

THE RELATIONSHIP BETWEEN TONES AND INITIALS IN TAI*

by

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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.

² Cf. M. Haas, "The tones of four Tai dialects", *BIHP*, 29 (1958), 817-836; S. Egerod, "Essentials of Shan phonology and script", *BIHP*, 29 (1957), 121-129; "Essentials of Khün phonology and script", *Acta Orientalia*, 24 (1959), 123-146; "Studies in Thai dialectology", *Acta Orientalia*, 26 (1961), 43-91; E. J. A. Henderson, "The tones of the Tai Dialect of Songkhla", *BIHP*, 30 (1959), 233-235; J. M. Brown, "From Ancient Thai to modern dialects (unpubl. thesis), 1962. - For the general discussion of the tone-system in the Tai languages, see K. Wulff, *Chinesisch und Tai* (1934); A. G. Haudricourt, "Les phonèmes et le vocabulaire du Thai commun", *JA*, 236 (1948), 197-238; "De l'origine des tons en vietnamien", *JA*, 242 (1954), 69-82; "Bipartition et tripartition des tons dans quelques langues d'Extrême Orient", *BSLP* 56 (1961), 163-180; and Tatsuo Nishida, "Tonemata Historica", *Gengo Kenkyo*, 25 (1954), 19-46.

- 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.

	1. <i>Voiceless</i>	2. <i>Voiced</i>
A.	33-mid-level	31-low falling
B.	55-high level	11-low level
C.	24-mid rising	21-low falling, followed by glottal stop
D.	55-high level	31-low falling

Examples: A1 *pīi* "year", *khaai* "to sell", A2 *kīn* "person", *naa* "rice field", B1 *kau* "old", *mai* "new", B2 *taa* "river", *mee* "mother", C1 *naa* "face", *khaa* "to kill", C2 *toonp* "stomach", *luu?* "to know", D1 *tuk*

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,⁴ 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,

	1. <i>High</i>	2. <i>Middle</i>	3. <i>Low</i>
A.	24-rising	33-mid level	33-mid level
B.	22-low level	22-low level	41-falling
C.	41-falling	41-falling	453-high rise-fall
Ds	22-low level	22-low level	55-high level
Dl	22-low level	22-low level	41-falling

Examples: A1 *khaau* "white", *maa* "dog", A2 *pīi* "year", *Pau* "to get", A3 *naa* "rice field," *khon* "person", B1 *mai* "new", *thaa* "charcoal", B2 *kau* "old", *Pim* "satisfied", B3 *thaa* "dock", *mee* "mother", C1 *khaa* "to kill", *naa* "face", C2 *kau* "nine", *dai* "to get", C3 *maa* "horse", *thooj* "stomach". The D class words develop differently according to vocalic lengths. They are divided into two subclasses: Ds with a short vowel, and Dl with a long vowel or diphthong. Ds 1 *phak* "vegetable", Ds 2 *tok* "to fall", Ds 3 *nok* "bird", Dl 1 *maak* "betel nut", Dl 2 *taak* "to expose to the sun", D3 *nook* "out side".

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

⁴ For the pre-glottalized consonants, see my article, "The hypothesis of a pre-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.

	1. <i>High</i>	2. <i>Middle</i>	3. <i>Low</i>
A.	high falling	mid gliding	mid falling
B.	high falling	mid gliding	rising
C.	high	mid	low
Ds	high	rising	low
Dl	high	mid	rising

Examples: A1 *maa* "dog", A2 *kin* "to eat", A3 *maa* "to come", B1 *sii* "four", B2 *kai* "chicken", B3 *phəw* "father", C1 *haa* "five", C2 *kaau* "nine", C3 *maa* "horse", Ds 1 *sip* "ten", Ds 2 *cet* "seven", Ds 3 *nək* "bird", Dl 1 *chiik* "to tear", Dl 2 *pɛet* "eight", Dl 3 *luuk* "child".

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 Chiangmai, 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.⁵ Examples are taken from Haas, with some examples lacking.

	1. <i>Surd</i>	2. <i>Glottal</i>	3. <i>Voiced</i>
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 *pɔɔ* "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", *pɛɛt* "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 Chiangmai 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 Chiangmai, belonging to the Northern Tai group.⁶

	1. <i>Surd</i>	2. <i>Glottal</i>	3. <i>Voiced</i>
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 *Pau* "to get", *min* "to fly", A3 *naa* "rice field", *ɲɔn* "day", B1 *kau* "old", *cai* "egg", B2 *Pim* "satisfied", *maau* "young man", B3 *taa* "river", *poo* "father", C1 *kuu* "nine",

⁵ 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 Chiangmai. Her 1M.1 class, however, has no observable influence different from the high class.

⁶ See "A tentative classification of Tai dialects" in S. Diamond, *Culture in History*, essays in honor of Paul Radin (1960), pp. 951-959; "The Jui Dialect of Po-ai; Phonology", *BIHP*, 28 (1956-7), 551-566; "The Jui dialect of Po-ai and Northern Tai", *BIHP*, 29 (1957), 315-322.

kaa "to kill", C2 *Paa* "to open the mouth", *maan* "village", C3 *lam* "water", *tuy* "stomach", Ds 1 *tək* "to fall", *pjak* "vegetable", Ds 2 *nip* "raw", Ds 3 *lək* "bird", D1 1 *paak* "mouth", D1 2 *jiik* "hungry", D1 3 *lɪt* "blood".

In tone class A there is actually a three-fold development of tones according to the initials, while in B, C, and D1 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,⁷ 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:

	1. <i>Surd</i>	2. <i>Aspirated</i>	3. <i>Glottal</i>	4. <i>Voiced</i>
A.	353-rise-fall	353-rise-fall	31-low falling	31-low falling
B.	42-mid falling	33-mid level	33-mid level	33-mid level
C.	24-mid rising	24-mid rising	24-mid rising	13-low rising
Ds	45-high rising	45-high rising	45-high rising	33-mid level
D1	42-mid falling	33-mid level	33-mid level	33-mid level

Examples: A1 *pei* "year", A2 *khaau* "white", A3 *Pdai* "good", A4 *naa* "rice field", B1 *kau* "old", B2 *thaa* "charcoal", B3 *Pəm* "satisfied", B4 *mee* "mother", C1 *naa* "face", C2 *khaa* "to kill", C3 *Pdai* "to get", C4 *tooy* "stomach", Ds 1 *toP* "to fall", Ds 2 *phjaP* "vegetable", Ds 3 *Pəp* "raw", Ds 4 *noP* "bird", D1 1 *peet* "eight", D1 2 *phyyp* "yam", D1 3 *Pduut* "hot", D1 4 *luut* "blood".

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 D1 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

⁷ 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 caution, for they may be late as well as dialectal innovations.