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THE DEVELOPMENT OF TAI REGISTER PATTERNS

by Jay Fippinger

In this paper, we shall first summarize the findings of several scholars who have contributed to recent literature describing the history of tone in the Tai languages; we shall then focus on one problem that, to my knowledge, has not yet received sufficient attention: namely the reasons for widely divergent patterns of register development, in view of evidence for consonant-pitch correlation which might lead us to expect greater uniformity within the language family.

Fang-kuei Li and André G. Haudricourt have proposed somewhat different classifications for members of the Tai (or Daic) language family.¹ We shall chart both classifi-

¹Li (1959), pp. 17,18 (treated more fully in Li (1960)); Haudricourt (1966), pp. 52,53.

cations side by side, though it should be understood that the groups do not necessarily correspond exactly:

| <u>Group</u> | <u>Li</u> | <u>Haudricourt</u> | <u>Representative Languages²</u> |
|--------------|--------------|------------------------------|---|
| 1 | Southwestern | Southern, or Thai Proper (a) | Siamese Black Tai Shan Lü Ahom |
| 2 | Central | Southern, or Thai Proper (b) | Tho Lung-chow |
| 3 | | Eastern | Sêk Man Cao-lan Ts'un-lao |
| 4 | Northern | Western, or Dioi | Wu-ming Ts'e-heng T'ien-chow Po-ai |
| 5 | | Northern | Kam-Sui group Be (Hainan) |

²The two authors may use the terms "Tho" and "Lung-chow" in different ways. Haudricourt refers to "Lung-Chou" only as a place name.

The ancient form of Haudricourt's Southern, or Thai Proper group (groups 1 and 2 on the above chart) is referred to by him as a monosyllabic Proto-Thai.³ To my know-

³Haudricourt (1966), p.53.

ledge, a good deal of the Tai historical work to date has concentrated on group 1 languages, and the proto languages thus reconstructed is probably Haudricourt's Proto-Thai (unless group 2 languages would alter the reconstruction). Much of Li's work, on the other hand, involves cross-group comparisons leading back toward Proto-Daic (Proto-Tai). Forms proposed for Proto-Thai may well have existed in the earlier Proto-Daic, but we still must be careful to distinguish between the two. One important distinction, as Haudricourt points out, is the possibility that Proto-Daic is polysyllabic, and that present initial consonants in his Western Group, for example, may have once been intervocalic.⁴ In 1954, Li expressed the opinion that it

⁴Ibid., pp.53,54.

might be a long time before we are certain of the reconstruction of Proto-Daic.⁵

⁵Li (1954), p.379.

The origin of the tones in present-day Tai languages has been described in a variety of ways. Li, for example, speaks of four Proto-Tai (Proto-Daic) tone classes: A, B, and C, plus a special class D for syllables ending in stop consonants -p, -t, or -k, and illustrates their development in languages representing all three of his dialect groups outlined above. He notes that in some, but not all languages, class D is subdivided according to vocalic length.⁶ William Gedney, comparing four dialects

⁶Li (1966).

within Li's Southwestern Group (group 1), traces their tones to an ancient system consisting of three tones on free syllables, plus checked syllables without any tonal distinction, but divided on the basis of vowel length.⁷

⁷Gedney (1964), p.25.

J. Marvin Brown, again restricting himself to dialects within group 1, speaks of five tone phonemes in what we would call Proto-Thai, defined, not by distinction of register or contour, but by the laryngeal phonological component occurring during the final time segment of the syllable. There are four such laryngeal components, the fourth (complete contraction of oblique arytenoids, or glottal catch) being subdivided through combination with a component of length into two secondary components ('shortstop' and 'longstop').⁸ We may chart the systems

⁸Brown (1965), pp.36-38.

described by these three men as follows:

| | <u>Li</u> | <u>Gedney</u> | <u>Brown</u> |
|----------------------------|------------------------|-------------------------------|-------------------------------|
| <u>Scope of comparison</u> | At least groups 1,2,4 | group 1 | group 1 |
| <u>primary tones</u> | 4 | 3 | 5 |
| <u>Categories</u> | A | A or Ø | Ø (whisper) |
| | B | B or 1 | 1 (voicing) |
| | C | C or 2 | 2 (creaky voicing) |
| | D (stopped syl. short) | toneless (checked syl. short) | 4 (glottal catch + length) |
| | D (stopped syl. long) | toneless (checked syl. long) | 3 (glottal catch + shortness) |

A glance at the above chart shows that the three scholars cited are in basic agreement as to the number of categories to be considered, though they may differ in their concept of how many distinct 'tones' are involved. The chart also indicates that the number of

categories is the same, whether one is comparing between branches and tracing back toward Proto-Daic (as in the case of Li), or comparing within group 1 and tracing back toward Proto-Thai.

