

# Voice Quality and Tone in Several Lao Dialects

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**ABSTRACT:** This paper examines some phonological distinctives in the dialects of several individuals from different regions of Laos. The relationship of pitch, tone, and voice quality is analyzed instrumentally in an attempt to explain some features of regional uniqueness, especially in reference to tone split. Special attention is given to B category tones, as one of the dialects analyzed displays a syllable final creaky voice quality that may have implications for the historical development of Tai tones.

## 1.0 Introduction

Like all languages, the Tai family has undergone significant changes in its phonology over the centuries. Tonal change has been very prominent in this process.

The purpose of this paper is to examine data from several Lao dialects possessing import for a clearer understanding of some aspects of Tai tonal change. A brief summary of current consensus on the development of the Tai tones is presented as necessary background to interpret the data presented thereafter.

It is asserted that one of the Lao dialects analyzed manifests a syllable final creaky voice quality in the B tone category that may hail from a time when proto-Tai had no contrastive tones. This could lend credence to the theory that Tai tonal development may have followed along the same lines proposed by Haudricourt (1954) for Vietnamese.

## 2.0 Historical Background

Virtually any phonology book that deals with tone will contain examples taken from Central Thai, Lao, or other Tai

languages. Phrases like Central Thai's *mǎj mǎj mǎj mǎj* 'Is the new silk burning?' are often cited to show the contrastive nature of tone in the Tai languages.

The question nevertheless remains of whether the new silk was always burning. That is, were these words always contrastive only on the basis of tone?

The consensus among Tai scholars as reflected by William Gedney (1973) and Li Fang Kuei (1977) is that there was a time when Proto-Tai exhibited no more than three tones (compared to the 5-7 found in most Tai languages today). Although Li Fang Kuei and William Gedney differ slightly in the details of their tonal change models, the key factors remain the same.

For the purposes of this discussion, I will primarily use Gedney's framework as described in his "Checklist for Determining Tones in Tai Dialects" (1973). Here, the Proto-Tai tones are first divided into three classes of open syllables--A, B, and C--and two classes of closed ("dead") syllables D-[preceded by]-short[vowel] and D-[preceded by]-long [vowel] as shown in Figure 1.

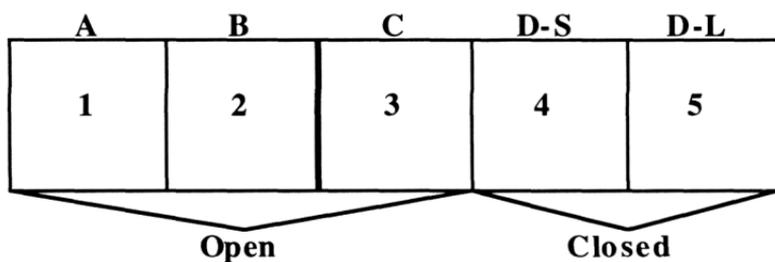


Figure 1. Proto-Tai tones (adapted from Gedney, 1973)

The A-B-C divisions may have been related to word final consonants. It is thus possible that the Tai languages followed along the same route of word final consonant absorption and tonal birth documented by Haudricourt (1954) for Vietnamese. That is, there may have been a time when

Vietnamese did not have tones, but did have word final consonants which would later affect tone formation as they disappeared or were absorbed into the syllable peak. Glottal constrictions which may be remnants of these word final consonants have been found in the C tones of some Central and Southwestern Tai languages (including some of the Lao dialects studied here).

As time passed, the original three proto-tones further divided on the basis of word initial consonants. The basis of this split seems to have been word initial voicing. Voiced initials are thought to have depressed the pitch of the words (Li Fang Kuei, 1977:26).

	A	B	C	D-S	D-L
Voiceless	1	3	5	7	9
Voiced	2	4	6	8	10

Figure 2: Initials at time of first Tai tone split (adapted from Gedney, 1973)

One further differentiation has occurred in the midst of the voicing categories shown here, yielding a large number of potential tones (Figure 3).

