EVIDENCE FOR ANOTHER SERIES OF
VOICED INITIALS IN PROTO-TAI

Languages and dialects of the Northern branch of the Tai family are spoken in southern China, in the southern part of Kweichow and adjacent parts of Kwangsi to the east and Yunnan to the west, with a small spillover across the border into Vietnam. Saek, spoken much farther south, in a few villages near Nakhon Phanom in northeastern Thailand, and across the river in Laos in a few villages near Tha Khek, is an outlying member of the Northern Tai group.

Over a considerable extent of the Northern Tai domain the speakers call themselves and their language by a name which has been variously romanized as Dioi, I, Yi, Giay, Jui, Yay. These variants reflect dialectal differences in the pronunciation of the name, as well as differing practices in romanization. The Chinese term Chuang is applied to some varieties of Northern Tai, but also includes some non-Northern Tai dialects.

Data are available on a good many varieties of Northern Tai speech. The following are the most useful sources of information. The earliest important publication on a Northern Tai language, still much used, was a Dioi dictionary of a dialect in southern Kweichow by French missionaries (Esquirol and Williatte 1908). We are indebted to Fang-kuei Li for a fine monograph on the dialect of Wu-ming, at the eastern extreme of the Northern Tai area (Li 1956). The Chinese have produced a Chuang-Chinese dictionary, based on the Wu-ming dialect (Kwangsi People's Press 1960),[1] and for several years a Chuang edition of the magazine *China Pictorial* was published in the dialect and the system of romanization of this dictionary. F. K. Li has published articles dealing with the dialect of Po-ai, in eastern Yunnan (Li 1957a, 1957b), and his recent *Handbook of Comparative Tai* (Li 1977) contains copious Po-ai data. The Chinese have described the dialects of forty geographical points in southern Kweichow, with tables giving the local forms for some hundreds of words (Chinese Academy of Sciences 1959). I have done fieldwork on Yay, a form of Northern Tai speech spoken in the neighborhood of Lao Kai in Vietnam near the Chinese border (Gedney 1965). Saek has been studied by A. G. Haudricourt (Haudricourt 1958, 1963) and by myself (Gedney 1970a).

Except for such outliers as Saek, the Northern Tai area may well be a single dialect continuum, without sharp internal linguistic boundaries. Available sources, however, provide us only with data from various scattered points or small areas, so that at

the present stage of our knowledge we are forced to deal with these as different languages or dialects.

The term Northern Tai, or the Northern branch of the Tai family, is F. K. Li's; other scholars have sometimes used other terms, but we will follow Li's usage. In Li's view, the Tai family has three main branches, this Northern one and two others, which he designates Central (spoken in the extreme northeast of Vietnam and adjacent areas across the Chinese border in Kwangsi) and Southwestern (including the well-known Tai languages of northwestern Vietnam, Laos, Thailand, Burma, Assam, and parts of Yunnan).

Since we will be mainly concerned in this paper with differences between Northern Tai and the rest of the Tai family (Li's Central and Southwestern branches taken together), we will for the sake of convenience use the term Southern Tai to refer to all the non-Northern Tai languages. This cover term, Southern Tai, for Central and Southwestern Tai may be regarded by some as awkward, ambiguous, or mislead-ing; they are asked to keep in mind that it is intended only for temporary use in discussing the matters with which we are dealing.

Northern Tai languages, as scholars have long recognized, exhibit many striking differences from Southern Tai, some lexical and some phonological. Lexical differences involve quite a large number of items for which the Northern Tai languages all use one word, but the Southern Tai languages another. Phonological differences are many, involving especi-ally vowels and tones. The vocalic nuclei in Northern Tai, which do not correspond neatly with

those found in the same words in Southern Tai, have been the main reason that scholars have had more trouble trying to reconstruct a satisfactory vowel system for Proto-Tai than they have had in dealing with the consonants and tones.

Tonal differences between Northern and Southern Tai are of various sorts. In some cases it is necessary to reconstruct different tones in the parent language for the same word in Northern and Southern Tai. In other cases we must infer different original initial consonants, resulting in different tones in the modern languages of the two branches.
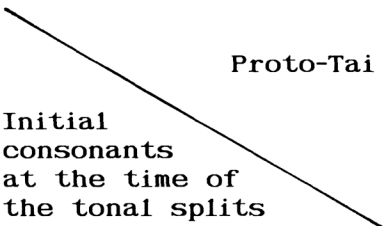
It is generally believed that the parent language of the Tai family, Proto-Tai, had a system of three tones on syllables ending in a voiced sound (vowel, semivowel, or nasal), designated by F. K. Li as A B C, and, on syllables ending with a voiceless sound (*p t k*), a fourth tone, D, which perhaps should be regarded as not a tone at all, since in syllables of this type there was no tonal differentiation. In the course of time, some centuries after the break-up of the parent language and geographical dispersal of the various branches, a set of tonal splits occurred (in Tai as well as in other tonal language families of the Far East and Southeast Asia), each split conditioned by phonetic features of the initial consonants. Each Tai language or dialect made different splits, and these differences have been of the greatest value to scholars in reconstructing the phonological system of the prehistoric parent language, as well as the phonological history of each language.

It is helpful in studying these matters to draw a chart in which the vertical columns represent the tones of the parent language ABCD (with D divided into DS and DL because in many cases the tonal splits in the D category differed depending upon whether the vocalic nucleus of the syllable was short or long), and the horizontal rows represent the various categories of initial consonants involved in the conditioning of the tonal splits (see chart 1).

The initial consonants in the top horizontal row of chart 1, what I call voiceless friction sounds, include voiceless fricatives such as *f *s *x, aspirated voiceless stops such as *ph *th *kh, and preaspirated (or possibly voiceless) sonorants such as *hm *hn *hr *hl *hw. The initial consonants of the second horizontal row are the four unaspirated voiceless stops *p *t *c *k. The initials of the third row are glottal stop and the preglottalized sounds *ʔb *ʔd *ʔy (reconstructed by some as preglottalized nasals *ʔm *ʔn *ʔɲ). The bottom horizontal row includes all the voiced initial consonants.

A curious feature of this chart is that, when we plot on it the tonal splits for each of the various languages and dialects, we find that this particular order of the horizontal rows, from top to bottom, is always the same for all Tai languages. We appear to have here evidence of some sort of ordering of consonantal types which we do not yet understand. In a paper presented at an earlier Sino-Tibetan conference I called this fixed order a phonological spectrum (Gedney 1970b).

