THE RELATIONSHIP BETWEEN TONES AND INITIALS IN TAI*

by

FANG-KUEI LI

As early as 1911-1912, Henri Maspero expressed the opinion that the fundamental difference between Chinese and Tai in the phonological system lay in the fact that the Chinese tones had two registers, determined by the voiceless and the voiced nature of the initial consonants, while the Tai languages had three registers, determined also by the initial consonants. This theory is, of course, suggested by the native Siamese grammarians' classification of the initial consonants into three classes: high, middle, and low. The date of formulation of the Siamese system is not known, but Maspero believes that it must go back to the original Tai system because Vietnamese shows traces also of a threefold division of the initials.¹ He also points out there are other languages in the Far East, beside Chinese and Tai, where the registers of the tones are also determined by the initial consonants.

Recently we know more about the tonal system of the Tai dialects particularly through the works of Mary Haas, Søren Egerod, E. J. A. Henderson, J. Marvin Brown, and others.² It may be, therefore, profitable to reexamine the problem and pose a few questions.

* This is a slightly different version of an article by the author published in Chinese in BIHP (Bulletin of the Institute of History and Philology, Academia Sinica), 34 (1962), 31-36.

¹ Cf. Maspero, "Contribution à l'étude du système phonétique des langues Thai", BEFEO, 11 (1911); and especially his "Etudes sur la phonétique historique de la langue annamite", BEFEO, 12 (1912), 88-103, 117-118.

1) To what extent do the Tai languages agree in the threefold classification of the consonants?

2) Can we determine that this system belongs to the Proto-Tai period?

3) Do the three classes of consonants determine the registers of the tones?

We shall select a few dialects to represent the different classifications of the consonants and treat briefly their influence on the development of tones.

The Proto-Tai tone classes are represented here by A, B, C, and D, the last class being a special syllabic type ending in a stop consonant \(-p, -t, \) or \(-k\). In Siamese and its closely related dialects there are words ending in a glottal stop which are counted as belonging to the same D type (known as dead syllables in Siamese), but such words do not go through all dialects, and their existence in the Proto-Tai system is doubtful.

The registers of the modern dialects are designated by numerals whenever possible, 5-high, 4-mid high, 3-mid, 2-mid low, and 1-low. Rising, falling, level tones etc. are indicated by two or three numerals, thus 35-high rising, 53-high falling, 24-mid rising, 42-mid falling, 13-low rising, 31-low falling, 55-high level, 33-mid level, 11-low level, 453-high rise-fall, etc.

1. The two-fold division of the initial consonants is represented here by the Lungchow dialect.\(^3\) Many dialects in the northern part of Vietnam, in the southwestern part of Kwangsi, and in the southern part of Yunnan, as well as the Shan dialects show this type. The initials are classified according to whether they come from the Proto-Tai voiceless or voiced consonants. The four Proto-Tai tones are then theoretically split into eight tones. However, in some dialects there is a coalescence of some tones, and the tones developed from class D can usually be assigned to other tones.

<table>
<thead>
<tr>
<th></th>
<th>Voiceless</th>
<th>Voiced</th>
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<tbody>
<tr>
<td>A.</td>
<td>33-mid-level</td>
<td>31-low falling</td>
</tr>
<tr>
<td>B.</td>
<td>55-high level</td>
<td>11-low level</td>
</tr>
<tr>
<td>C.</td>
<td>24-mid rising</td>
<td>21-low falling, followed by glottal stop</td>
</tr>
<tr>
<td>D.</td>
<td>55-high level</td>
<td>31-low falling</td>
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</tbody>
</table>


\(^3\) See my monograph, *The Tai dialect of Lungchow* (1940).
“to fall”, phjaak “to expose to the sun”, D2 nuk “bird”, nook “outside”. If we follow the traditional way of classifying the D class as separate tones, we have here exactly eight tones developed from the original four. This is extremely similar to the development of Chinese tones such as in Cantonese.

2. Three-fold division of the initials is well-known on account of the Siamese system. However in Thailand itself, different dialects classify the consonants differently. It would be interesting to observe the different types of the three-fold division.

   a) Standard Siamese, as spoken around the Bangkok region, divides the consonants into three classes: 1. the high consonants consisting of the Proto-Tai voiceless aspirated stops and the voiceless nasals, liquids, and fricatives, 2. the middle class consisting of the Proto-Tai voiceless unaspirated stops and the pre-glottalized consonants as well as the glottal stop, and 3. the low consonants, consisting of all Proto-Tai voiced consonants. The influence of these three types of consonants on the development of tones is as follows,

   \[
   \begin{array}{ccc}
   \text{1. High} & \text{2. Middle} & \text{3. Low} \\
   \text{A.} & 24\text{-rising} & 33\text{-mid level} & 33\text{-mid level} \\
   \text{B.} & 22\text{-low level} & 22\text{-low level} & 41\text{-falling} \\
   \text{C.} & 41\text{-falling} & 41\text{-falling} & 453\text{-high rise-fall} \\
   \text{Ds} & 22\text{-low level} & 22\text{-low level} & 55\text{-high level} \\
   \text{Dl} & 22\text{-low level} & 22\text{-low level} & 41\text{-falling} \\
   \end{array}
   \]


   The three-fold division of the initials actually divides the tones into two groups. The middle consonants normally agree with the high consonants, except in A class where they agree with the low consonants.