	<b>A</b>	<b>B</b>	<b>C</b>	<b>D-S</b>	<b>D-L</b>
<b>Voiceless friction sounds</b>	<b>1</b>	<b>5</b>	<b>9</b>	<b>13</b>	<b>17</b>
<b>Voiceless unaspirated stops</b>	<b>2</b>	<b>6</b>	<b>10</b>	<b>14</b>	<b>18</b>
<b>Glottals</b>	<b>3</b>	<b>7</b>	<b>11</b>	<b>15</b>	<b>19</b>
<b>Voiced</b>	<b>4</b>	<b>8</b>	<b>12</b>	<b>16</b>	<b>20</b>

Figure 3: Maximal tonal categories for Tai (adapted from Gedney, 1973)

Indeed, Gedney (1973) states that additional tone categories may be necessary to explain a handful of rare but significant tones in a few Tai languages. There is insufficient data, however, to posit exact categories at this time (Gedney 1973).

This is not to say that any Tai language had or has some 20 contrastive tones. Rather, each language “clumped” certain tone domains together in a unique way. In fact, tonal contours can be quite different from one Tai language to another. Siamese Thai, for example, “clumped” as shown here.

	A	B	C	D-S	D-L
Voiceless initials at time of split	5th rising				
	1st mid	2nd low	3rd falling	2nd low	2nd low
Voiced initials at time of split		3rd falling	4th high	4th high	3rd falling

Figure 4: Historical Sources of the Tones of Siamese (adapted from Gedney, 1973)

The actual tone contours observable today can be found in different proto-tone categories, as shown in Figure 4. For example, B1, D-S1, and D-L1 all are realized as low tones, B2 and D-L2 are both realized as falling tones, C2 and D-S 2 as high tones, etc.

### 3.0 Tone Categories in Four Modern Lao Dialects

The remainder of this paper will examine tone realization in four kinds or variations of Lao, giving particular attention to the B tone category.

The data from which these observations were made was collected by Jerold Edmondson among Lao refugees in the Dallas-Fort Worth area, and analyzed by the author under Dr. Edmondson's guidance.

The four Lao speakers involved identified themselves as having come from Vientiane, Vientiane Ungmung, Khammouan,

and Savannakhet. Vientiane Ungmung seems to have been a village near Vientiane, but shows some crucial variations from the other Vientiane speaker. This is not an unusual phenomenon; Gedney (1973) reports dialect variation within Vientiane proper, depending on which side of town the speakers are from. The speaker from Vientiane Ungmung is the sole female in the group.

We will begin by looking at the A1 tone category--the upper left hand corner of the Gedney chart. The tone contours presented here are based on five repetitions of the word *khaa* 'leg'. These utterances were originally digitized and analyzed using JAARS International's Cecil hardware and software. The numeric values of the five utterances were then averaged using a compositing program developed by Dr. Edmondson. The resulting figures were then exported to a Microsoft Excel for Macintosh file, the source of the charts presented here.

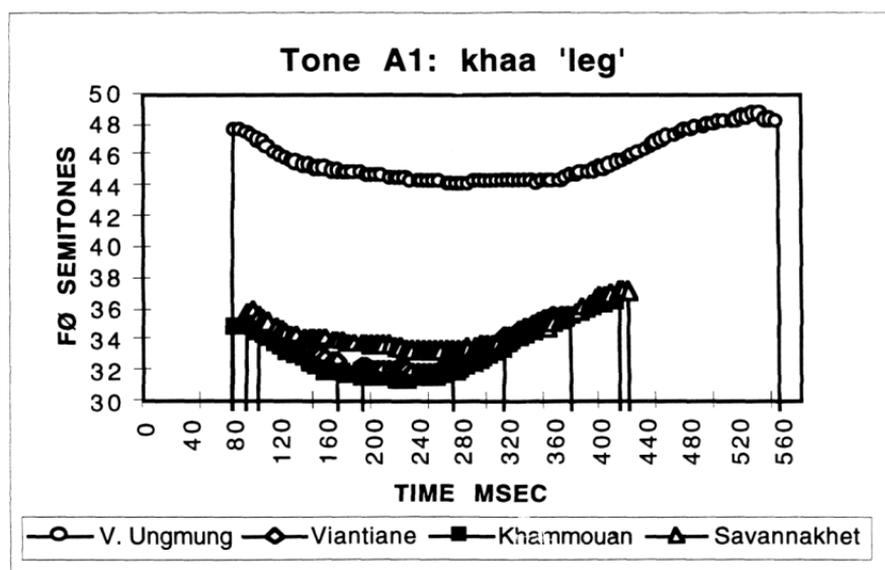


Figure 5: A1 tones in four Lao dialects

The overall differences in A1 tone contour are minimal; all show a basic rising tone<sup>1</sup>.

