FACTORs AND THEIR FUNCTIONS IN THAI

TONAL ANALYSIS

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An attempt to state possible discrete factors in the analysis of basic tones in Thai is bound to make certain initial assumptions. For instance, it will be taken for granted that the Thai tonal system resembles that of Chinese and, in a most general sense, that of Burmese, or Vietnamese. It will be taken for granted that the problem of tone in the 'tonal' languages of South East Asia is, at heart, a common one and that disparities such as actually occur in present-day speech are attributable to processes of change not so much in the nature of the basic tones themselves as in their environment within the syllable. A brief explanation of the influences due to syllable environment must be given, of course, but the main point in this paper is to focus attention on the basic, tonal, phonematic units that persist even after the various levels of conditioning due to surrounding 'extra-tonal' factors have been allowed for.

Levels of influence in tonal analysis

(i) At the deepest level of influence there is a dichotomy imposed by syllable-finals. Syllables closing in an unexploded occlusive (-k, -t, -p and -ʔ) constitute a totally different system from that of continuant-final syllables. In the latter case, there are three members of the system that commute in a prosody of tone. This holds true for old Chinese and old Thai. In the former case, stop-finals -- since there is a system of one -- it could be argued that this is not a tone at all since it is non-contrastive. Issue will not be taken here, though, on a terminological point. Suffice it to say that three tones always were (and still are, in a deferred, analytical sense) clear and contrastive in the continuant-final system: these will be the central topic of further enquiries – our 'basic' tones.

(ii) One stage up from the base, we can discern the influence of syllable quantity. In Thai, but not in Chinese, the stop-final syllables usually have their tonal inventory doubled (i.e. pitch now becomes contrastive in a new system of two) by distinguishing short and long quantities by complementary pitch phenomena. In the continuant-final system of three, quantity is phonemic but is not accompanied by special pitch exponents at all. The neatest solution, therefore, is to acknowledge the primacy of syllable length by assigning the distinguishing
feature to the phoneme 'quantity' and to interpret the stop-syllables' pitch exponents as secondary features. Thus, although pitch in stop-final syllables behaves in a 'tonal' manner, it is not the obvious, prime factor in phonemic distinction. Note that we cannot say in these cases that pitch features (the two 'tones') are allophones of quantity since the phone of long vowel or short vowel is not replaced. We can, however, argue the merits of quantity as being the stable and most easily accountable distinguishing feature of an apparently composite phoneme. This becomes clear when comparisons between dialects are undertaken.

Even though the whole problem of analysing stop-final syllables is, by this argument, not central to the issue of basic tones, the natural and analytically justifiable preference for discrete factors (is the syllable short or long?) is symptomatic of linguists' aversion to pitch phenomena, which vary so startlingly from dialect to dialect and which take on the characteristics of a continuum divided into ranges rather than on/off, yes-or-no, type of assessment. Whilst it has become fashionable to reduce all processes to ordered binary oppositions in emulation of the computer, there is no gainsaying the simple truth, that it is easier to work with a limited number of 'hard' factors than to characterize things, e.g. tone classes, by a bundle of pitch-contour graphs representative of dialect and idiolect samples, many of which show only the vaguest resemblances in shapes and levels. More will be said on this point when the general theme of these speculations is set forth.

(iii) The stage of development which is uppermost, because it is demonstrably the most recent in time for both Thai and Chinese, is the displacement of levels of pitch in all tonal phenomena, basic and secondary 'stopped' tones alike. The effect is rather akin to the moving of a kaleidoscope out of focus: the image becomes a multiple one, often with some overlapping which produces what appear to be areas in common. If the images were interpreted as sets, one might be tempted to think that the common areas would yield some common factors, since they were shared between two or more sets. The overlapping images would, in other words, be regarded as Venn diagrams.* A moment's thought, however, will make it clear that the all-important factor is how much the kaleidoscope is moved: this is the actively controlled 'input', whilst the degree of displacement of image is its direct consequence. For tonal displacement, therefore, we might expect to find that the reason

* Venn diagrams, named for the British logician John Venn (1834-1923) who devised them in 1880, are a means of depicting mathematical sets and subsets, a graphical aid in the study of Boolean algebra. (Ed.)
that caused the shift in levels would be more useful in accounting for the actual tonal picture as it is today than a set-diagram style of analysis (superimposition of the pitch-contours of one 'tone' as found in various dialects, for instance). It is commonly held that the reason for the displacement of levels is to be found in a reduction in the inventory of features (consonant types) in syllable-initial prosody. In Thai and Chinese it is the loss of voice from initials (in Chinese usually agreed to have been originally voiced aspiration viz. stop + / h / or / h / alone), the conflation being either with unvoiced aspirates or, as in many dialects of North Thailand and the Shan States, with unvoiced non-aspirates. Of course, other features of initial prosody such as the pre-glottalization of voiced initials, may also have played a part, but this merely adds one more dimension to what is a clear, underlying general statement, namely, that initial phoneme depletion is reflected in increase of tone-level phonemes.

By great good fortune the rules of Thai orthography for 'spelling' these new levels caused by displacement find their traditional expression in the categorizing of all syllable initials as High, Mid and Low class consonants. It is also interesting to speculate that the choice of terms to describe these classes must originally have had some mnemonic value, High class consonants presumably yielding a 'high' band in pitch, Mid a 'mid' and Low a 'low' band, but both time (successive developments within a given dialect tending away from neat correspondences for rules laid down at an earlier stage) and geography (the whereabouts of the dialect upon which these early correspondences were based) have rendered the names of these consonant classes quite arbitrary today. The procedure, however, of spelling tones by a combination of consonant class and tone class-mark is certainly not arbitrary. It reflects the stages of which we have been speaking: the tone class-marks represent our concept of basic tone, and the consonant classes represent the later displacement phenomenon due to loss of distinctive features in the initials, the burden of maintaining these distinctions now being a tonal one.

Theorizing about tones

The following sequence of diagrams shows the steps or strata referred to above in a purely statistical way, indicating the possibilities of tonal items as one passes from stage to stage. The fulfilment of these possibilities in actual tone phenomena, however, is not represented nor even attempted. No language has a one hundred per cent tally between possibilities, probabilities, and actualities. Conflation, attrition, assimilation by analogy, and so forth, are typical forces at work to perturb the calculation of predictable end-product items (i.e. the probabilities are not equally weighted).
Nevertheless, for inclusive, cross-dialect purposes and for the upholding of an argument that all these stages may be set aside from the problems of basic tones, the straightforward mathematical count will be allowed to stand.

<table>
<thead>
<tr>
<th>'Basic' count</th>
<th>Continuant finals</th>
<th>Stop-Finals</th>
<th>Grand total</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>basic</td>
<td></td>
<td>4</td>
</tr>
<tr>
<td>3</td>
<td>long short</td>
<td></td>
<td>5</td>
</tr>
<tr>
<td>High</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Mid</td>
<td></td>
<td>15</td>
</tr>
<tr>
<td>Low</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Diagram I: Continuant and stop finals in Thai

Having come up, as it were, by reasoning through successive stages, can we try to go down -- in reverse -- using the same arguments that tones tend to be derived from other, say crassly segmental features, and break down the basic tone barrier? In other words, can we extrapolate backwards and postulate a 'pre-basic' stage represented thus:

All continuant finals All stop finals

where further factors can be presumed to have existed, non-tonal