One basic factor associated with the changes of tones from the proto forms to the present is the phonological nature of the proto initial consonant. Li points out that, while some languages have a three-fold (or even four-fold) division of tone based on as many categories of initial consonants, the only categorization which seems to hold true throughout the entire language family, and presumably has its origins in Proto-Daic, is a division of tones based on the voiced or voiceless nature of the proto initial consonants.⁹ Words with original A

⁹Li (1966), p.88.

tone, for example, were split into two tonal categories, those with voiceless initials assuming a tone A1, and those with voiced initials assuming a contrastive tone A2. Brown, dealing with languages showing a three-fold split, describes the categories of ancient initial consonants in terms of their laryngeal components - aspiration, glottal catch, and voicing. The three initial components acted as factors conditioning register distinction. At first the registers were simply tonal allophones - only the endings were distinctive, as described above. Then part of the contrastive burden shifted from the initials to the tones, and, at least in theory, fifteen tonal categories, combining five endings with three registers, were formed. Coalescences and the rise of contrastive contours helped to bring about more nearly present-day tonal patterns.¹⁰

¹⁰Brown (1965), pp.51-59.

Brown makes the further observation that the changes in initial laryngeal components accompanying the rise of register are part of an "areal change that swept over the Orient about 1000 years ago," whereby, in a wide variety of languages, voiced and voiceless initials influenced tones or vowels in differing ways, giving rise to tonal or other distinctions which in some cases allowed the initials to fall together. He notes that "In Chinese and Vietnamese, as in the Sukhothai branch or Thai, voiced initials caused low tones and aspirate initials high."¹¹

¹¹Ibid., pp.54,62.

Kenneth Gregerson notes that, in the Mon-Khmer languages, which are toneless, vowel register distinctions developed instead. A vowel register commonly characterized by brightness in voice quality, lowering of vowel height, and relatively high pitch is associated with original voiceless initial consonants, whereas a vowel register characterized by breathiness, higher vowels, and lower pitch is associated with earlier voiced consonants. Again we see a correspondence between voiceless initials and ensuing high pitch; between voiced initials and low pitch. One naturally looks for some way in which high pitch is caused by voicelessness, and low pitch by voicing. Gregerson, however, believes that, in cases like these, there is a common underlying cause. He conceives of the tongue root as an articulator, by its advance and retraction causing changes in tongue height, in the shape of the pharyngeal cavity, and in laryngeal configuration, which combine to cause the distinctions in pitch and vowel quality found in Mon-Khmer languages, and which contributed to the degree of voicing in the corresponding earlier consonants.¹²

¹²Gregerson, oral remarks. Discussed in part in Gregerson (1969). Gregerson also draws my attention to an earlier conjecture about the relationship of tongue root position to tone variants in Pike (1967), p.137.

If Gregerson's theory of tongue root articulation is indeed applicable over a broader spectrum of languages, including those showing a correlation between voiced or voiceless consonants and pitch height of following vowels, we are then led to expect a uniform set of correspondences: voiceless consonants associated with relatively high pitch, and voiced consonants with lower pitch. Joseph H. Greenberg notes evidence which would support this from languages of several areas of the world.¹³ However, when we attempt

¹³Greenberg (1970), pp.132,133.

to relate these correspondences to the development of the Tai tonal systems, we are faced with a perplexing dilemma: there is considerable divergence in the way in which register patterns developed in the various modern dialects. Lung-chow and Wu-ming, for example, show a clear pattern of high register from original voiceless initials, low register from voiced, just as we would expect. Languages such as Siamese and Chiangmai or Thailand, on the other hand, exhibit a somewhat opposite pattern (though with three-fold classification of consonants). Still another group, including, at least, Black Tai and White Tai, show

mixed patterns in which, though the tones are classified by proto initials, there is no clear correlation at all between class of initials and pitch height.¹⁴

¹⁴Data from Li (1954 and 1966); Brown (1965); Gedney (1964); Donaldson (1963); and Fippinger (1970).