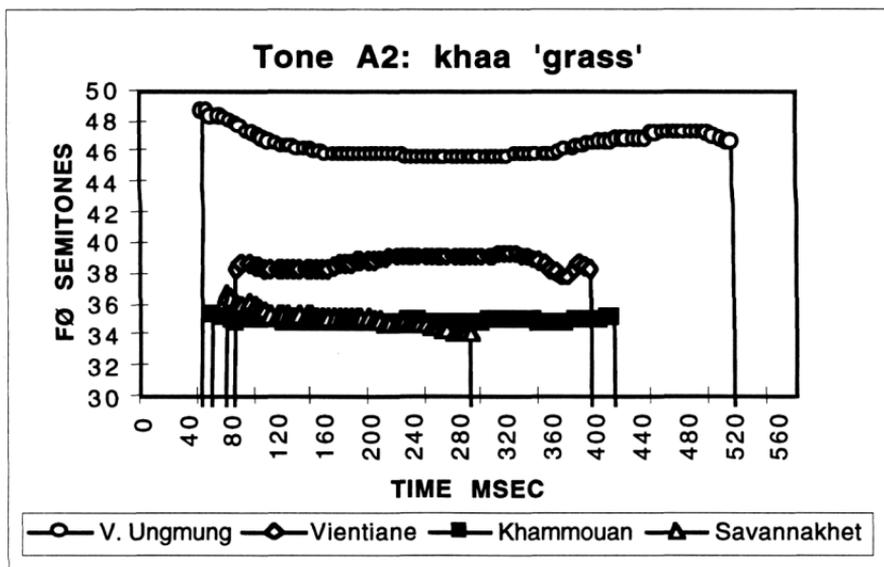


Figure 6: A2 tones in four Lao dialects

The A2 tone category, represented by *khaa* 'leg,' manifests slightly more variation in the actual tone contours. Khammouan and Savannakhet are nearly identical. Vientiane and Vientiane Ungmung exhibit relatively large differences for dialects found in such close proximity to one another.<sup>2</sup> There is a definite rising nature to the Ungmung contour, whereas Vientiane is relatively flat with a slight rise syllable finally.<sup>3</sup>

We will skip over the B category for the time being to examine the C category tones.

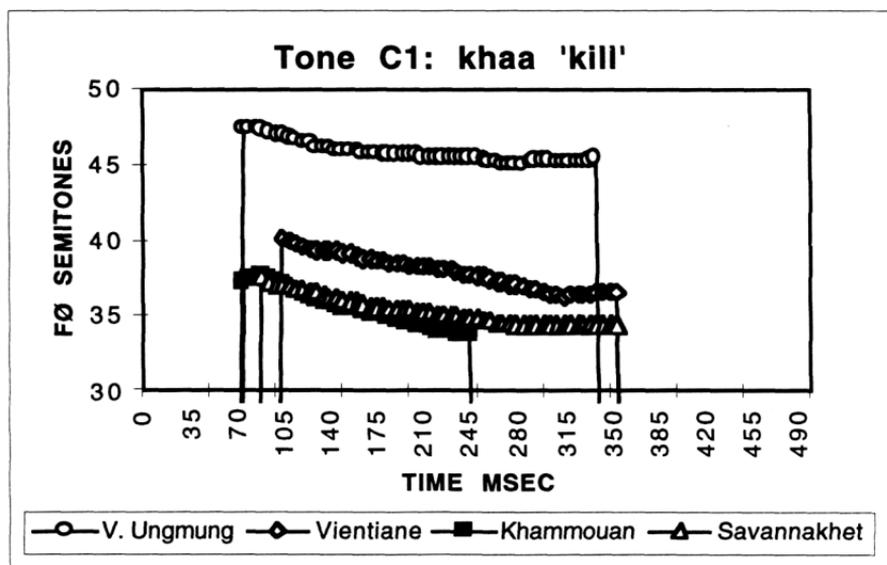


Figure 7: C1 tones in four Lao dialects

It is in tone C1 *khaa* 'kill' that the four dialects come closest to sharing common contours. All four show a slight falling tone. Prominent glottal constrictions are audible syllable finally in Savannakhet, a phenomenon that is not unexpected for C tones in Central and Southwestern Tai.

