# Prosody of Final Particles in Thai:
## Interaction between lexical tones and intonation

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The Autosegmental-Metrical (AM) model of intonation has provided fruitful results in analyses of various intonational systems (e.g. Beckman and Pierrehumbert, 1986; Hayes and Lahiri, 1991). While these models work well for non-tonal languages, much less is understood about languages with lexical tones. Fortunately, some progress is starting to be made toward an understanding of lexical tone and intonation. Previous literature on intonation in Thai (for example, Kallayanamit, 2004; Luksaneeyanawin, 1983) as well as other tone languages (e.g. Flynn, 2003; Peng et al., 2005) has successfully disentangled various aspects of intonation, but fails to distinguish between gradient paralinguistic effects and categorical structural properties of intonation as discussed in Gussenhoven (2004). This paper thus tackles the puzzling co-existence of lexical tones and intonation in languages by examining the prosodic behavior of Thai final particles from a structural phonological perspective.

While intonation can be understood as the use of contrastive pitch variation to express discourse meaning and to mark phrases (Gussenhoven, 2004), lexical tones are defined as lexically contrastive pitch patterns (Gussenhoven, 2004; Ladd, 1996). One crucial question is then how intonation and lexical tones co-exist in tone languages. Perhaps not coincidentally, many tonal languages also have an elaborate system of final particles. Final particles are grammatical morphemes that occur at the end of phrases and may convey grammatical, discourse, or sociolinguistic information, as illustrated in (1).

(1)   a.   [sòmtām      ʔarɔ̀j          máj]
           papaya-salad   delicious        FP
           'Is the papaya salad delicious?' (/máj/ = 'NEUTRAL Q')
      b.   [sòmtām      ʔarɔ̀j          ná]
           papaya-salad   delicious        FP
           'The papaya salad is delicious, I'm telling you.' (/na/ = 'RESPONSE DESIRED')
      c.   [sòmtām      ʔarɔ̀j          kháp]
           papaya-salad   delicious        FP
           'The papaya is salad delicious.' (/kháp/ = 'MALE, POLITE')

Final particles have often been claimed to function similarly to intonation in non-tonal languages such as English (e.g. Chan, 2002). This raises a number of questions about the

tonal properties of these particles as well as their relationships to intonation. Earlier work (e.g. Chuenkongchoo, 1956; Cooke, 1989) has shown that some final particles in Thai have "falling tone" when they occur in statements and "high tone" when they occur in the questions. For instance, the "unrestrained" status particle /wa/ are realized as [wá] in yes-no interrogative sentences and [wâ] in declarative sentences as shown in (2). Such patterns suggest that boundary tones H% and L% may be at work in collaboration with the final particles.

(2)  a.  [nɔ́:j    mā:    mûɯràj           wá]
         Noi    come    when           FP
         'When did Noi come?' (/wa/ = 'UNRESTRAINED')
     b.  [nɔ́:j    mā:    mûɯyēn          wâ]
         Noi    come    in-the-evening  FP
         'Noi came in the evening.'  (/wa/ = 'UNRESTRAINED')

However, some particles show a pitch contour contradictory to this generalization. As exemplified in (3), the status particle perceived as [kháp] always occurs in statements, while the falling-contour [lâ] of the modality particle /lâ/ is the expected surface form for wh-questions.  This fact shows that intonation cannot be the only factor that affects the tonal behavior of Thai final particles.

(3)  a.  rɔ́:n    máj    lâ
         hot     FP     FP
         'It's hot, isn't it?' (/lâ/ = 'SHIFT OF FOCUS')
     b.  rɔ́:n    kháp
         hot     FP
         'Yes, it's hot.' (/kháp/ = 'MALE, POLITE')

The prosody of final particles in Thai is therefore an ideal case study for observing the interactions between intonation and lexical tones. In this paper, I propose a model of the in which lexical tones and boundary tones are in an optimality-theoretical competition. Building on the AM framework, the model claims that 1) final particles in Thai are intonational clitics that are hosted at the right edge of intonational phrases, 2) these final particles may be either toneless or tonal, cf. (2) and (3) respectively, and 3) that boundary tones can surface only on underlyingly-toneless final particles. The proposed representations of toneless and tonal particles are illustrated in (4).

(4)    a.    [[nɔ́:j    mā:    mûɯəyēn]ₜ      kha-L%]ₜ
           Noi     come    in-the-evening    FP
           'Noi came in the evening.'   (/kha/ = 'FEMALE, POLITE')
     b.    [[nɔ́:j    mā:    mûɯəyēn]ₜ      kháp]ₜ
           Noi     come    in-the-evening    FP
           'Noi came in the evening.'   (/kháp/ = 'MALE, POLITE')

Both of the two polite particles in (4a-b) are prosodically-defective function words that subcategorize for intonational phrases as prosodic hosts. They are generally unstressed and must be prosodically cliticized to the preceding phrases. However, one crucial difference is that /kháp/ is specified with the lexical high tone but /kha/ is underlyingly toneless. Since lexical tones always override boundary tones in Thai, /kháp/ surfaces with its lexical tone as [kháp]. In contrast, /kha/ is not specified for lexical tone and therefore can serve a docking site for the boundary tones L%, surfacing as [khá]. This approach to Thai final particles thus gives us insight into the interaction between lexical tones and boundary tones and contribute to a deeper understanding of intonation in tonal languages.

## References

BECKMAN, MARY E. and PIERREHUMBERT, JANET B. 1986. Intonational structure in Japanese and English. Phonology Yearbook, 3.255-309.

CHAN, MAJORIES K. M. 2002. Chinese: Gender-related use of sentence-final particles in Cantonese. Gender Across Languages: The Linguistic Representation of Women and Men, ed. by Marlis Hellinger and Hadumod Bussmann, Page 57-72. Amsterdam: John Benjamins Publishing Co.

CHUENKONGCHOO, TERD 1956. The Prosodic Characteristics of Certain Particles in Spoken Thai, The University of London (SOAS): M.A. Thesis.

COOKE, JOSEPH R. 1989. Thai sentence particles: Forms, meaning and formal-semantic variations. Thai Sentence Particles and Other Topics, ed. by Joseph R. Cooke. Canberra: Department of Linguistics, Research School of Pacific Studies, The Australian National Univerity.

FLYNN, CHOI-YEUNG-CHANG. 2003. Intonation in Cantonese. München: Lincom Europa.

GUSSENHOVEN, CARLOS. 2004. The Phonology of Tone and Intonation. Cambridge: Cambridge University Press.

HAYES, BRUCE and LAHIRI, ADITI. 1991. Bengali Intonational Phonology. Natural Language and Linguistics, 9.47-96.

KALLAYANAMIT, SAOVAPAK. 2004. Intonation in Standard Thai: Contours, registers and boundary tones Department of Linguistics, Georgetown University: Ph.D. dissertation.

LADD, ROBERT. 1996. Intonational Phonology: Cambridge University Press. .

LUKSANEEYANAWIN, SUDAPORN. 1983. Intonation in Thai, University of Edinburgh: Ph.D. Dissertation.

PENG, SHU-HUI, CHAN, MAJORIES K. M., TSENG, CHIU-YU, HUANG, TSAN, LEE, OK JOO and BECKMAN, MARY E. 2005. Towards a Pan-Mandarin system for prosodic transcription. Prosodic Typology: The Phonology of Intonation and Phrasing, 230-70. New York: Oxford University Press.