Chart 1

| Proto-Tai tones | | | | | |
Initial consonants at the time of the tonal splits	A	B	C	DS	DL
Voiceless friction sounds					
Voiceless unaspirated stops					
Glottalized					
Voiced					

On this chart we can easily plot the modern tones of any Tai language or dialect so as to show the tonal splits that have taken place, and thus the historical sources of this particular tone system. For example, chart 2 plots the Siamese or standard Central Thai dialect of Thailand.

To cite another illustrative example, chart 3 plots the Po-ai dialect of the Northern Tai branch as described by F. K. Li.[2]

Returning now to the subject of tonal differences or disparities between Northern and Southern Tai, these are found, when viewed in relation to our chart, to be of various kinds. There are a few

Chart 2

A	B	C	DS	DL
5. rising				
	2. low level	3. falling	2. low level	
1. mid level				
	3. falling	4. high		3. falling

Chart 3

A	B	C	DS	DL
1. rising	5. low level	3. mid-high level	2. high level	5. low level
6. falling			3. mid-high level	
2. high level	6. falling	4. mid level		6. falling

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examples in which a word has in the Northern Tai languages a tone in one of the boxes in the top row of the chart, reflecting an original voiceless initial, but has in the Southern languages the tone in the corresponding box of the bottom row, reflecting an original voiced initial, for example, 'to come' (Siamese maa^1). In other cases a different tone in the parent language is indicated, without a difference in initial consonant; for example, the word 'shrimp' (Siamese $kuŋ^3$) falls into the second horizontal row of the chart in all Tai languages, but in the Northern group the tone reflects the Proto-Tai B tone and in the Southern group the C tone (as in Siamese). Conversely, 'older sibling' (Siamese $phii^3$) is in the bottom row in all Tai languages, but in the Northern group it has a tone reflecting the Proto-Tai C tone and in the Southern group the B tone. In 'classifier for animals' (Siamese tua^1) and 'to be, become' (Siamese pen^1) Northern Tai and also Li's Central Tai division have tones reflecting original voiced initials, in the bottom box of the A column, whereas in Southwestern Tai languages (including Siamese) these two words have the tones of the A box in the second row of the chart, indicating original voiceless, unaspirated initials.

In a large number of instances the northern languages have a tone that goes in one box or another in the bottom row of the chart, reflecting an original voiced initial, but the Southern languages have a tone that goes in the corresponding box in the top row, reflecting an original initial in the "voiceless friction sound" category. It is this kind of

discrepancy for which an explanation will be proposed in this paper. Examples of this kind of disparity between Northern and Southern Tai are especially numerous; a count of all known examples of tonal disagreement between Northern and Southern Tai would probably show that there are more of this type than of all other types, such as those mentioned in the preceding paragraph, combined.

When the examples of this type of discrepancy between Northern and Southern Tai, in which Northern Tai has the word in one of the boxes of the bottom row of the chart but Southern Tai has the same word in the corresponding box of the top row, are collected and separated from all examples of other types of discrepancy, the striking fact emerges that only certain types of sounds are involved, all of them obstruents (stops and fricatives), and only a limited number of these, which in the course of our analysis we will find to be six, three stops and three fricatives. No examples are known involving sounds of other types such as sonorants (nasals, liquids, or semivowels),[3] in spite of the fact that sounds of these other types also occur in both the top and bottom rows of the chart. This significant restriction has, so far as we know, never before been noticed.

Our hypothesis will require us to reconstruct a new series of voiced initial consonants for Proto-Tai. For temporary use, until we feel more certain of the phonetic nature of these six consonants, we propose to use capital letters to represent them. For the three stops we will use the capital letter

symbols *B, *D, and *G.   For the three fricatives we
will use the capital letter symbols *V, *Z, and *ɣ.[4]
Our theory is that the Proto-language had these
sounds in addition to the other voiced initials that
scholars have assumed previously.   Then, at some time
before the tonal splits occurred throughout the Tai-
speaking area, these six consonants must have fallen
together in the Northern branch with the other voiced
obstruents, and in the Southern branch with the
corresponding voiceless initials in the top row of
our chart.

　　If the fact, noted earlier, that the fixed
ordering of the horizontal rows in our chart is of
some significance, then we are struck by the fact
that this newly proposed series of voiced consonants
in a sense completes the chart, that is, it connects
the bottom row of the chart with the top row, so that
we must now view the chart as a cylinder, formed by
rolling the chart back so as to connect the bottom
with the top.

　　We will now deal with the known examples.   Most
of these have been cited previously in the literature
as examples of tonal disagreement between Northern
and what we are calling Southern Tai.   A few examples
are new.   Further search will no doubt turn up addi-
tional examples.   In all our examples the Northern
forms fall into the boxes of the bottom row of the
chart.   The modern tones in this bottom row for the
Northern languages cited are as follows.

	A	B	C	DS	DL
Yay	4	5	6	1	5
Saek	4	5	6	6	5
Po-ai	2	6	4	3	3
Wu-ming	2	6	4	6	6
Pu-yi	2	6	4	8	8

The Southern forms, on the other hand, fall into the corresponding boxes of the top row of the chart. The modern tones in the top row for the Southern languages cited are as follows.

Siamese	5	2	3	2	2
White Tai	1	2	3	2	2
Lungming	1	2	3	3	2
Lungchow	1	5	3	5	5

Yay tones: 1 level, slightly lower than mid, 4 high, with a slight rise and fall toward the end, 5 falling, 6 higher than mid, with a slight rise toward the end (Gedney 1965, 181).

Saek tones: 4 high rising-falling, 5 high falling, 6 mid level, with slight fall, and glottalized (Gedney 1970a, 72).

Po-ai tones: 2 high level, 3 mid-high level, 4 mid level, 6 falling (Li 1954, 370-71).

Wu-ming tones: 2 low falling, 4 high falling, 6 low rising (Li 1954, 370).

Pu-yi tones are numbered uniformly, but vary phonetically among the forty Pu-yi dialects. At point 1, for example, they are: 2 mid falling, 4 high falling, 6 low level, 8 mid falling. (Some Pu-yi

dialects show tonal differentiation between DS and DL in the boxes of the bottom row; see Chinese Academy of Sciences 1959).

Siamese tones: 2 low level, 3 falling, glottalized, 5 rising.

White Tai tones: 1 level, slightly lower than mid, 2 high rising, 3 low rising, glottalized (Gedney 1964).

Lungming tones: 1 high level, 2 high rising, 3 mid level, glottalized (Gedney, field notes).

