonal values respectively from toneless and falling-toned hosts. In (44), the postlexical tone pattern of *təpô* ‘intestines’ (/HL/) is [L-HL]. The encliticized noun phrase *təpô*=*tə* ‘intestine=TOP’ surfaces as [L-H-L] because the final tone of *təpô* (i.e. [L] in the sequence [HL]) spreads onto the topicalizer, then the non-final /HL/ is simplified.

- (44)
- təpô*
- + =
- tə*
- ‘intestine=TOP’ Surface: [L-H-L]



On the other hand, if the host is toneless and surfaces as [L-H] post-lexically, the enclitic =*tə* receives a H via T-Spread from the host. For example:

- (45) toru + =
- rə*
- ‘cat=TOP’ Surface: [L-H-H]



The tonal patterns observed on the topicalizer =*tə* are extendible to all the above-mentioned toneless enclitics.

#### 4.2.2 Partial tone retention: compounding

The only environment observed to involve partial retention of tone in this study is the formation of compounds. Irrespective of the tone of the other compound element, the compound normally surfaces with the tone of the second (i.e. rightmost) compound element.

- (46) a. /Ø/ + /Ø/ → /Ø/  
           ta-me ‘foot’ + tə-mɲak<sup>19</sup> ‘eye’  
           → tamɲak [L-H-H] ‘ankle’
- b. /Ø/ + /HL/ → /HL/  
           tako ‘head’ + ɲê ‘hair’  
           → takorɲê [L-H-HL] ‘hair’
- c. /HL/ + /Ø/ → /Ø/  
           smôn ‘medicine’ + ta-pat ‘powder’  
           → smonpat [L-H] ‘powder medicine’
- d. /HL/ + /HL/ → /HL/  
           təʒbâ ‘face’ + ʃerê ‘bone’  
           → təʒbaʃerə [L-H-H-HL] ‘cheek-bone’

#### 4.2.3 Morphosyntactically-assigned tones

Three morphosyntactic environments have been observed to assign a specific tone irrespective of the inherent tone of the constituent morphemes. These morphosyntactic constituents are the Observational verb form (§4.2.3.1), the Indirect Evidential verb form (§4.2.3.2), and the Vocative case of nouns (§4.2.3.3).

##### 4.2.3.1 Observational<sup>20</sup>

The Observational verb is formed with the observational prefix *na-(nɛ-)* and verb

<sup>19</sup> Prefixes *tə-* and *ta-* are nominal prefixes. They are removed if the noun stem they attach to is a non-initial element of a compound.

<sup>20</sup> The observational is an evidential category which indicates that an imperfective situation is witness at a certain point of its interval.



stem1. Despite the inherent tone of the verb root, Observational verb forms are uniformly toneless.

Note that the tonal rule is required by the grammatical category to apply to the whole word. It is not the case that the observational prefix comes with a zero tone. That is, the grammar assigns a tonal value to the whole Observational verb form, not just to the grammatical prefix in question.

In the examples in (47) below, the inherent tone of the verb root is represented in its imperative form (thus on Surface Tone-Pattern 2). The Observational verb forms are also realized on Surface Tone-Pattern 2, but they are all toneless.

(47)		<b>Imperative</b>		<b>Observational</b>	
a.	‘stand’	to-rjap [H-L]	(/Ø/)	na-rjap [H-L]	/Ø/
b.	‘release’	nɛ-lɛt [L-HL]	(/HL/)	nɛ-lɛt [H-L]	/Ø/
c.	‘detour’	to-nə-pjol [L-H-L]	(/Ø/)	na-nə-pjol [L-H-L]	/Ø/
d.	‘be sick’	to-nə-wô [L-H-HL]	(/HL/)	na-nə-wo [L-H-L]	/Ø/
e.	‘put on top of another’	to-sa-tak-tak [L-H-H-L]	(/Ø/)	na-sa-tak-tak [L-H-H-L]	/Ø/
f.	‘read’	na-nə-mcɛ-rê [L-H-H-HL]	(/HL/)	nɛ-nə-mcɛ-rɛw [L-H-H-L]	/Ø/

#### 4.2.3.2 Indirect Evidential<sup>21</sup>

The segmental structuring and tone-placement rules involved in the Indirect Evidential verb vary for affirmative and negative meanings. The affirmative Indirect Evidential verb form, on the one hand, is composed of the indirect evidential past