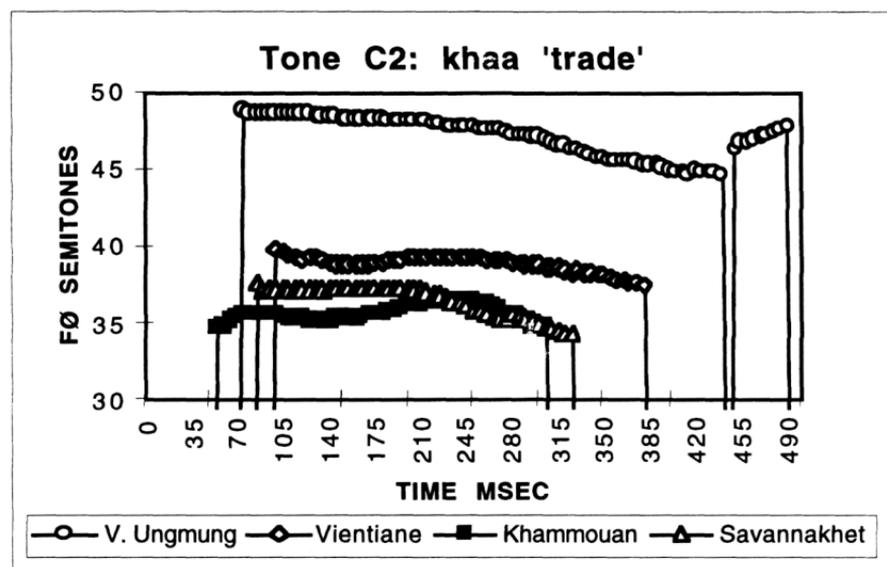


Figure 8: C2 tones in four Lao dialects

In tone C2, *khaa* ‘trade,’ Vientiane Ungmung briefly “drops out of the picture” near the end of the vowel due to glottal constriction. The other three dialects are similar in contour. Savannakhet again exhibits syllable final glottal constriction that is very evident in the recordings (although not reflected on this contour).

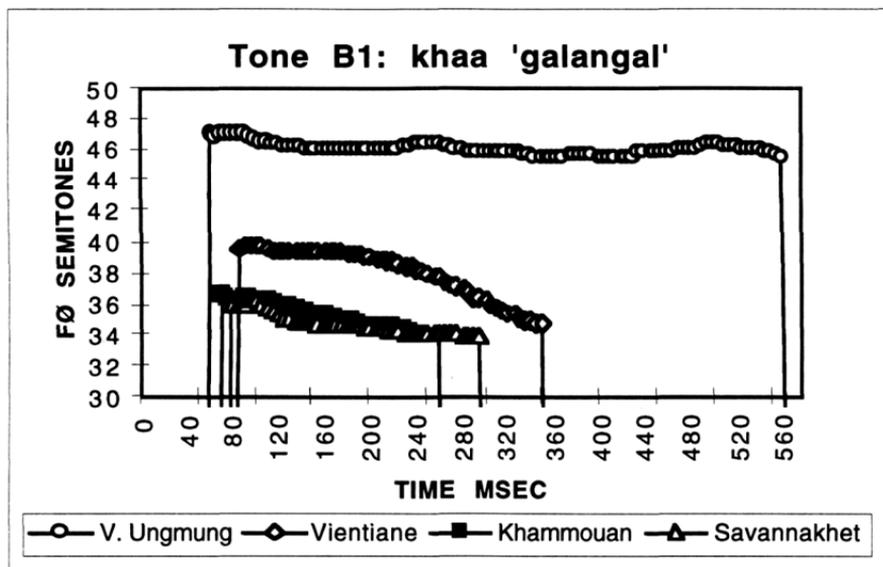


Figure 9: B1 tones in four Lao dialects

The B tone category, represented by *khaa* ‘galangal,’ manifests some very interesting distinctions. First, in B1 (Figure 9), Vientiane Ungmung is, once again, much longer than any of the others, and is almost flat. The other dialects show a much shorter, steeper contour.