Lungchow tones: 1 mid level, 3 high level, 5 rising from mid-low to mid-high (Li 1977, 11).

Yay, Saek, White Tai, and Lungming data are from my own field notes. Po-ai, Wu-ming, and Lungchow data are from F. K. Li's publications. Pu-yi data are from Chinese Academy of Sciences 1959. Siamese data are common knowledge.

I have taken the liberty of retranscribing the data, that is, I have made some substitutions of symbols in order to facilitate comparison of forms.

Language names are abbreviated as follows: Y = Yay, Sk = Saek, PA = Po-ai, WM = Wu-ming, PY = Pu-yi, Si = Siamese, WT = White Tai, LM = Lungming, LC = Lungchow.

Examples of *B

C column:

'person; male'. Northern languages: Y puu^6, Sk $phuu^6$, PA puu^4, PY puu^4, diphthongized to $pəw^4$ in a few dialects (PY point 31 $pəw^3$ and point 36 puu^3 are curious and doubtful; they show a Northern-like

initial and a Southern-like tone). Southern lan-
guages: Si, WT $phuu^3$, LM $phow^3$. LC (Li 1977, 37) has
two forms, one regular $phuu^3$ and the other puu^3,
showing a Southern-like tone and a Northern-like
initial.[5]

'cloth, clothing' (Li 1977, 64) is a question-
able example. Northern forms are in the bottom box
of the B column, and always mean 'shirt, upper
garment'. Southern forms are always in the top box
of the C column and usually mean 'cloth'. Northern
languages: Y $pɨa^5$, Sk $phia^5$, PA $pɨɨ^6$. Southern
languages: Si, WT $phaa^3$.

These two examples of *B are included by Li in
his *Handbook* (Li 1977, 64) under Proto-Tai initial
*ph, where he comments, "An alternation of PT *ph-
and PT *b- must be assumed for these items."

Examples of *D

A column:
'to arrive, reach'. Northern languages: Y $taŋ^4$,
Sk $thaŋ^4$, PA, WM, PY (all forty points) $taŋ^2$.
Southern languages: Si $thɨŋ^5$, WT, LC $thɨŋ^1$, LM $thəŋ^1$.
The tones in the Mak-Sui-Kam group of languages
reflect an original voiceless initial (Li 1965,
162-63).
'pond'. Northern languages: Y tam^4, PA tam^2, PY
tam^2 (at three points $taŋ^2$). Southern languages: LM
$thom^1$, LC $thum^1$. The tones in the Mak-Sui-Kam group
of languages reflect an original voiceless initial
(Li 1965, 162-63).
'to hold, carry'. Northern languages: Y $tɨɨ^4$,

Sk *thɨɨ*^{1}, PA *tɨɨ*^{2}, WM *tay*^{2}. Southern languages: Si *thɨɨ*^{5}, LM *thəy*^{1}, LC *thɨɨ*^{1}. WT has a form *tɨɨ*^{4}, which is Northern-like in both tone and initial. The Mak-Sui-Kam forms reflect an original voiced initial (Li 1965, 164-65).

'sugar'. Northern languages: Y *tɨaŋ*^{4}, PA *tɨɨŋ*^{2}, PY (with various vocalic nuclei but always the expected tone) *tɨɨŋ*^{2}, *tiiŋ*^{2}, *teŋ*^{2}, *tɨŋ*^{2}, and so on. Southern languages: LM, LC *thɨɨŋ*^{1}. Mak-Sui-Kam forms reflect an original voiced initial (for Mak, Li 1948, 66; for T'en, Li 1968, 461).

'line, row, strip'. Northern languages: PA *teew*^{2}, PY *tew*^{2}, *tiaw*^{2}, and various other forms, all with tone 2. Saek has *theew*^{2} with a Southern-like tone, perhaps a loanword from Lao. Southern languages: Si *theew*^{5}. LM *teew*^{4} and LC *teew*^{2} have Northern-like tones and initials. T'en, in the Mak-Sui-Kam group, has the tone that reflects an original voiced initial (Li 1968, 467).

'field hut'. Northern languages: Sk *thiaŋ*^{4}. Dioi *tiaŋ*^{2} has the expected Northern tone. Southern languages: Si (Northeastern dialect) *thiaŋ*^{5}.

B column:

'bean'. Northern languages: T *tua*^{5}, Sk *thua*^{5}, PA, WM *tuu*^{6}, PY *twɨa*^{6} (and various other forms, all with tone 6). Southern languages: Si *thua*^{2}, WT *thoo*^{2}, LM *thuu*^{2}, LC *thuu*^{5}. Mak-Sui-Kam forms reflect an original voiced initial (Li 1965, 170-71).

'closely spaced, densely packed'. Northern languages: Y *tii*^{5}, Sk *thii*^{5}, PA *tii*^{6}, WM *toy*^{6}, PY *tii*^{6} (diphthongized to *tey*^{6} at some points).

Southern languages: Si, WT *thii*^{2}, LM *thay*^{2}, LC *thii*^{5}. Mak-Sui-Kam forms reflect an original voiced initial (Li 1965, 170-71).

'forest; wild'. Northern languages: Y *tɨan*^{5}, Sk *thual*^{5}, PA *tɨin*^{6}, WM *tɨan*^{6}. Southern languages: Si *thɨan*^{2}, WT *thən*^{2}, LM *thɨɨŋ*^{2}, LC *thɨɨn*^{5}.

'chopsticks'. Northern languages: Y *tɨi*^{5}, Sk *thɨi*, *thuu*^{5}, PA *tɨi*^{6}, PY *tɨi*^{6} (*təə*^{6} at some points). Southern languages: WT *thuu*^{2}, LM *thow*^{2}. T'en, in the Mak-Sui-Kam group, has a tone that reflects an original voiced initial (Li 1968, 480).

'to weight or weigh down'. Northern languages: Y *tuaŋ*^{5}. Southern languages: Si *thuaŋ*^{2}.

C column:

'cup, bowl'. Northern languages: Y *tɨay*^{6}, Sk *thooy*^{6}, PA *tuuy*^{4}, PY *tuy*^{4}, *tɨy*^{4}, *tii*^{4} (and other forms, all with tone 4). Southern languages: Si *thuay*^{3}, WT *thoy*^{3}, LM, LC *thuuy*^{3}. The Mak-Sui-Kam forms reflect an original voiced initial (Li 1965, 174-75).