<sup>21</sup> Indirect Evidential is a modal category which indicates that a situation, occurring before Speech Time, is not directly observed or perceived by the speaker (Cf. Y. Lin 2000:§5.3).

imperfective prefix *naa-* or one of the indirect evidential perfective prefixes<sup>22</sup> plus stem1. Irrespective of the inherent tone of the verb, the affirmative Indirect Evidential form shows a uniform tone pattern in which the first two syllables are H, and the rest is L.<sup>23</sup>

(48) Surface tonal patterns of Indirect Evidential forms

3 syllables	4 or more syllables
<b>H-H-L</b>	<b>H-H-L-L...L</b>

The examples below show that both lexically toneless and falling-toned words surface uniformly with the affirmative Indirect Evidential tone pattern.

(49) ‘to cry’ /Ø/

- a. Citation (with NOM *ka-*): ka-ŋa-kru [L-H-H] ‘to cry’
- b. Indirect Evidential (PFV): ta-a-ŋa-kru [H-H-L-L] ‘s/he cried’

(50) ‘to be sick’ /HL/

- a. Citation (with NOM *ka-*): ka-nəwo [L-H-HL] ‘to be sick’
- b. Indirect Evidential (PFV): ta-a-nə-wo [H-H-L-L] ‘s/he got sick’

I assume that Affirmative Indirect Evidential assigns a Falling tone (/HL/) to the second syllable, irrespective of the underlying tonal value of the verb stem.

(51) **IE Tone Assignment (Affirmative):** The affirmative Indirect Evidential verb takes an /HL/ on the second syllable

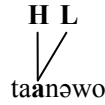
After being associated with the second syllable, /HL/ breaks into an H-L sequence, and the tones spread respectively onto their neighboring toneless TBUs by T-Spread (38). Then /HL/ undergoes Contour Simplification (40) (since it is situated in a non-final position). Take ‘s/he got sick (Indirect Evidential, Aff)’ as an example:

<sup>22</sup> The indirect evidential perfective prefixes are formed by shifting the vowels of the seven orientationally specified perfective prefixes (*to-* ‘upward’, *na-* ‘downward’, *ko-* ‘eastwards’, *nə-* ‘westwards’, *ro-* ‘upstream’, *rə-* ‘downstream’, *jə-* (orientationally neutral)) to *aa-*.

<sup>23</sup> In X. Lin (Lin 1993), Hsieh (1999), and Y. Lin (2000, 2003), the affirmative indirect evidential prefix is transcribed as monosyllabic instead of disyllabic (For example, the past imperfective indirect evidential prefix is *na-* instead of *naa-* in these previous studies). However, further examination on this prefix in both elicited and spontaneous speech reveals that the indirect evidential prefix is disyllabic.

(52) *kə-nəwô* ‘to be sick’

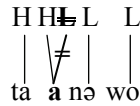
a. IE Tone Assignment (Aff)



b. T-Spread



c. Contour Simplification



Surface

[H-H-L-L]

The above processes give us the expected surface pattern: [H-H-L-L]. Affirmative Indirect Evidential verbs with toneless verb stems also undergo the same derivational process.

The negative Indirect Evidential verb, on the other hand, is composed of a negative prefix *mə-* followed by an indirect evidential prefix *ŋa-* plus verb stem (for both perfective and past imperfective situations):

(53) Negative Indirect Evidential (Perfective and Past Imperfective)

*mə-* + *ŋa-* + V

NEG- + EVI + VERB.STEM

Examples (54) and (55) compare affirmative and negative Indirect Evidentials. Note that the negative Indirect Evidentials are realized on distinct surface patterns from that of their affirmative counterparts.