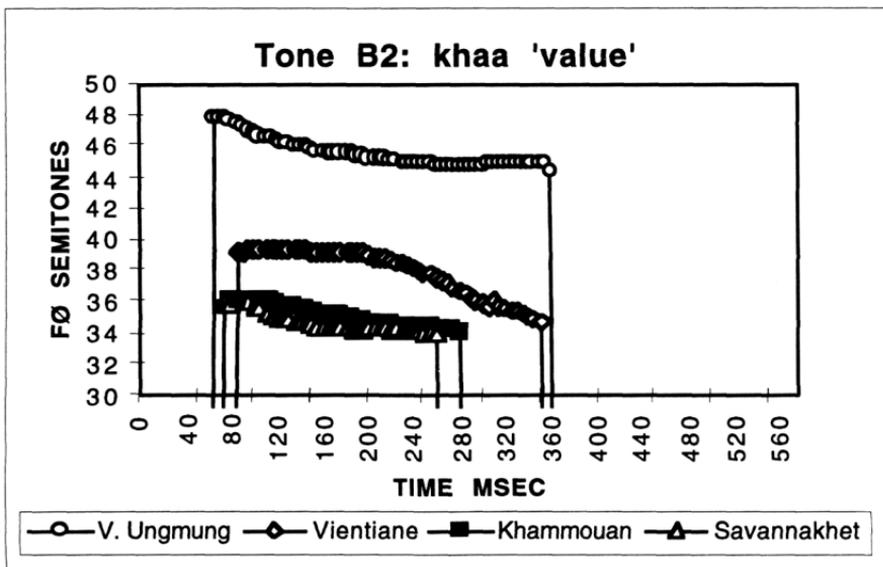


Figure 10: B2 tones in four Lao dialects

In comparing Figures 9 and 10, it becomes apparent that the B1 *khaa* 'galangal' and the B2 *khaa* 'value' tone contours in Vientiane, Khammouan and Savannakhet are identical. This is reflected in the recordings, where no audible B category contrast is found for these three dialects. Vientiane Ungmung, however, shows definite contrast between B1 and B2.

Under examination with JAARS International's MacCecil program, Ungmung's B2 tone displays an abundant, atypical amount of energy syllable finally compared to the B2 tones of the other three dialects (Figure 11). This, again, corresponds to the syllable final creakiness noted previously. The other three dialects show a much smoother tapering syllable finally, with relatively little activity. This difference in turbulence becomes even more evident when looking at the relative amplitude setting (Figure 12). Ungmung shows considerable activity syllable finally--a series of small spikes--while the other dialects are virtually flat.