'to flood'. Southern forms are in the top box of the C column, but according to Li (1977, 103) the Northern forms are in the bottom box of the B column (translating his terminology into ours). Northern languages: PA *tum*^{6}. But my data give us Saek *thum*^{6} in the bottom box of the C column, and in Yay two forms with slightly different meanings, *tum*^{5} in the bottom box of the B column and *tum*^{6} in the bottom box of the C column. Southern languages: Si *thuam*^{3}, WT *thom*^{3}, LM, LC *thuum*^{3}. It looks as if we have a perfectly good example of *D* in the C column, with,

however, also a variant in the B column in some Northern languages.

DS column:

'young male (animal)'. Northern languages: Y tak^1, Sk $thak^6$, PA tak^3, WM tak^6, PY tak^8 (and other forms, sometimes with lost or vocalized final consonant and change of tone). Southern languages: Si $th\dot{\imath}k^2$, WT $th\partial k^2$, LM $t\partial k^3$ (with Northern-like initial), LC $t\dot{\imath}k^2$ (with a tone that normally reflects an original voiced initial and a long vocalic nucleus). The Mak-Sui-Kam forms reflect an original voiced initial (Li 1965, 178-79).

'to hit; correct; cheap' (DS column in the Northern languages, usually DL column in the Southern languages). Northern languages: Y $t\dot{\imath}k^1$, Sk $th\dot{\imath}k^6$, PA $t\dot{\imath}k^3$. Southern languages: Si $thuuk^2$, WT $thu?^2$, LM $thok^3$, LC $thuk^5$ (LM and LC in the DS column).

F. K. Li in his *Handbook* lists most of our *D words under Proto-Tai initial *th (Li 1977, 102-3), but remarks that the majority of his *th examples show in the Northern Tai dialects a development not from *th but from *d.

Examples of *G

A column:

'son-in-law'. Northern languages: Y $k\dot{\imath}ay^4$, Sk $khooy^4$, PA $k\dot{\imath}\dot{\imath}y^2$, WM $k\dot{\imath}y^2$, PY $k\dot{\imath}y^2$, koy^2 (and other forms with different vowels but tone 2 at all forty points). Southern languages: Si $kh\partial\partial y^5$, WT $kh\partial y^1$, LM $khuuy^1$, LC $kh\dot{\imath}\dot{\imath}y^1$. With regard to this word, Li

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comments (Li 1977, 198), "Alternation of PT *kh- and *g-."

'eggplant'. Northern languages: Y kia^4, PA kii^2, PY kii^2, kia^2 (and other forms, always with tone 2). Southern languages: Si $-khia^5$, WT $khəə^1$, LM $khii^1$. Again Li (1977, 197-98) notes the alternation between PT *kh and *g. Most Mak-Sui-Kam languages use what seems to be a different word, with original B tone, but Mak has $kəə$ with a tone reflecting original A tone with voiced initial (Li 1948, 41; the Mak form is missing in Li 1965, 168-69), agreeing with Northern Tai.

'ditch, pit'. Northern languages: Y kum^4, Sk $khum^4$, PA, WM kum^2, PY kum^2, kim^2, and so on (always with tone 2). Southern languages: Si $khum^5$, WT, LC $khum^1$, LM $khom^1$. Again Li (1977, 197) notes "alternation of PT *kh- and *g-."

Li compares Po-ai $kooŋ^2$ 'to moan' with Lao $khɔɔŋ$ 'reverberating' (the Lao tone reflecting an original voiceless initial). If this etymology is correct, then this word is another example of *G in the A column.

'right (hand)'. (Perhaps initial *Gw.) Northern languages: Y $kwaa^4$, Sk $khwaa^4$, PA, WM, PY $kwaa^2$. Southern languages: Si $khwaa^5$, WT $xwaa^1$. Some Southern Tai languages have a sibilant initial, for example, LM saa^1, LC $ḷaa^1$. Li (1977, 238) reconstructs *gw- for the northern forms but "khra- (?)" for the Southern dialects. I have myself long believed that the forms with sibilant initial are due to contamination by the word for 'left (hand)' (Siamese $saay^4$). The Mak-Sui-Kam languages show

initial *f-* or *ph-* or *w-* with tones reflecting an original voiceless initial (Li 1965, 162-63).

B column:

    'to ride'. Northern languages; Y *kɨay*^{5}, Sk *khooy*^{5}, PA *kɨɨy*^{6}, WM *kɨy*^{5}, PY *kɨy*^{6}, *koy*^{6} (and other forms, with tone 6 at all forty points). Southern languages: Si *khii*^{2}, WT *khii*^{2}, *khwii*^{2}, LM *khwey*^{2}, LC *khwii*^{5}. The Mak and Sui forms have tones reflecting an original voiced initial. This word is widespread in Southeast Asia (Benedict 1967, 288).

    Li (1977, 194, 197) cites another word, which, if his etymology is correct, would also be a B-column example of **G*: Po-ai *čeew*^{6} (with *k* > *č* before a front vowel) 'to tie the arms behind one's back', which he compares with Nung (a Southern Tai language) *khew* 'to cross the arms', with a tone reflecting an original voiceless initial.

Examples of *V

    This sound apparently fell together with **f* in the Southern languages and with **b* > *p* in the Northern languages, except perhaps in Wu-ming (see 'dust' below).

A column:

    'to sharpen'. Northern languages: PY *pan*^{2} (at about half the forty points, another word used elsewhere), Dioi *pan*^{2}. Southern languages: Si *fon*^{5}, LM *phən*^{1}, LC *phɨn*^{1}. The tone in the Mak-Sui-Kam

languages reflects an original voiced initial (Li
1965, 164-65).

'boil, ulcer'. Northern languages: Y pay^4, Sk
$phay^4$ ('impetigo'), PA PY pay^2. Southern languages:
Si fii^5, WT fii^1, LM $phey^1$.

B column:

'dust'. Y pun^5, Sk $phun^5$, WM fon^5. Southern
languages: Si fun^2, WT fin^2.

'side, shore, near'. Northern languages: PY
$paŋ^6$ ($phaŋ^6$ at one point); Sk has $vaŋ^6$, which may be
an adaptation from Lao. Southern languages: Si, WT
$faŋ^2$, LM $phaŋ^2$.

'side, part, direction'.^{6} Northern languages:
PA, PY $paay^6$, Dioi "pai_1" (Esquirol and Williatte
1908, 364). Southern languages: Si $faay^2$, LM $phaay^2$.