(54) ‘to cry’ /Ø/

a. Indirect Evidential (PFV): *ta-a-ŋa-kru* [H-H-L-L] ‘s/he cried’

b. Indirect Evidential (PFV:NEG): *mə-ŋa-ŋa-kru* [H-L-L-L] ‘s/he didn’t cry’ or  
‘s/he was not crying’

(55) ‘to be sick’ /HL/

a. Indirect Evidential (PFV): *ta-a-nə-wo* [H-H-L-L] ‘s/he got sick’

b. Indirect Evidential (PFV:NEG): *mə-ŋa-nə-wo* [H-L-L-L] ‘s/he didn’t get sick’  
or ‘s/he was not sick’

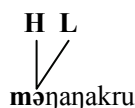
These surface differences are assumed to have resulted from the fact that Zhuokeji morphology associates an /HL/ to the initial syllable of a negative Indirect Evidential verb:

- (56) **IE Tone Assignment (Negative):** The affirmative Indirect Evidential verb takes an /HL/ on the initial syllable.

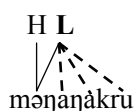
After the application of this tone-assignment rule, rules of T-Spread (38) and Contour Simplification (40) are also needed to derive the surface phonological representation. Take *məŋaŋakru* ‘s/he didn’t cry~s/he was not crying (Indirect Evidential)’ as an example:

- (57) ka-ŋakru ‘to cry’

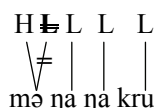
- a. IE Tone Assignment (NEG)



- b. T-Spread



- c. Contour Simplification



Surface

[H-L-L-L]

#### 4.2.3.3 Votive case

As in Caodeng Rgyalrong (J. Sun 2008), most personal names in Zhuokeji are direct Tibetan loans. The following data show that the vocative forms of personal names can take either /Ø/ or /HL/. For this construction the /HL/ is assigned to the final syllable, and surfaces with Surface Tone-Pattern 1 (cf. §3.1).

(58)	Person Name	Votive Form
		/Ø/ ~ /HL/
a.	kraʃes /Ø/ [L-H]	kraʃes ~ kraʃês [H-L] ~ [L-HL]

b.	ptsəsmon	/HL/	ptsəsmon	~	ptsəsmon
	[L-HL]		[H-L]	~	[L-HL]
c.	mts <sup>h</sup> omoscit	/Ø/	mts <sup>h</sup> omoscit	~	mts <sup>h</sup> omoscit
	[L-H-H]		[L-H-L]	~	[L-H-HL]
d.	kraʃismôn	/HL/	kraʃismon	~	kraʃismôn
	[L-H-HL]		[L-H-L]	~	[L-H-HL]
e.	kraʃiʔamo	/Ø/	kraʃiʔamo	~	kraʃiʔamô
	[L-H-H-L]		[L-H-H-L]	~	[L-H-H-HL]

In this section I have demonstrated the crucial role tone plays in the linguistic structuring of Zhuokeji. On the lexical front, at least seven disyllabic minimal pairs attest to the ability of /HL/ and /Ø/ to differentiate lexical meanings. The binary contrast between the two tones is also active in morphology. The tonal polarity involved in verb-stem alternation, for example, are determined on the basis of the verb's underlying tone. Stem1 carries the underlying tone, while Stem2 switches to the other tone (§4.2.1.1). The grammatical functions of Zhuokeji tone are also demonstrated with tonal and toneless enclitics that follow hosts of different tones (§§4.2.1.2-4.2.1.3), compounding that preserves the inherent tone of one of the elements (§4.2.2), as well as morphologically-assigned tones that overwrite the tones of the root (i.e. Observation in §4.2.3.1, Indirection Evidential in §4.2.3.2, and vocative case in §4.2.3.3). The tonality of all the constructions at the level of word morphology can be characterized by the tonal modifications described in this section.<sup>24</sup> These linguistic facts have revealed that tone in Zhuokeji is by no means 'marginal'; rather, it is an essential and multifunctional element that helps to make up the lexicon and grammar of this language.

## 5. Privative tone vs. tone and pitch-accent

The main purpose of this section is to compare the present tonal analysis with the previous analyses that resort to hybrid systems of tone plus pitch-accent. Before we proceed to the comparison, a few more words need to be stated with regard to the status of markedness of /HL/ in Zhuokeji. Based on the evidence and argumentation laid out in §3 and §4, I have proposed a privative-tone approach to characterize Zhuokeji word prosody. By definition, in a privative system the specified tone is marked (Hyman 2010: 287). A range of related linguistic facts, illustrated in the two previous sections, attest to the markedness of /HL/ over /Ø/ in Zhuokeji, codified here in (59).

<sup>24</sup> The tonal modifications involved in higher morphosyntactic levels such as phrase, clause or sentence, on the other hand, have yet been investigated fully.

