ON THE HISTORY OF TONE-MARKING IN ASIAN LANGUAGES

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When was phonemic tone first regularly marked?¹

Tone as a contrastive linguistic category has received little treatment in standard general works dealing with linguistic historiography. Such works in Western languages have largely ignored the question - "how has explicit awareness of phonemic tone arisen?" The related orthographic questions of when, and under what conditions, phonemic tone-marking may have originated have similarly received scant attention in standard works dealing with the history of the world's writing systems.² Volumes have been written on how consonants and vowels came to be be represented in writing, but the history of tone-marking remains an obscure area.

It is not so surprising then to find that a significant Thai orthographic milestone, the Sukhothai tone-marking system, is almost totally ignored in general linguistic histories. How strong is the case for the "Lai-su' Thai" system of Sukhothai being the world's first invention of a comprehensive phonemic tone-marking orthography? Do we need to consider other Asian languages before this claim can be fully substantiated?

The purpose of this paper is to raise questions such as these in a preliminary way. Answers must remain speculative. The paper is no more than a look at how phonemic tonal awareness may have developed in relevant Asian languages - in some cases, leading to distinctive tone-marking systems. The tentative conclusion is indeed that Sukhothai Thai should be accorded the honours of seniority for orthographic tone marking. However, the larger objective is to encourage further debate and research on the history of tonal awareness and the development of tonal orthographic representations more generally.

In Part One below, the development of tonal awareness and related marking systems is briefly sketched. A summary historical overview is presented of tonal or tone-like phenomena in Greek, Sanskrit, Chinese, Vietnamese, Mon and Burmese. In Part Two [forthcoming], Middle Korean and Thai are taken up.
PART ONE

Tonal accents in Ancient Greek and Sanskrit

Before turning to tonal languages in East and Southeast Asia, we briefly consider the development of accentual marking in Classical (Ancient) Greek and in Vedic Sanskrit. It is convenient to consider these languages together because

(i) the basic suprasegmental phenomena giving rise to both accentual systems relate back to inherited Indo-European accentual phonology (although developments differ);
(ii) in each case, traditional grammarians described three distinct, but interrelated, accents characterized by different pitch/contour features (high, low and convex);
(iii) accentuation related directly to poetic meters and overt accent marking in the orthography undoubtedly had a normative motivation in the preservation of traditional poetic forms in the face of diachronic sound change.

The consensus of scholarly opinion is that the parent Indo-European language and daughters Vedic Sanskrit and Classical Greek were not "tone languages" in the sense of regularly using contrastive pitch/contour to distinguish all items in the lexicon, but they did distinguish at least three types of accented syllables on the basis of pitch/contour as well as amplitude/intensity. Accent in these languages was partly predictable from syllabic length, which was in turn a function both of vowel quality and certain consonantal patterns. Contoured tonal accents (śvarita in Sanskrit, circumflex in Greek) could arise through regular processes of syllabic contraction.3

The three Greek accents, acute (') , grave (\`) and circumflex (^) , were originally perceived in musical terms by contemporary linguistic scholars. The same terms for music and speech were used: τόνος tonos "tone" (from the root "to stretch", referring to strings of instruments), ὀξεῖα okseia "sharp, high" , βαρεῖα bareia "low, deep".4 For at least two hundred-year period c. 400-200 B.C. there was scholarly recognition and discussion of these accents, but no surviving orthographic indication.

Although some Greek inscriptions during this period may have had indications of musical pitch values for sung texts,5 the first systematic use of explicit marks to designate the accentual categories for Greek seems to

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have started at Alexandria about 260 B.C. and is traditionally associated with the name of Aristophanes of Byzantium.

Probably by that time, at least in outlying parts of the Greek-speaking area, the earlier pitch/contour accentual values were giving way to a stress-based system. The accent-marking system may well have been introduced to teach foreigners (including Romans) "proper" pronunciation. Grammarians such as Dionysius Thrax (2-1st century B.C.) continued to describe the three accents in musical terms, but such statements may have been prescriptive for rhetorical oratory and poetic recitation rather than descriptive of actual speech.

Although the grammar of Dionysius Thrax remained definitive for centuries and the Alexandrine system of accent marking was understood, expounded and transmitted by later grammarians, for nearly one thousand years accent marks were only rarely and sporadically used in practice. In early surviving papyri — texts which were often used for economic or personal purposes rather than for literary or liturgical ones — accents seem to have been used mostly to resolve ambiguities. Only gradually, through the Middle Ages, did the Alexandrine system become standard in practice. By the 7th century A.D. it is clearly the norm.

Turning to Sanskrit, we find that there clearly was awareness on the part of language scholars of the pitch-accent system of Vedic Sanskrit. The Astadhyayi of Panini (c. 400 B.C.) gives full treatment of three Vedic accents: high, low and falling (udatta, anudatta and svarita).

The early history of Indic writing systems is still rather controversial, but in any case, Indic scripts in general do not indicate accentuation. An exception is in Vedic manuscripts. Rg-Veda texts regularly indicate svarita accent with a superscript stroke (quite like the tone marker mai-ek in Thai) and other accents with subscript strokes. Accents are often in red.

The example to the left includes the musical interpretation of Haug (1886:15): note the lower-pitched anudatta syllable kan-, marked with subscript bar, followed by the falling svarita syllable -yá.

The Texts of the Samaveda have a more elaborate system of superscript numerals to show musical pitch, which is probably in a complex relationship with lexical accent. Unfortunately the antiquity of these accent-marking systems cannot be established with certainty — nor indeed can the writing down of Vedic texts in general.
The motivation for indicating accents explicitly in Vedic texts may have been similar to the Greek case. Suprasegmental features that were no longer a natural feature of oral speech, due to sound change or language contact, needed to be preserved through orthographic means.

Tonal awareness in Chinese and Vietnamese

As far as can be determined on the basis of surviving records, Chinese represents the first instance of the tones of a fully tonal language being recognized and analyzed. Chen Yin-keh (1941) summarizes the traditional account of the circumstances under which the recognition of tones occurred. His description is worth quoting in full:14

The ju or abrupt tone of the Chinese language was easier to define. The ping, shang and chu tones were, however, defined in emulation of the three tones which were based on the ancient Indian work (known in Chinese translation as Sheng Ming Lun (Theory of Phonetics) and used in the Chi and Liang Dynasties to intone the prose part of the Buddhist sutras. This is how the Theory of Four Tones of the Chinese language came to be defined. When the tones used in intoning the prose part of Buddhist sutras were adopted in the writing of the ornamental style of Chinese prose, the Theory of Four Tones gained universal acceptance. On the twentieth day of the second month in the seventh year of Yung Ming (A.D. 489), Tse Liang, Prince of Ching Ling, called a conference of Buddhist monks at his palace in the capital to differentiate and define the tones of the Chinese language for reading Buddhist sutras and chanting the verses contained therein. This was a most important occasion.

According to this text it would seem that through Buddhist activity in China the grammatical analyses of the Indian grammarians came to be known there. In particular, understanding of the three Sanskrit tonal accents mentioned in the preceding section appear to have played a critical role in the recognition and analysis of the Chinese tonal system of that period.

According to this traditional account the initial impetus for Chinese tonal awareness would have involved the transmission and rendition of Sanskrit Buddhist texts — i.e. a language contact or cross-language impetus. In the following centuries however the concern with tone came to characterize much indigenous Chinese literary activity. Poets and others of the literati class must have had a full comprehension of tonal distinctions, since regulation of tones was in important feature in much Tang- and Sung- and Yuan-dynasty verse