There is another word, which appears to be an
example of *V in the A column but which presents
difficulties. This is the item that Li (1977, 77)
glosses 'to braid; harrow; part of a loom'. Southern
examples are Si fia^5 'part of a loom', LC $phii^1$. For
the Northern languages, Li cites PA fii^2 (with an
initial that disagrees with our other *V words),
refers to a Dioi form without citing it, and says,
"NT forms indicate *v-." But in the Dioi dictionary
(Esquirol and Williatte 1908, 383) I find pia^2 'to
braid', with the initial that we want for *V.
Further evidence must be collected before we can hope
to clarify this matter. At first glance one suspects
that at least two different words may be involved,
with different original initials, which may have
become homophonous in some of the modern languages.

Examples of *Z

A column:

'fifth earthly branch'. Li (1945, 339) has discussed this item, pointing out that the Lü form sii^1 reflects an original voiceless initial, whereas Dioi "chi^2" reflects an original voiced one, and noting the parallel with 'ten' and 'cooked' (see below). Pu-yi has $\check{s}ii^2$, $tsey^2$ (and various other forms, all with tone 2). Egerod (1957, 296) cites the Chieng Mai form sii with rising tone (reflecting an original initial, equivalent to Siamese $*sii^5$, agreeing exactly with the Lü form cited by Li).

The phrase 'late in the morning' is an uncertain example. Southern forms all agree with Si $saay^5$ except that in some dialects the initial is (or reflects an earlier) *sw-; all Southern forms have tones that go in the top box of the A column. The Northern forms have a velar initial, for example, PA $kwaay^2$, with the tone of the bottom box of the A column. Li (1977, 154-55) says, "The NT forms seem to go back to PT *gw-, and may not be directly related." Whether the disagreement in initial can have anything to do with the alternation between velar and sibilant initial in the word for 'right hand' (see above) is doubtful.

C column:

The word 'pole' is cited by Li (1977, 154, 160) as an example in the C column where Southern forms have tones reflecting an original voiceless initial

(his Siamese form is saw^3), but Northern forms a voiced initial, for example, Po-ai $\underset{\circ}{l}aaw^4$. The examples cited show some disagreement in vowel length, and more study is needed for this word.

 'room'. The meaning is usually 'bedroom, enclosed or private room', and in Siamese is specialized to 'toilet'. Southern languages: Si $suam^3$, LM $suum^3$, LC $\underset{\circ}{l}uum^3$. No Northern forms are known, but the Mak-Sui-Kam forms (Li 1965, 174-75) have tones reflecting an original voiced initial; there would seem to be a possibility that Northern forms, if found, would agree with Mak-Sui-Kam, making this word an example of our phenomenon.

DS column:

 'ten'. Northern languages: Y sip^1, Sk sip^6, PA $\check{s}ip^3$, WM $\check{s}ip^6$, PY $\check{s}ip^8$ (and forms with various other sibilant initials and at a few points a different vowel, but tone 8 at all forty points). Southern languages: Si, WT sip^2, LM sip^3, LC $\underset{\circ}{l}ip^5$. The Mak-Sui-Kam forms have tones reflecting an original voiced initial (Li 1965, 178-79). The fact that the tone of this word in Dioi (of the Northern group) reflects an original voiced initial was noted long ago by Wulff (1934, 147).

 'ripe, cooked'. Northern languages: Y suk^1, Sk suk^6, PA $\check{s}uk^3$, PY $\check{s}uk^8$ (and other forms with various sibilant initials, everywhere with tone 8 except where loss of the final k has resulted in transfer to one of the unchecked tones). Southern languages: Si, WT suk^2, LM sok^3, LC $\underset{\circ}{l}uk^5$ or $\check{s}uk^3$ (the latter variant Northern-like). The Mak-Sui-Kam forms have tones

reflecting an original voiced initial (Li 1965, 178-79).

'enemy'. Northern languages: Y sak^1. Southern languages: Si sik^2, WT $sək^2$.

Examples of *ɣ

A column:

'bitter'. Northern languages: Y ham^4, Sk $ɣam^4$, PA ham^2, WM xam^2, PY ham^2 (with initial ɣ or ɦ at some points, tone 2 at all forty points). Southern languages: Si $khom^5$, WT, LC $khum^1$, LM $khom^1$. The Mak-Sui-Kam forms have tones reflecting an original voiceless initial (Li 1965, 164-65).

B column:

'young (chicken), not yet adult'. Northern languages: PA $haaŋ^6$. Southern languages: Si $khiaŋ^2$ ('rather big'), WT $khəŋ^2$, LM $khiiŋ^2$. Li reconstructs *x for the Southern forms, *ɣr for the Northern forms (Li 1977, 209, 213-14). The Mak-Sui-Kam forms have tones reflecting an original voiceless initial.

C column:

'rice'. Northern languages: Y haw^6, Sk $ɣaw^6$, PA haw^4, WM xaw^4, PY haw^4 (with various initials like 'bitter', above). Southern languages: Si $khaaw^3$ (secondarily lengthened), WT, LM, LC $khaw^3$. Among the Mak-Sui-Kam languages, the Mak form reflects an original voiceless initial, the Sui and T'en forms voiced (Li 1965, 174-75).

'excrement'.   Northern languages: Y hay^6, Sk γay^6, PA hay^4, WM xay^4; Pu-yi uses another word, except at point 29, which has our word with the expected tone 4.   Southern languages: Si, WT, LM, LC $khii^3$.   Among the Mak-Sui-Kam languages the tonal situation is exactly as with 'rice', above, but the initials in that group are such as to raise a question as to whether their word is cognate with the Tai word.

DS column:

'to bite'.   Northern languages: Y hap^1, Sk γap^6, PA hap^3, WM xap^6, PY hap^8 (with various initials agreeing with 'bitter' and 'rice', above, and tone 8 at all forty points).   Southern languages: Si, WT $khop^2$, LM $khop^3$; LC has a long vowel, $khoop^5$.

'to dig'.   This word presents problems.   In many languages the forms agree with our other *γ examples, but in other languages the forms are aberrant in tone, or initial, or both, not always in ways that can be explained as a Northern-like form in the Southern area or vice-versa.   Some irregularities, but probably not all, may be explained as the result of contamination by the word 'to scrape' (Siamese $khuut^2$).   Northern languages: Y hut^1, kut^1, Sk $khut^6$ (perhaps old, more likely a late loan from Lao), PA hut^3; PY has initial k (kh at one point), with tone 8 everywhere.   Southern languages: Si, WT $khut^2$, LM $khot^2$, LC kut^2.   The tone in the Mak-Sui-Kam group reflects an original voiced initial (Li 1965, 178-79).