- (59) a. Only /HL/ has to be specified underlyingly. The surface tone pattern of underlyingly toneless words can be derived by a number of contextually-sensitive phonological rules (§3).
- b. FCSP Deletion deletes /HL/ after another /HL/ in Zhuokeji, but not /HL/ after a /Ø/.
- Example: Plural/Dual Cliticization (§4.2.1.2)
- c. Morphological rules manipulate /HL/, and not /Ø/.
- Example: Indirect Evidential (§4.2.3.2)
- (/HL/ is assigned either to the initial or the second syllable.)
- vs. Stem1-Stem2 alternation (§4.2.1.1)
- (/HL/ is associated to the final syllable.)

These phenomena all point to the fact that Zhuokeji phonology refers conspiratorially to the marked tone /HL/, not the unmarked tone.

The present analysis is essentially tonal, while two previous analyses (Hsieh 1999, and Y. Lin 2000, 2003) have recourse to tone and pitch-accent to account for the tonal phenomena observed in Zhuokeji. Although an approach integrating pitch-accent and tone can hold up against the tonal phenomena, controversies have been surrounding the analytical adequacy and typological position of the notion of “pitch-accent”. Hyman (2006, 2007a), for example, argues that so far no diagnostic characteristic can be employed to define “pitch-accent” as a phonological prototype distinct from stress and tone. Readers can refer to Hyman (2006, 2007a), Pulleyblank (1986), and Odden (1999) for more detailed discussions on the typological and analytical inadequacy of the pitch-accent approach. With regard to the tonology of Zhuokeji, although the “tone and pitch-accent” approaches proposed in previous analyses can account for the tonal phenomena observed, they weaken phonological theory substantially, whether in terms of typology or analytical methodology.

In generative phonology, there has always been a research strategy that underlying forms should be “minimally redundant” (Kiparsky 1982), and all predictable phonological behaviors should be accounted for by conventions, rules, or constraints. The present tonal analysis of Zhuokeji word prosody follows this strategy by assuming a privative tonal system of /HL/ vs. /Ø/. It not only avoids analytical and typological problems that a tone and pitch-accent approach may raise, but also provides a simpler and more coherent tonal picture throughout lexicon and grammar. Table 2 compares the present analysis with the analyses by Y. Lin (2000, 2003) and Hsieh (1999), both of whom have recourse to the “tone and pitch-accent” approach:

**Table 2:** Zhuokeji lexical tonal contrast and grammatical variations in the present and previous analyses

Distribution	Present analysis	Y. Lin (2000, 2003)	Hsieh (1999)
Lexicon:	/HL/ vs. /Ø/	/HL/ vs. /H/ or penultimate accent	/L/ vs. /H/ or penultimate accent
Stem1-Stem2 Alternation:	Tonal polarity of /HL/ and /Ø/	/HL/ vs. penultimate accent	N/A
Vocative case (noun):	/HL/ or /Ø/	/HL/ or penultimate accent	Initial accent <sup>25</sup>
Observational:	/Ø/	Penultimate accent	N/A
Compounds (two-component):	Tonal value of the second component	Tonal value of the second component	Combination of the components' tonal values
Indirect Evidential:	/HL/ on the second syllable (AFF) /HL/ on the initial syllable (NEG)	Initial accent	Initial accent

As shown in this table, while a tone and pitch-accent approach must specify /H/, /HL/, /\*/ on distinct locations for lexicon and different grammatical constructions, the present account handles the same facts with a more restricted inventory of tonal entities /HL, Ø/. More importantly, it can be clearly seen that the lexical contrast between /HL/ and /Ø/ is adhered to in the grammar (see Stem1-Stem2 alternation of verb, for instance). In a tone and pitch-accent analysis, the same contrast is represented with an underlying /HL/ versus a rather unmotivated penultimate /\*/.

## 6. Conclusion

This paper has demonstrated that Zhuokeji is by no means atonal, nor are tonal modifications merely restricted to a limited range of uses; rather, it is a true tone language, and to the highest degree tonal processes pervade the lexicon and morphology of this language. Zhuokeji exhibits a dichotomous tonal contrast, but only /HL/ has to be specified underlyingly. The markedness of /HL/ over /Ø/ is evidenced by tonal behaviors involved in a number of morphological constructions (cf. §4.2). As in Tamang (Mazaudon

<sup>25</sup> Hsieh (1999:155) only examined disyllabic vocative nouns words, and this is probably why the position of accent placement he proposes is different from that proposed by Y. Lin (2000, 2003) and the present analysis.