   The system as devised by the native grammarians must have used

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4 For the pre-glottalized consonants, see my article, “The hypothesis of a prer-glottalized series of consonants in Primitive Tai”, BIHP, 9 (1947), 147-187.
the terms “high”, “middle”, and “low” to indicate pitch levels, but it does not agree with the modern standard Siamese system. Two possible explanations can be offered, either the old Siamese had a system of pitch levels as represented by these terms or the system was designed for some other dialect and later adapted to the standard Siamese. There is at present a group of southern dialects which seems to agree better with this three-fold system.

b) The dialect of Nakhonsithamarat, as described by Mary Haas, may be taken as an illustration of another type of three-fold division of consonants. Henderson’s description of the Songkhla dialect agrees essentially with Haas’ system, cf. also Brown’s description of these dialects in his unpublished doctor’s dissertation. The division of consonants into three classes is essentially the same as in standard Siamese, but the influence on the development of tones is different.

<table>
<thead>
<tr>
<th></th>
<th>1. High</th>
<th>2. Middle</th>
<th>3. Low</th>
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<tbody>
<tr>
<td>A.</td>
<td>high falling</td>
<td>mid gliding</td>
<td>mid falling</td>
</tr>
<tr>
<td>B.</td>
<td>high falling</td>
<td>mid gliding</td>
<td>rising</td>
</tr>
<tr>
<td>C.</td>
<td>high</td>
<td>mid</td>
<td>low</td>
</tr>
<tr>
<td>Ds</td>
<td>high</td>
<td>rising</td>
<td>low</td>
</tr>
<tr>
<td>Dl</td>
<td>high</td>
<td>mid</td>
<td>rising</td>
</tr>
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</table>


The three-fold development of tones according to the consonant classes would give us theoretically twelve tones. As A and B coalesce in the high and the middle groups, and the tones developed from D can be assigned to other tone classes, we have now only seven tones. The native system of high, middle and low consonants agrees extremely well with the pitch levels of this group of dialects. This enhances the view that the terms high, middle, and low, though applied to the consonants, refer actually to pitch levels of the tones and it is a language like this that serves as the basis for the formulation of the Siamese system, but it would not necessarily be true of the Proto-Tai system which is presumably much earlier.

c) In Thailand there is another dialect, that of Chiengmai, which also divides the consonants into three classes, but in a different way from that of the standard Siamese. The three classes are: 1. the surd class, consisting all the Proto-Tai voiceless consonants, aspirated or unaspirated, 2. the glottal class, consisting of the Proto-Tai pre-glottalized consonants
and the glottal stop, and 3. the voiced class, consisting of all the Proto-
Tai voiced consonants. Examples are taken from Haas, with some
examples lacking.

A. rising mid mid
B. low low falling
C. higher mid higher mid high
Ds rising rising high
Dl low low falling

Examples: A1 maa “dog”, kin “to eat”, A2 bin “to fly”, A3 maa “to
come”, B1 sii “four” kai “chicken”, B2 no example, B3 pco “father”,
C1 haa “five”, kau “nine”, C2 no example, C3 maa “horse”, Ds 1 sip
“ten”, cet “seven”, Ds 2 no example, Ds 3 nok “bird”, Dl 1 siik “to
tear”, pset “eight”, Dl 2 no example, Dl 3 luuk “child”.

The influence on the development of tones and the pattern of their
distribution are quite similar to the standard Siamese, but the consonants
are differently classified.

d) Another dialect which shows the same classification of consonants
as in Chiengmai may be cited, because the influence on the development
of tones is different. This is the dialect of Po-ai on the Yunnan and
Kwangsi border. It is an altogether different dialect from Chiengmai,
belonging to the Northern Tai group.