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Finally, the word 'ear' is of special interest. The tones are as with our other A-column examples, for example, in the top box of the A column in Southern languages and in the bottom box in the Northern languages, but the initials are like nothing we have seen so far. Northern languages: Y ria^4, Sk rua^4, PA lii^2, WM rii^2, PY ria^2, ria^2, rii^2, yii^2, and so on (everywhere with tone 2 except rii^1 at point 11). Southern languages: Si huu^5, WT, LC huu^1, LM low^1. Some Kwangsi dialects of the Southern group have initial *khy-*. Li reconstructs *xr* for the Southern languages (Li 1954, 378; 1977, 233), *r* (< *ɣr* [?]) for the Northern (Li 1977, 234). Our hypothesis would obviously lead us to reinterpret this, and reconstruct Proto-Tai *ɣr* as the initial of this word. The tones in the Mak-Sui Kam group reflect an original voiceless initial (Li 1965, 164-65).

Our hypothesis of another series of six voiced initial consonants in Proto-Tai leaves untouched (except for stealing away some of the examples) the previously reconstructed Proto-Tai consonant system. We assume, along with Li and others, that Proto-Tai had voiced consonants *b *d *g *v *z *ɣ contrasting directly with *B *D *G *V *Z *ɣ. The series *b, *d, etc., falls always, in all Tai languages, Northern and Southern, into the boxes of the bottom row of our tonal chart. We assume also that Proto-Tai had voiceless friction sounds *ph *th *kh *f *s *x, which in all Tai languages fall into the boxes of the top row of the chart. Of course, Proto-Tai also had

other initials in both the bottom and top rows of the chart but they are not subject to the kind of alternation we have been studying (if, that is, we reject the only example that has ever been suggested; see note 3), and therefore they are not involved in our hypothesis.

Our reconstruction of two new velars, *G and *ɣ, is of special importance for White Tai, providing an explanation for a puzzling problem in White Tai historical phonology, and the White Tai data as now explained provide, in turn, reinforcement for our hypothesis. White Tai is famous for the distinction it makes between the two voiceless velars kh and x. This distinction has been found also in one variety of Lü and vestigially in Black Tai and in some other Tai dialects located to the west of White Tai. White Tai x occurs both in words whose tone reflects an earlier voiceless initial and in words whose tone reflects an earlier voiced initial, suggesting that modern x goes back to earlier *x and *ɣ, distinct from *kh and *g, respectively. Siamese, at the time its writing system was established in the thirteenth century A.D., apparently also had these fricatives *x and *ɣ distinct from the stops *kh and *g, because Old Siamese had special letters for these two fricatives (Burnay and Coedès 1927).

But the distinction between earlier voiceless *kh and *x, and between voiced *g and *ɣ, which one can posit on the basis of the evidence from White Tai and neighboring dialects and from written Old Siamese, fails to hold up when we try to carry it back to Proto-Tai. The Northern languages sometimes

have a velar and sometimes initial *h* corresponding to Southern velars, and one would like to match the Northern velar/*h* distinction with the White Tai velar stop/velar fricative distinction. Unfortunately nothing along these lines works out; the sets of words in the White Tai group on the one hand and the Northern Tai group on the other fail completely to match. Li, in his *Handbook*, has simply comingled the White Tai *x*-words with the various other velars. Our newly reconstructed velars, **G* and **ɣ*, now clarify this picture beautifully. Clearly, the history of the White Tai velars is as follows.

With tones indicating an earlier voiced initial, Proto-Tai **g* > White Tai *k*, and Proto-Tai **G* and **ɣ* > White Tai *x*. With tones indicating an earlier voiceless initial, Proto-Tai **kh* and **x* > White Tai *x*, and Proto-Tai **G* and **ɣ* > White Tai *kh*. The Proto-Tai velars sorted out in this way give us completely regular reflexes in the Northern Tai group. To present a complete demonstration of this would probably require another full-length paper, but a cursory study of the examples given under "velars" in Li's *Handbook* will show that it is true.

Study of the dozens of examples cited in Li's chapter on velars (Li 1977, 186-219) in the light of this new formulation turns up for White Tai only a couple of apparent exceptions, which now obviously call for reexamination. Actually, Professor Li was on the track of the correct explanation when he pointed out (p. 193) that White Tai has *kh-* "chiefly for words with tone alternations and *x-* for words with no tone alternations."

If our hypothesis of another series of voiced initials is valid, why are there so few examples? One can think of a number of possible reasons. First, perhaps these were complex initials, comparable not to other single initials but to initial clusters of the type dealt with in F. K. Li's well-known 1954 article on consonant clusters (Li 1954). In that case, the number of examples citable for our six sounds is not greatly inferior to that for many of the clusters. The instability of our six sounds would seem to support the notion that they were phonetically complex. Second, there may well have been other words in the parent language having these initials, which are preserved in Northern Tai but not in Southern, or vice-versa. Without evidence from both groups, we cannot distinguish these initials from other voiced obstruents in the Northern languages, or from the initials of the top row of the chart in the Southern languages. Third, there are probably more examples to be found. Fourth, the words we have cited have in the past been included under the other initials. Separating our examples reduces the number of examples for those other sounds and so shrinks the ratio considerably. Finally, for some of our sounds the number of examples is by no means small; for *D, as noted above, there are actually more examples than for *th.

Why do we assume that our newly reconstructed initials were voiced rather than voiceless? This is contrary to the implication in Li's *Handbook*, where these words are invariably listed among the examples cited for voiceless sounds (for example, the *D words

are listed under Proto-Tai *th, not under *d). There has long been a tendency, in considering the various differences between Northern and Southern Tai, to regard the Northern group, which has the disadvantages of being smaller, more remote, and lesser known, as aberrant. It may well be that this attitude is diametrically opposed to the truth in regard to at least some of the differences between Northern and Southern Tai. It seems plausible that the Southern languages, in the course of their southward movement and dispersal over a large area, might have been the more innovative. The Northern group would then, conversely, tend to be the more conservative.