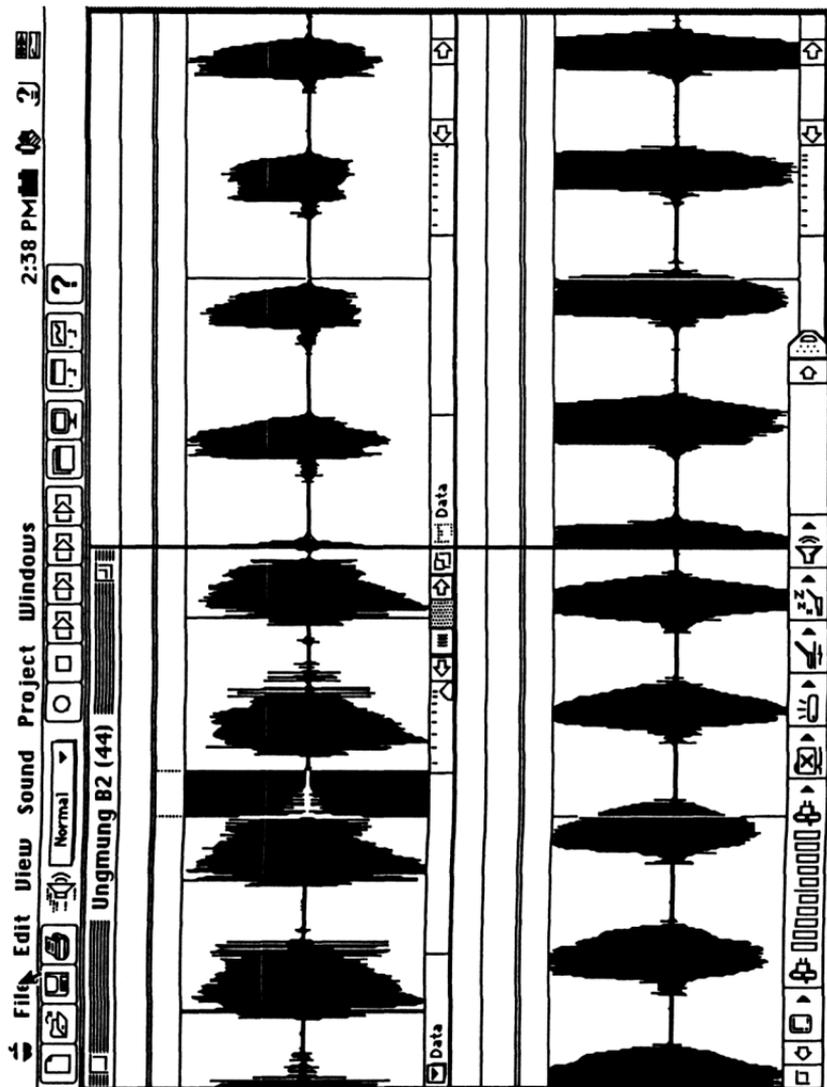


Figure 11. B2 tones in four Lao dialects

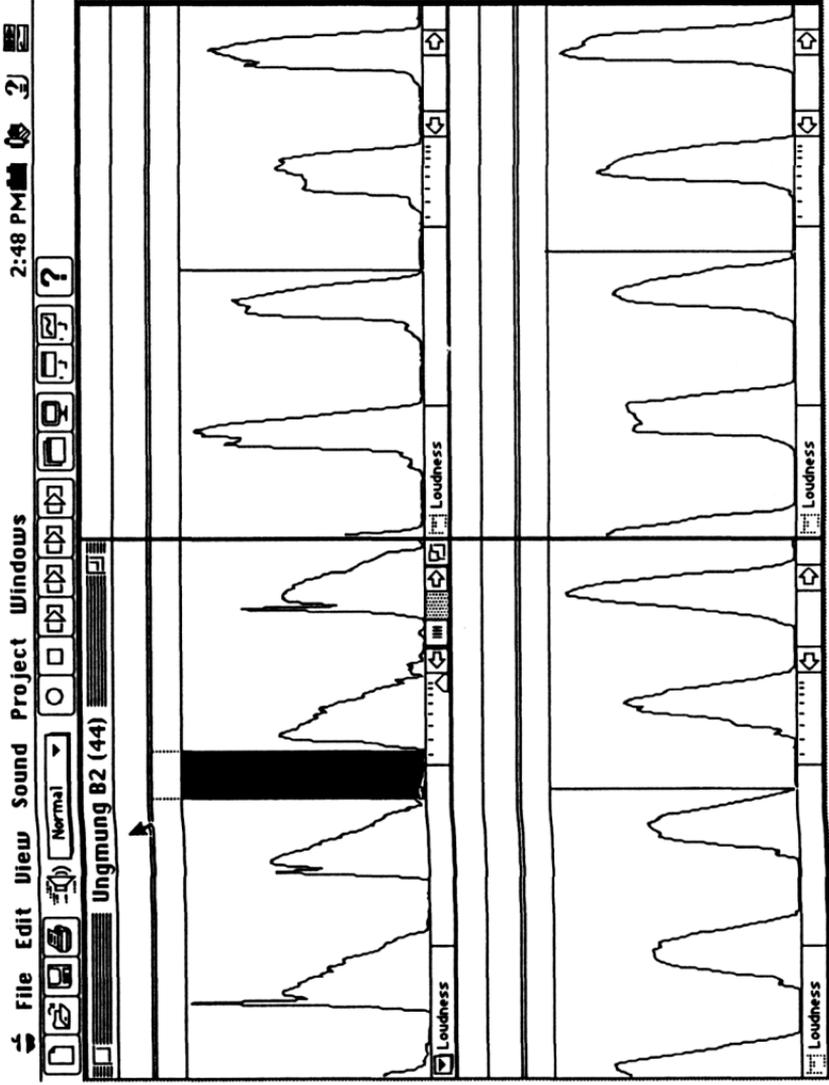


Figure 12. B2 tones in four Lao dialects

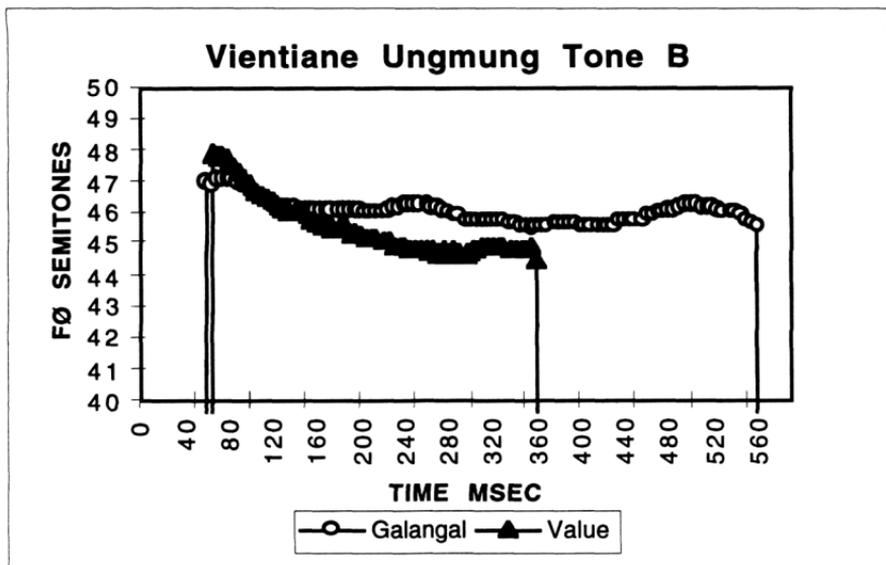


Figure 13: Vientiane Ungmung B1 and B2 tones

We will now take a closer look at Vientiane Ungmung's B tones. B1 and B2 definitely show some similarities in their contours (Figure 13). The slight difference in the contours--only 2 semitones at the widest point--is probably phonologically insignificant. In fact, it could be suggested that it is the creaky voicing syllable finally that "drags" the contour of B2 down. This creaky voicing likewise acts to truncate the syllable. In effect, then, it would be plausible to say that the creaky voicing in the B2 tone category of Ungmung is actually the prime contrastive element between B1 and B2.

#### 4.0 Hypothesis

What does this mean? There are two basic alternatives which would require additional investigation to fully sort out. The first would be that the word final creakiness in the B2 Vientiane Ungmung tone may be a simple local innovation not related to historical sources--possibly the result of tone sandhi.

The second alternative would say that Ungmung's B2 tone may be a sort of linguistic fossil, preserving a consonantal

quality that may have been contrastive in the proto-language. This would lend evidence, however small, that the Haudricourt theory of tonal origin given for Vietnamese may also apply for Tai historical development. That is, that the proto-language may have not had tones--that the new silk was not always burning--but rather that those tones emerged under the influence of word final consonants which have since been lost or absorbed. It would still be difficult to predict exactly what consonants those might be, but something definitely seems to have been there at some point in history.