Brown notes an important fact about the way in which the dialects treated in his work are grouped with respect to tonal development. The Sukhothai branch, which produced the dialects spoken in southern Thailand, follows a "normal" pattern of higher register from aspirate initials, lower from voiced (with an intermediate 'glottal' class of consonants). The Yunnan branch, which produced the dialects studied from Laos and northern and central Thailand, is characterized by the opposite pattern, with higher registers tending to predominate with initials derived from original voiced consonants. Brown attempts to show that it is physiologically possible for the initial laryngeal components to produce either pattern of corresponding registers (assuming one modification to his theory).¹⁵ But the question remains: why did the

¹⁵Brown (1965), p.53.

Yunnan branch choose a pattern seemingly divergent from what would be expected?

Some time ago, Li observed that phonological features other than voiced vs. voicelessness - features such as aspiration, vocalic length, glottal stop, and presence of nasals - could also exert influence on the tonal development of various dialects.¹⁶ Greenberg elaborates, con-

¹⁶Li (1948), p.166.

structing a hierarchy of consonant types, arranged on the basis of their tone-lowering effect relative to one another in Southeast Asian languages. He goes on to note, for example, cases in Africa in which non-breathy voiced sonorants do not pattern like voiced obstruents.¹⁷

¹⁷Greenberg (1970), p.133.

Armed with such information, we may then proceed to search for differences between the two major branches in Thailand which show opposite patterns of register develop-

INITIAL VL GLOTTALS (con.)

| <u>PT</u> | <u>Sukhothai</u> | <u>Yunnan</u> |
|-----------------|------------------|----------------|
| +kw | kw | kw |
| +kl | kl | kl |
| +ʔ _m | ʔ _m | ʔ _m |
| +ʔ _n | ʔ _n | ʔ _n |
| +ʔ _ñ | ʔ _j | ʔ _ñ |

Immediately we notice two blocks of consonants, one within the voiceless aspirate set, the other within the voiced set, in which Sukhothai remained conservative while Yunnan innovated. Now we might generally assume that these changes took place only after register distinctions were fully developed to take the contrastive load given up by the merging Yunnan consonants. But mergers can occur without the immediate presence of a compensating factor, with subsequent loss of distinctions, and there seems no reason why we cannot conceive of Tai register distinctions as being formed simultaneously with, or even subsequent to, the consonant changes in Yunnan, perhaps as a reaction to the loss of distinctions being caused by the changes in Yunnan. In that case, many of the original initial aspirate sounds would, in Yunnan, be voiced at the time Yunnan register distinctions were forming, thus tending to depress the register evolving from this set of sounds. Likewise, those original voiced sounds which had become unvoiced - even aspirated - in Yunnan would favor the development of higher register from that set.

Greenberg's paper contains another generalization about the effect of consonants on the pitch of adjacent vowels; a voiced injective (implosive) stop does not have the same tone-lowering effect as does a normal voiced stop.¹⁸ If we therefore assume that the proto

¹⁸Greenberg (1970), p.132.

voiced stops were actually imploded, at least to a mild degree, and that the implosive quality was lost in Sukhothai but retained in Yunnan, we would then have still another factor favoring the patterns of register development which took place. Admittedly, I have no direct evidence to substantiate this conjecture. Proto voiced stops have become unvoiced in almost all modern dialects,¹⁹

¹⁹Li (1966), p.88.

and probably have left little or no trace of any implosion that may have existed.²⁰ One fact favoring my guess, how-

²⁰Greenberg notes, "The typical injective obstruent is... a voiced stop." (1970), p.124.

ever, is the frequency with which implosion does occur in voiced stops in a variety of modern Southeast Asian languages. In Black Tai, the only Tai language I have studied phonetically, voiced stops have mildly imploded variants, though, as Gedney (1964) notes, these voiced stops are not derived from the proto voiced series. Greenberg notes that in some (Mon-Khmer) languages of Southeast Asia, as well as elsewhere, injectives are the normal variant of voiced stops.²¹

²¹Ibid., p.131.

To summarize: the theory that voiceless consonants are to be associated with relatively high pitch on the following vowel, and voiced consonants with relatively low pitch, is partially substantiated in the case of two dialect branches within Li's Southwestern group of Tai languages which follow opposite patterns of tonal development if we attribute the factors influencing the formation of register, not to the Proto-Thai initial consonants, but to the initial consonants of the primitive dialects of two branches respectively.

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The Tai language family includes languages spoken in Burma, Thailand, Laos, Vietnam, and southern China.

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