There are a number of reasons for regarding these sounds as voiced. First, some of the words, though by no means all, occur also in Chinese, and in those instances the Chinese forms are said by scholars in Chinese historical linguistics to have had earlier voiced initials in Chinese. Second, change of voiced *B, etc. (whatever the precise phonetic nature of these sounds), to *b, etc., on the one hand, and *ph, etc., on the other, seems more plausible phonetically than to posit some sort of additional voiceless series as the originals. Third, to assume that these sounds were originally voiced, but underwent devoicing in the Southern languages, is in accord with the general tendency of the Tai languages to make devoicing changes with movement southward. Fourth, in a number of cases we find exceptional Northern-like forms in languages of the Southern group, that is, forms in Southern languages

with tones reflecting an original voiced initial. There appear to be very few examples of the opposite phenomenon, that is, an exceptional Southern-like form in a language of the Northern group. Northern-like forms in Southern Tai languages, though sporadic in occurrence, are actually much more numerous than the few examples we have cited might suggest. The implication is that in such cases the word failed for some reason to undergo devoicing of the initial in that *particular Southern language.*

When cognates are found in the languages of the Mak-Sui-Kam group, believed to be most closely related to Tai, it would be gratifying if we were to find regular agreement with our hypothesis of orig-inally voiced consonants in Proto-Tai. Regrettably, the Mak-Sui-Kam languages fail us, as will have been noted in the examples where we have been able to cite the Mak-Sui-Kam evidence. All that this demonstrates is that it cannot have been a simple case of a single voiced series in whatever prehistoric language was the parent of the Tai family, on the one hand, and the Mak-Sui-Kam group on the other, which then remained uniformly voiced in the Tai group and made uniform changes in the Mak-Sui-Kam group. Rather, we are confronted with the necessity for reconstructing a variety of sounds for that remote parent language, which must have undergone various complex changes on either side. This, of course, is not different from the predicament we have been in all along with regard to Tai and Mak-Sui-Kam comparison and reconstruction.

A curious question arises with regard to palatal consonants. There is a tendency for the initial

consonants reconstructed for Proto-Tai (and, to a
lesser degree, for the consonants of the individual
modern languages) to arrange themselves in sets of
four: labial, dental, palatal, and velar, for
example, *p *t *c *k, *b *d *ǰ *g, and the like.
But, in the additional set of voiced stops that we
have now reconstructed there is a labial, a dental,
and a velar, but no palatal, and the set of frica-
tives, however one aligns them with respect to
position of articulation with the set of stops, also
has only three rather than four members. One is
reminded that the palatal category in Proto-Tai is in
other respects somewhat defective. For one thing,
the final stops are three in number, *p *t *k, with
no palatal. And in the initial voiceless aspirated
series, *ph *th *ch *kh, *ch is attested by only a
few examples, most of them questionable or irregular.
On the other hand, such palatal initials as *ǰ and
*ɲ (and, if one reconstructs nasals for the preglot-
talized series, *ʔɲ) are well supported by long lists
of examples. One is tempted to speculate that these
palatal consonants were of secondary origin, perhaps
arising out of clusters. But just why this would
prevent the occurrence of an initial *ǰ, parallel to
our newly reconstructed *B *D *G, and of a fourth
member of our fricative series, is difficult to see.
At the present state of our ignorance about the
relative chronology of these phonological matters it
is perhaps futile to speculate further on this
question.

Can we convert our temporary capital letter
symbols *B *D *G *V *Z *ɣ into something phonetically

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more specfic? For the three stops one is tempted to reconstruct aspirated voiced stops *bh *dh *gh, since one can see how such sounds could easily, on the one hand, have fallen together with the plain voiced stops *b *d *g, and on the other hand with the voiceless aspirated stops *ph *th *kh.[7] When we turn from the three stops to the three fricatives, we must remind ourselves that there is a general principle in historical Tai linguistics that consonants that have behaved alike with respect to the conditioning of tonal changes have always been found to share a phonetic feature. So were the three fricatives also aspirated? This would give us *vh contrasting with *v, *zh contrasting with *z, and *ɣh contrasting with *ɣ. If these aspirated voiced fricatives seem somewhat implausible, we might take refuge in the notion that perhaps they were fortis contrasting with lenis.

Another attraction of a theory of voiced aspirated sounds lies in the failure of the sonorants to participate in our phenomenon; that is, since the language had a series of preaspirated (or perhaps voiceless) sonorants such as *hm (in the top row of the tone chart for all branches of Tai), a separate series of postaspirated sonorants such as *mh would probably have been precluded as being scarcely distinguishable phonetically.

Another possibility, perhaps less attractive except that it is applicable to the fricatives as easily as to the stops, is that these six sounds were preglottalized. In that case they would have simply lost the glottal feature and fallen together with the

plain voiced stops and fricatives on the one hand, and on the other would have fallen together with the voiceless aspirated stops and the voiceless fricatives. Since this would give us a series *ʔb, *ʔd, *ʔg, and so on, we would have to deal somehow with the series of four sounds in the third row from the top in our tonal chart, now reconstructed by most scholars as *ʔb, *ʔd, *ʔy, and ʔ. An obvious solution would be to turn to the suggestion made by some (e.g., Brown 1965) that this series was rather a set of preglottalized nasals, *ʔm, *ʔn, *ʔɲ, and ʔ, which would then be in nice complementary distribution with our newly reconstructed series *b, etc.[8]

The precise phonetic nature of our newly reconstructed series of three stops and three fricatives is, in view of these uncertainties, perhaps best left for further future study and speculation.

A different explanation for the instances of Northern Tai voiced initial vs. Central and Southwestern (what we are calling Southern) Tai voiceless initial has been suggested from time to time by F. K. Li, that is, that in the parent language there was a morphological process of alternation between voiced and voiceless initials, producing doublets. There are a number of problems with this explanation, which was apparently suggested by a similar phenomenon in Chinese. For one thing, there is no discernible consistent functional or semantic distinction correlating with the formal alternation. And, if the parent language had pairs of doublets, why do we so rarely find both forms preserved in any particular language or dialect? For

Northern Tai to show consistently *in* our examples the
voiced initial and Southern Tai the voiceless sug-
gests rather a phonological explanation of the sort
we are seeking in this paper. Li has sometimes also
adduced (for example, on page 39 of the *Handbook*) as
evidence for this morphological process of alterna-
tion pairs of doublets in modern Tai languages,
especially Siamese. These would seem to be another
kettle of fish entirely. They are like the word
pairs or word families that are found in so many lan-
guages, pairs or sets of words sharing some formal
and semantic features and differing in others. Some-
times such sets are the result of direct inheritance
of one form and dialect borrowing for the other, as
in the case of English *shirt* and *skirt*. In other
cases only one or a few of the members of the set
are old inherited forms and the others have arisen
through innovation, as in the case of the famous
English set *flash, flame, flare, flicker,* and so
forth. It is significant that in the pairs of modern
Siamese words cited by Li usually only one member,
and sometimes neither, can be shown to be an old
inherited native word.