2005), Zhuokeji tone takes a whole word as its domain,<sup>26</sup> the difference being that in Tamang tone interplays with phonation (Mazaudon 2005, Mazaudon & Michaud 2008), while in Zhuokeji tone and syllable structure are independent from each other. The present tonal analysis has been shown to be more consistent and restricted than previous analyses that invoke both pitch-accent and tone (cf. §5).

Using the three ways proposed by Hyman (Hyman 2001b:1368-1376) to typologize tone systems, we show more characteristics of the Zhuokeji tone system. First, in terms of phonological contrasts, Zhuokeji shows a binary contrast between the absence and presence of a tone (i.e. /HL/). While the other privative systems discovered so far all involve level tones (Hyman 2001a), the marked tone in the Zhuokeji system is a contour tone. In typologizing tone systems by functions, Zhuokeji tone is put to not only lexical but also morphological functions. In addition to distinguishing lexical meanings (as demonstrated in §4.1), tone is also involved in the inflectional morphology of the nominal and verbal paradigms of this language. The Perfective and Imperative verb forms of some verbs, for example, differ only in tone (as shown in §4.2.1.1). With respect to the typological characteristics of tone rules, rules of metrical structuring and the rule FCSP could be the most characteristic tone rules of Zhuokeji. Tone spreading is also active, but it only occurs at post-lexical level (see §§4.2.1.2-4.2.1.3, and §4.2.3.2). Zhuokeji has morphological tone-assignment rules, as can be seen in verb-stem alternation (§4.2.1.1), compounding (§4.2.2), Observational verb forms (§4.2.3.1), Indirect Evidential verb forms (§4.2.3.2), and vocative case of nominals (§4.2.3.3).

Although the Zhuokeji tone shows some features that are characteristic of African tone systems, a closer scrutiny reveals that it is not among the small number of Tibeto-Burman languages that bear “African tone systems” (among them are Kuki Thaadow (Hyman 2007b) and Mianchi Qiang (Evans 2008)). Table 3 below is adapted from Hyman (2007b), which is based on Pike’s (1948) distinction between “contour tone systems” (as in Chinese) and “register tone systems” (as represented by African languages like Bantu). I note the type Zhuokeji sides with on the rightmost column:

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<sup>26</sup> A number of the Tibeto-Burman languages in Sichuan, meanwhile, have also been observed to show tonal culminativity — that there is no more than one pronounced lexical tone per prosodic word. See Evans (2009b) for a detailed analysis of culminativity in languages including Rgyalrong, Qiang, and Pumi.



**Table 3:** Tonal features that distinguish “contour tone systems” from “register tone systems” (Pike’s 1948 distinction), adapted from Hyman (2007b)

	<b>A. “Contour tone systems”</b>	<b>B. “Register tone systems”</b>	<b>Zhuokeji</b>
a.	Fewer level tones than contours	More level tones than contours	A
b.	Contour tones= units	Contour tones= sequences (clusters)	A/B?
c.	Contour tones have free distribution within the utterance	Contour tones (clusters) are often limited to the last syllable	A
d.	Dissimilation of contour + contour	Dissimilation of contour tones= rare	A
e.	No downstep	Downstep	A
f.	Floating tones= rare	Floating tones= frequent	A
g.	Tone spreading= rare	Tone spreading= frequent	B
h.	Function of tone= lexical	Function= lexical and/or grammatical	B
i.	Words are monosyllabic	Words come in various sizes	B
j.	Tones are restricted by syllable type	Tone may occur on any syllable type	B

The Zhuokeji tone system is similar to register tone systems (Type B) with regard to the frequency of tone-spreading (g), function of tone (h), size of words (i), and the interaction between tone and syllable type (j). Its contour tone /HL/ can break into H and L that spread respectively. Moreover, tone is involved in both lexical distinction and morphological modifications. Finally, Zhuokeji words come in various sizes, and tone is not restricted to any syllable type. These, however, do not make ample evidence to claim that Zhuokeji exhibits an African tone system. Tone in this language also sides with Type A (“contour tone systems”) in a fair number of aspects. First, with respect to tonal inventory (a), Zhuokeji has a privative tone system, but the only underlyingly specified tone is a contour tone, not a level tone. Second, the distribution of the contour tone is not limited to the last syllable (c), as it can be associated to the first, the second, and the final syllables. Thirdly, dissimilation between adjacent contour tones (d) does occur in this language. Finally, just as in languages of “Asian” tone systems, neither downstep nor floating tone is detected in Zhuokeji.