A. 24- rising 31- falling 55- high level
B. 22- low level 22- low level 31- falling
C. 44- mid-high level 44- mid-high level 33- mid level
Ds. 55- high level 44- mid-high level 44- mid-high level
Dl. 22- low level 22- low level 31- falling

Examples: A1 pii “year”, haau “white”, A2 pa “to get”, min “to fly”,
A3 naa “rice field”, yon “day”, B1 kau “old”, cae “egg”, B2 piim “sa-
tisfied”, maau “young man”, B3 taa “river”, poo “father”, C1 kuu “nine”,

Haas assumes a division of consonants, first, into high, middle, and low as in
standard Siamese, and then a further split of the middle class into two (1M.1 and
1M.2) in Chiengmai. Her 1M.1 class, however, has no observable influence different
from the high class.

See “A tentative classification of Tai dialects” in S. Diamond, *Culture in History*,
theses in honor of Paul Radin (1960), pp. 951-959; “The Jui Dialect of Po-ai; Pho-
nology”, *BIHP*, 28 (1956-7), 551-566; “The Jui dialect of Po-ai and Northern Tai”,
*BIHP*, 29 (1957), 315-322.

In tone class A there is actually a three-fold development of tones according to the initials, while in B, C, and Dl the glottal group merges with the surd group, and in Ds merges with the voiced.

3. The four-fold division of the initials is represented by one dialect, as far as we know, namely the dialect of T’ien-pao in the western part of Kwangsi. The four groups of consonants are: 1) the surd group, consisting of all Proto-Tai unaspirated voiceless stops and voiceless nasals, liquids, and fricatives, 2) the aspirated groups, consisting of all aspirated stops and h, whether they come from Proto-Tai aspirated or unaspirated stops, 3) the glottal group, consisting of all Proto-Tai pre-glottalized consonants and the glottal stop, and 4) the voiced group, consisting of all Proto-Tai voiced consonants. The influence of these four groups on the development of tones in T’ien-pao is as follows:

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<tbody>
<tr>
<td>A. 353-rise-fall</td>
<td>353-rise-fall</td>
<td>31-low falling</td>
<td>31-low falling</td>
</tr>
<tr>
<td>B. 42-mid falling</td>
<td>33-mid level</td>
<td>33-mid level</td>
<td>33-mid level</td>
</tr>
<tr>
<td>C. 24-mid rising</td>
<td>24-mid rising</td>
<td>24-mid rising</td>
<td>13-low rising</td>
</tr>
<tr>
<td>Ds 45-high rising</td>
<td>45-high rising</td>
<td>45-high rising</td>
<td>33-mid level</td>
</tr>
<tr>
<td>Dl 42-mid falling</td>
<td>33-mid level</td>
<td>33-mid level</td>
<td>33-mid level</td>
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The influence of the four groups of consonants on the tones can be summarized as follows: in A the surd and the aspirated merge, and the glottal and the voiced merge; in B and Dl the aspirated, the glottal, and the voiced merge; and in C and Ds the surd, the aspirated, and the glottal merge. The surd and the voiced never merge.

General observation: From the preceding survey of a number of dialects, it can be seen that the Tai languages do not agree in having a

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For the development of some aspirated consonants in T’ien-pao from unaspirated ones, see “A tentative classification of Tai dialects”, op. cit., p. 956.
three-fold division of the consonants on the basis of their influence on
the development of tones, and that languages having a three-fold division
of consonants do not classify the consonants in the same way. Furthermore closely related dialects such as Chiengmai and Siamese, Lungchow
and T'ienpao, etc. do not agree in the way of classifying the consonants,
while Chiengmai, for instance, agrees rather with the remote dialect Po-ai.

It seems doubtful, therefore, that the three-fold classification can be
traced back to the original Tai system. Particularly, the aspirated class
in T'ienpao includes secondarily developed aspirated consonants, and
seems to be an innovation. Similarly, the high consonants as a class in
Siamese seem to be limited to dialects in Thailand, and may be a dialectal
innovation. It is quite appropriate to make special provisions for the
high consonants as a class in the study of dialects in Thailand, but it
becomes relatively unimportant for the Tai languages as a whole.

What we can say with some certainty is that the distinction between
the voiced and the voiceless consonants seems to prevail in all dialects,
and may be assumed for the Proto-Tai system. The accompanying
feature of register, high for the voiceless and low for the voiced, has some
phonetic basis, but is only a dependent feature. It becomes a distinct
feature only when the voiced consonants become unvoiced as is the case
of stops in practically all dialects, or when the voiceless consonants, such
as the voiceless nasals and liquids, become voiced. The assumption of a
middle register may be justified for the dialects in Thailand, but it is not
a Proto-Tai feature. It is rather difficult to assume four registers for a
dialect like T'ienpao.

The different classifications of consonants in Tai are then empirical
observations extremely useful for the explanation of the development of
tones, but their existence in the Proto-Tai period must be assumed with
cautions, for they may be late as well as dialectal innovations.