The second alternative would find some support from studies in other branches of the Tai family. Nung Chao, a Central Tai language of Vietnam, has identical pitches for the B2 and C1 categories, differentiated only by differences in word final voice quality (Edmondson, 1995). Nevertheless, word final voice quality is rarely (if ever) seen as a contrastive feature in the Southwestern Tai family, of which Lao and Central Thai (Siamese) are members.

## 5.0 Conclusion

This paper has examined data from four Lao dialects in an effort to understand the phonological and historical conditions responsible for an apparently atypical rendering of a B2 tone utterance in Vientiane Ungmung. This dialect was found to have word final creakiness in that position, something not found in any of the three other dialects examined. While additional research would be needed to determine whether this creakiness occurs consistently in the Ungmung B2, it is asserted that this creakiness documented here may have either emerged as a local innovation via tone sandhi, etc., or have been preserved as a linguistic fossil of the proto-language. The latter suggestion would have import for the theory that proto-Tai contained no contrastive tones, but did have consonants syllable finally in words now identified as belonging to the B tone category.

## Notes

<sup>1</sup> The tone contour for Vientiane Ungmung is much higher because the speaker is female.

<sup>2</sup> Assuming that Vientiane Ungmung is actually from the Vientiane area, and not the result of migration. The issue of location is nevertheless insignificant for the main argument of this paper, which is related to deeper phonological issues that would be important even if the speaker came from a different area of Laos (but was nevertheless a native speaker of the Lao dialect concerned).

<sup>3</sup> While Ungmung A1 and A2 are both rising tones, they are not identical. A1 is 424, while A2 is 434.

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