With regard to the property about the nature of contour tone (b), because of the double status of the /HL/ in Zhuokeji, it is in fact difficult to determine which type this language sides with. On the one hand, when the falling tone spreads, /H/ and /L/ spread

respectively (see §4.2.3.2), which suggests that the contour tone is not a unit but a sequence of H + L. On the other hand, the application of FCSP (which deletes /HL/ after an /HL/ within the same tonal domain. See §4.2.1.2.) shows that /HL/ should also be treated as a single unit.<sup>27</sup> The fact that property (a) cannot be determined in any way for Zhuokeji suggests that the dichotomous model of “Asian” versus “African” tones and their diagnostic properties may have their limits, as they are not encompassing enough to accommodate a tone language like Zhuokeji.<sup>28</sup>

It is the case that not all languages in the Rgyalrong family are tonal. Recent advances that have been made in studies on Rgyalrong have enriched our knowledge about the tonality of the languages. Within this family the functions of tone vary drastically from language to language. In particular, while the Zhuokeji dialect of Situ Rgyalrong and the Caodeng dialect of Sidaba Rgyalrong are tonal to various degrees,<sup>29</sup> Chabao/Japhug Rgyalrong is clearly atonal (Jacques 2008).<sup>30</sup> Now with a clearer picture of the Rgyalrong tonal systems, we are in a better position to consider them for what they really are.

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<sup>27</sup> I would like to thank the anonymous reviewers for highlighting the double status of the Zhuokeji /HL/ for me, which helps me analyze the nature of the falling tone in a more appropriate way.

<sup>28</sup> I would like to thank one of the anonymous reviewers for the reminder that the two-way model of “Asian” and “African” tones does not bring out hard-and-fast categories.

<sup>29</sup> Caodeng Rgyalrong has been analyzed by J. Sun (2003, 2008) as a primarily pitch-accent language. Pitch accent in this language plays a contrastive role at both the lexical and morphological levels (J. Sun 2003:491).

<sup>30</sup> Jacques’s analysis is based on the Ganmuniao dialect of Chabao/Japhug Rgyalrong. I personally have investigated the Dazang dialect Chabao/Japhug Rgyalrong, and related data show that the dialect is also atonal.