　　　Finally, the question arises as to whether the
approach used in this study may hold out any hope of
explaining the other kinds of tonal discrepancy
between Northern and Southern Tai. For some instan-
ces, for example, the original Northern voiceless
initial but voiced Southern initial in the word 'to
come' (Siamese *maa*[1]), one must conclude that we are
dealing with an isolated case which must have
resulted from some sort of accidental change in one

branch or the other. One is reminded that in modern Tai languages the two words represented by Siamese pay^1 'to go' and maa^1 'to come' are often paired in phrases; perhaps the tone of one contaminated the other at a very early period in one branch or the other. Or the explanation may lie in the fact that these two words often occur with weak stress; the word 'to go' is known to have undergone tonal distortion in a number of modern languages, where restressing of a weak-stressed form seems to be the explanation.

But, aside from such cases of isolated words for which the explanation may lie in an accidental irregular change, there are a few groups of words showing Northern/Southern tonal disagreement for which there may be some sort of regular phonological explanation, similar to the explanation we have proposed in this paper. These include a number of words with initial palatals such as Siamese $chaay^1$ 'man', with tones reflecting an original voiced initial in Southern Tai but voiceless in Northern Tai (the opposite situation to the one dealt with in this paper), and another set of words with initial r such as Siamese $rɨa^1$ 'boat', showing the same tonal discrepancy between Northern and Southern Tai as does $chaay^1$ 'man'.

Since the hypothesis that we have proposed in this paper is likely to be regarded as daring, and will surely lead to controversy, it is felt that it is perhaps better to wait for the dust to settle before tackling these other problems.

Notes

1. This dictionary is available to me through the courtesy of André G. Haudricourt, who kindly allowed me to have his copy microfilmed in 1965.

2. My practice in numbering the tones of any Tai language or dialect is to follow the traditional order if one exists, as in the case of Siamese, or the numbering used previously by any scholar, if available, or, as in the case of Po-ai, to number the tones in the order in which they have been listed by a previous scholar, in this case F. K. Li.

3. Various scholars (e.g., Haudricourt 1965, 106; Benedict 1967, 292; and Li 1977, 138, 141) have suggested that Siamese $l\dot{\imath}a\eta^5$ 'yellow' (in the top box of the A column of the chart) and its cognates in other Southern Tai languages are cognate with the Northern Tai word for 'copper, brass', such as Po-ai $luu\eta^2$ (in the bottom box of the A column). (The Northern word is the exact semantic counterpart of Siamese $th\flat\flat\eta^1$.) I believe this etymology is in error, for several reasons. First, the difference in meaning is too great. Second, Siamese $l\dot{\imath}a\eta^5$ and its Southern cognates are not a very strong example to compare with anything in Northern Tai. Many Southern Tai languages lack it, and the meaning is not always 'yellow'. For example, on one occasion a speaker of a Tai dialect in Vietnam called his family into consultation when I asked about this word; after prolonged discussion involving a multicolored rug, the older

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women of the family decided that the word meant 'purple'. Third, the evidence for this particular vowel correspondence between Northern and Southern Tai is not very extensive. Fourth, this single example runs counter to the pattern which, it is hoped, this paper will demonstrate convincingly.

4. It is important that it be understood that these capital letters are temporary labels, not phonetic symbols, and have nothing to do with capital letters such as *G, which others have sometimes used in reconstructing the sounds of Proto-Tai.

5. This word requires further study. It often has two meanings, 'person' and 'male', and sometimes two forms. One wonders whether there were origi-nally two different words, which have become homophonous in most Tai languages, perhaps in some cases as a result of regular sound changes and in other cases through contamination of one word by the other. The whole matter should now be reexam-ined in the light of our hypothesis, to see whether it may be possible to sort out two orig-inal words, perhaps one with our new initial *B and the other with ordinary *b.

6. There seems to be no doubt that the Siamese cognate for this is the very common word $faay^2$, not $phaay^2$ as given by Li (1977, 37, 64, 65). Li's $phaay^2$ appears to be a kind of ghost word, the source of which has with some difficulty been traced. The *Royal Institute Dictionary of Siamese* does indeed have a word $phaay^2$ glossed simply as 'side' ("$khaaŋ^3$"). Other modern dictionaries of

Siamese (McFarland, Haas, and the earlier Ministry of Education dictionary on which the *Royal Institute Dictionary* is based) do not have the word at all, and I have not found a native speaker who recognizes the word. The source of this form $phaay^2$ is apparently the Pallegoix dictionary of 1854, which has (p. 532) $phaay^2$ 'on the side', in a number of phrases, for example, $phaay^2$ naa^3 'on the fore side'. This word $phaay^2$ is nothing but a variant of the very common word $phaay^1$ (given also by Pallegoix), used in such phrases as $phaay^1$ nay^1 'inside', $phaay^1$ $nɔɔk^3$ 'outside', and so on. The 1896 revised edition of Pallegoix lists $phaay^1$ and $phaay^2$ as variants in such phrases. So $phaay^2$ was apparently a nineteenth-century colloquial variant of $phaay^1$, and has nothing to do with our word.

Sø̞ren Egerod once proposed (Egerod 1961, 76-77) voiced aspirates *bh (or *bɦ), etc., instead of *b, etc., for the voiced stops of Proto-Tai. At first glance our hypothesis, if we now reconstruct *bh, etc., in addition to and contrasting with *b, etc., would seem to preclude his suggestion, or his would preclude ours; if he is right, we must be wrong, or vice-versa. On the other hand, if we are right, then our new series *bh (for *B), etc., would have been changed to *ph, etc., at a very *early period in the Southern Tai languages, so* that there could easily have been a later intermediate change of *b to *bh, etc., in part of the Southern area. Egerod was dealing with dialects of only a part of the Southern Tai area, and this idea of his appears to have been suggested chiefly

by his study of the dialects of the southern peninsula of Thailand.

8. There are other, strong, supporting arguments for the idea of preglottalized nasals in the third row of the chart. The objection that the Mak-Sui-Kam languages sometimes have preglottalized nasals corresponding not to these sounds but rather to the Proto-Tai preaspirated nasals (in the top row of the chart) is perhaps less disturbing in view of the chaotic irregularities we have encountered in the Mak-Sui-Kam correspondences for our six newly reconstructed Proto-Tai sounds. As pointed out above, the sound system of the more remote parent language of both the Tai family and the Mak-Sui-Kam group, and the various changes that occurred on either side, may have been of such complexity and variety as to prevent simple regular correspondence of whole sets of sounds between the two groups.

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