## An Integrational Linguistics analysis of phrase-level tones: the case of "Induced Creaky Tone" in Burmese

Mimi Tian University of Mainz The phenomena of grammatical tones have been observed in African languages, Mesoamerican languages and several Tibeto-Burman languages. How to handle them formally remains a question. This study provides an Integrational Linguistics (Lieb 1998, 2008) analysis of grammatical tones that is consistent with segmental grammatical particles on the one hand, while being in line with the treatment of other intonation phenomena on the other hand. The possessor-marking function of the "Induced Creaky Tone (ICT)" in Burmese is taken as an example.

a. <i>mèmè</i>		"mother"
b. <i>mè<b>me</b></i>	èiN	"mother's house"
mother-POSS	house	

This grammatical tone is primarily induced by syntax, strictly constrained by phonology, has sentence-semantic implications, and follows lexical-semantic and morphological selection criteria. The possessive ICT occurs on the right edge of the possessor phrase and is informally described as a tonal postposition, i.e. a word. In Integrational Linguistics, a phonological word is not a sound sequence but a structured sound sequence, a triple  $\langle f^p, k^p, I^p \rangle$ , in which  $f^p$  is a sequence of phonemes,  $k^p$  is a phonological constituent structure of  $f^p$ , and  $I^p$  is a phonological intonation structure of  $f^p$  relative to  $k^p$ . The reason behind such a structured sequence is that every meaning-related property should be represented in the word form. Figure 1 compares the representation of the word  $meme^2 = \langle meme/, k^p, I^p \rangle$  with that of the word ICT= $\langle \emptyset, \emptyset, \{H, [c.g.]\} \rangle$ . As a tonal particle, the representation of ICT is consistent with any other word. This phonological word is a triple, the sound sequence is the empty set, the constituent structure is the empty set, and the intonation structure consist of a unit-sequence of a set of tonal properties.

$$m \dot{e}m \dot{e} = \begin{cases} k^{p} = \begin{cases} Vg & Vg \\ C & V & C & V \\ I & 2 & 3 & 4 \\ I^{p} = \\ I^{p} = \\ I^{p} = \\ \{Low\} \\ \{Low\} \end{cases}$$
 ICT = 
$$\begin{cases} k^{p} = \emptyset \\ I^{p} = \{H, [c.g.]\} \end{cases}$$

Figure 1 Phonological words mèmè and ICT. C: consonantal, V: vocalic, Vg: Vocalic group.

IL assumes a more abstract phonological level and a less abstract phonetic level. Figure 2 shows a syntactic structure of sentence (1b) on top of the syntactic unit, and an intonation structure below it. On the phonological level, *mèmè* and ICT are separate phonological words. On the phonetic level, *mèmè* and ICT are merged together, the intonation structure of ICT replace that of the last syllable in *mèmè*.

		NGr	
	PĠr		
	Nf	$\mathbf{P}_{\mathbf{f}}$	 Nf
	1	2	3
phonological level:	mèmè	ICT	eìN
	$\{L\} \ \{L\}$	{H,[c.g.]}	$\{L\}$
phonetic level:	mè <b>mę</b>		eìN
-	$\{L\} \{H, [c.g.]\}$		$\{L\}$
	Figure 2 ICT in the sys	ntactic and intonatio	n structu

Figure 2 ICT in the syntactic and intonation structure

Integrational Linguistics takes account of different levels of grammar in a clearly constructive and inter-related way. It as a general theory has complete sub-theories from phonology to semantics and is an ideal framework for researches with an integrative view on language. **References** 

Lieb, Hans-Heinrich. 1998. "Morph, Wort, Silbe: Umrisse einer Integrativen Phonologie des Deutschen". In: Matthias Butt, and Nanna Fuhrhop (eds). Variation und Stabilität in der Wortstruktur: Untersuchungen zu Entwicklung, Erwerb und Varietaäten des Deutschen und anderer Sprachen. Hildesheim etc.: Georg Olms Verlag. (= Germanistische Linguistik 141–142). 334–407. —2008."The Case for two-Level Phonology:German obstruent devoicing and nasal alternation in French".in: Robin Sackmann (ed.).*Studies in Integrational Linguistics 1*.