## References

- Clements, G. Nick. 2000. Phonology. *African Languages: An Introduction*, ed. by Bernd Heine & Derek Nurse, 123-160. Cambridge & New York: Cambridge University Press.
- Evans, Jonathan P. 2008. 'African' tone in the Sinosphere. *Language and Linguistics* 9.3:463-490.
- Evans, Jonathan P. 2009a. Is there a Himalayan tone typology? *Senri Ethnological Studies* 75:199-221.
- Evans, Jonathan P. 2009b. Types of tonal culminativity in languages of Sichuan and elsewhere. Manuscript. Taipei: Institute of Linguistics, Academia Sinica.
- Gussenhoven, Carlos. 2004. *The Phonology of Tone and Intonation*. Cambridge & New York: Cambridge University Press.
- Hsieh, Feng-fan. 1999. *Theoretical Aspects of Zhuokeji rGyalrong Phonology*. Hsinchu: National Tsing Hua University MA thesis.
- Huang, Liangrong. 1993. Jiarongyu qianzhui 'ta- tə- ka- kə-' de yufa zuoyong [The grammatical functions of the prefixes 'ta- tə- ka- kə-' in Rgyalrong]. *Minzu Yuwen* [Minority Languages of China] 1993.3:26-31, 58.
- Hyman, Larry M. 2001a. Privative tone in Bantu. *Proceedings of the Symposium "Cross-Linguistic Studies of Tonal Phenomena: Tonogenesis, Japanese Accentology, and Other Topics"*, ed. by Shigeki Kaji, 237-257. Tokyo: ILCAA, Tokyo University of Foreign Studies.
- Hyman, Larry M. 2001b. Tone systems. *Language Typology and Language Universals: An International Handbook*, ed. by Martin Haspelmath, Ekkehard König, Wulf Oesterreicher & Wolfgang Raible, 1367-1380. Berlin & New York: Walter de Gruyter.
- Hyman, Larry M. 2006. Word-prosodic typology. *Phonology* 23.2:225-257.
- Hyman, Larry M. 2007a. How (not) to do phonological typology: the case of pitch-accent. *UC Berkeley Phonology Lab 2007 Annual Report*, 654-685.
- Hyman, Larry M. 2007b. Kuki-Thaadow: an African tone system in Southeast Asia. *UC Berkeley Phonology Lab 2007 Annual Report*, 1-19.
- Hyman, Larry M. 2010. Markedness and the phonological typology of two-height tone systems. *UC Berkeley Phonology Lab 2010 Annual Report*, 283-296.
- Jacques, Guillaume. 2008. *Jiarongyu Yanjiu* [A Study on the Rgyalrong Language]. Beijing: Nationalities Press.
- Kiparsky, Paul. 1982. Lexical morphology and phonology. *Linguistics in the Morning Calm*, ed. by In-Seok Yang, 3-91. Seoul: Hanshin.
- Kubozono, Haruo. 2001. Comments on "Privative tone in Bantu" by Larry Hyman. *Proceedings of the Symposium "Cross-Linguistic Studies of Tonal Phenomena:*

- Tonogenesis, Japanese Accentology, and Other Topics*”, ed. by Shigeki Kaji, 259-265. Tokyo: ILCAA, Tokyo University of Foreign Studies.
- Lin, Xiangrong. 1983. Jiarongyu goucifa yanjiu [A study of word-formation processes in Rgyalrong]. *Minzu Yuwen* [Minority Languages of China] 1983.3:47-58.
- Lin, Xiangrong. 1993. *Jiarongyu Yanjiu* [A Study of Rgyalrong]. Chengdu: Sichuan Nationalities Publishing House.
- Lin, You-Jing. 2000. *Tense, Aspect, and Modality Inflection in the Zhuokeji rGyalrong Verb*. Hsinchu: National Tsing Hua University MA thesis.
- Lin, You-Jing. 2003. Tense and aspect morphology in the Zhuokeji rGyalrong verb. *Cahiers de Linguistique–Asie Orientale* 32.2:245-286.
- Ma, Xueliang. (ed.) 2003. *Han-Zangyu Gailun* [An Introduction to Sino-Tibetan Languages] (2<sup>nd</sup> edition). Beijing: Nationalities Press.
- Mazaudon, Martine. 2005. On tone in Tamang and neighboring languages: synchrony and diachrony. *Proceedings of the Symposium “Cross-Linguistic Studies of Tonal Phenomena: Historical Development, Tone-Syntax Interface, and Descriptive Studies”*, ed. by Shigeki Kaji, 79-96. Tokyo: ILCAA, Tokyo University of Foreign Studies.
- Mazaudon, Martine, and Alexis Michaud. 2008. Tonal contrasts and initial consonants: a case study of Tamang, a ‘missing link’ in Tonogenesis. *Phonetica* 65.4:231-256.
- Nagano, Yasuhiko. 1984. *A Historical Study of the rGyarong Verb System*. Tokyo: Seishido.
- Nagano, Yasuhiko. 2003. Cogtse Gyarong. *The Sino-Tibetan Languages*, ed. by Graham Thurgood & Randy J. LaPolla, 469-489. London: Routledge.
- Odden, David. 1999. Typological issues in tone and stress in Bantu. *Proceedings of the Symposium “Cross-Linguistic Studies of Tonal Phenomena: Tonogenesis, Typology, and Related Topics”*, ed. by Shigeki Kaji, 187-215. Tokyo: ILCAA, Tokyo University of Foreign Studies.
- Pike, Kenneth L. 1948. *Tone Languages*. Ann Arbor: University of Michigan Press.
- Pulleyblank, Douglas. 1986. *Tone in Lexical Phonology*. Dordrecht: D. Reidel.
- Qu, Aitang. 1983. Jiarongyu dongci de rencheng fanchou [Person agreement on Rgyalrong verbs]. *Minzu Yuwen* [Minority Languages of China] 1983.4:35-48, 60.
- Qu, Aitang. 1984. Jiarongyu gaikuang [Introduction to Rgyalrong]. *Minzu Yuwen* [Minority Languages of China] 1984.2:67-80.
- Qu, Aitang. 1990. Jiarongyu de fangyan: fangyan huafen he yuyan shibie [Rgyalrong dialects: issues in dialect subclassification and language recognition]. *Minzu Yuwen* [Minority Languages of China] 1990.4:1-8; 1990.5:37-44.
- Qu, Aitang. 2004. Zhongguo Zangzu yuyan wenzi yanjiu wushi nian [Fifty years of studies on languages and writing of Tibetans in China]. *China Tibetology* 2004.1: 84-98.

- Ratliff, Martha. 1992. Tone language type change in Africa and Asia: !Xū, Gokana, and Mpi. *Diachronica* 9.2:239-257.
- Shaw, Patricia A. 1985. Coexisting and competing stress rules in Stoney (Dakota). *International Journal of American Linguistics* 51.1:1-18.
- Sun, Hongkai, Zengyi Hu, and Xing Huang. (eds.) 2007. *Zhongguo de Yuyan [The Languages of China]*. Beijing: The Commercial Press.
- Sun, Jackson T.-S. 2003. Caodeng rGyalrong. *Sino-Tibetan Languages*, ed. by Graham Thurgood & Randy J. LaPolla, 490-502. London: Routledge.
- Sun, Jackson T.-S. 2004. Verb-stem variations in Showu rGyalrong. *Studies on Sino-Tibetan Languages: Papers in Honor of Professor Hwang-Cherng Gong on His Seventieth Birthday*, ed. by Ying-chin Lin, Fang-min Hsu, Chun-chih Lee, Jackson T.-S. Sun, Hsiu-fang Yang & Dah-an Ho, 269-296. Taipei: Institute of Linguistics, Academia Sinica.
- Sun, Jackson T.-S. 2006. Caodeng Jiarongyu de guanxiju [Relative clauses in Caodeng rGyalrong]. *Language and Linguistics* 7.4:905-933.
- Sun, Jackson T.-S. 2008. Tonality in Caodeng rGyalrong. *Chomolangma, Demawend und Kasbek: Festschrift für Roland Bielmeier zu seinem 65 Geburtstag*, ed. by Brigitte Huber, Marianne Volkart & Paul Widmer, 257-280. Halle (Saale): International Institute for Tibetan and Buddhist Studies.
- Sun, Jackson T.-S., and You-Jing Lin. 2007. Constructional variation in rGyalrong relativization: How to make a choice? Paper presented at the International Workshop on Relative Clauses, November 2-3, 2007. Taipei: Institute of Linguistics, Academia Sinica.
- Yip, Moira. 2002. *Tone*. Cambridge & New York: Cambridge University Press.
- Zhang, Jie. 2002. *The Effects of Duration and Sonority on Contour Tone Distribution: A Typological Survey and Formal Analysis*. London: Routledge.

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## 絕非若有似無： 卓克基嘉戎語的缺性聲調系統

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卓克基嘉戎語長久以來都被歸類為無聲調語言，也有學者稱其聲調「若有似無」。本文廣泛援引詞彙及形態結構的豐富證據，論證卓克基嘉戎語的聲調系統絕非若有似無，其功能也不侷限於局部少量的語意對立。相反地，卓克基嘉戎語的聲調貫穿詞彙與語法的層次，不但能區別詞彙語意，更是所有語法範疇在構建時不可或缺的組成部件。本文主張卓克基嘉戎語是不折不扣的聲調語言，其系統為缺性聲調系統，呈現出降調 /HL/ 與零聲調 /Ø/ 相對的格局。此語言聲調對立的基本定義域為詞，至於每個詞的表面調型如何體現調節，則取決於其所處之形態結構與範疇。從聲調類型學的角度來剖析，卓克基嘉戎語的聲調是「亞洲」與「非洲」聲調系統的特質兼而有之。

關鍵詞：嘉戎語，聲調，缺性聲調系統，聲調二極性，藏緬語