The Relationships Between Speech Tone and Melody in the *Khap* Singing of Tai Dam in Laos

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ABSTRACT

The *khap Tai Dam* is the singing of the Tai Dam (or Black Tai) ethnic group. This paper presents the results of an ongoing research studying the relationship between spoken and sung tones in this specific repertoire. Two questions are addressed: (1) Are speech tones realised in *khap Tai Dam* singing? (2) Are the contours of speech and song similar or different in *khap Tai Dam*? The main results so far show that even without a strict parallel between spoken and sung tones, there is a correspondence between speech and singing in *khap Tai Dam*.

Keywords: *Khap*, Tai Dam, tone, speech, song.

1. INTRODUCTION

1.1. The *khap Tai Dam*

The Tai Dam's *khap* songs can be considered as a singing technique made of a few identical principles present in each interpretation. The *khap Tai Dam* is a monodic form, sometimes close to recitative. The transcriptions realised showed that Tai Dam singing is based on a pentatonic anhemitonic scale. The *khap Tai Dam* is sung by one person at a time or by several alternating voices. Songs are based on a relatively fixed structure. Indeed, each *khap* is divided into several musical phrases: the beginning and end of each being marked by identical melodic cells (in term of lyrics and melody) from one phrase to the other. The cell marking the start of the phrase is sung by the interpreter alone, while the cell marking the end is sung in unison by an assembly joining the song. This final cell could be described as a refrain, which allows the audience to participate in the song and cheer on the singer.

Besides this recurrent structure, the *khap Tai Dam* is based on a certain number of melodic models around which the performer creates his song; a kind of basic skeleton underlying the structure of the song, and which serves as a frame for the singer. Four different musical patterns were uncovered during fieldwork in five villages of Hua Phan and Bolikhamsay provinces of Laos between 2008 and 2013. Two are used by the Tai Wat sub-group and are associated to it, while two others are used by the Tai Dam. Each *khap* performed on the same melodic model is categorized in the same way (under the same denominations) by interviewees, which highlight four categories of *khap Tai Dam*. However, more melodic patterns exist that can be found among the Tai Dam community in other regions of Laos and Vietnam.

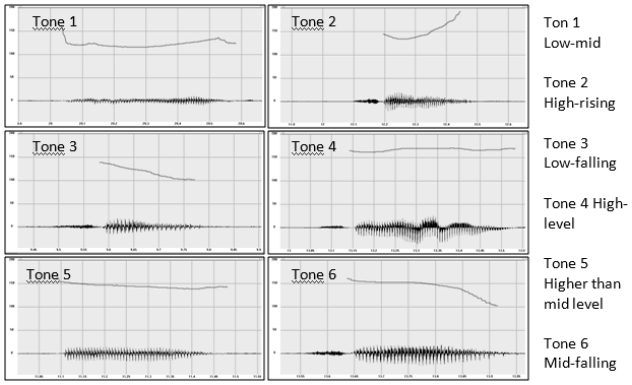
There are different types of *khap Tai Dam* sung according to community events (weddings, New Year celebrations, guest visits, etc.). They differ in that their lyrics are adapted to the event, but the technique remains the same (fixed structure, melodic model). This technique involves some improvisation in terms of music (construction of the song from the fixed structure and the melodic pattern) and lyrics. These are partly predetermined phrases or topics that the performer will mix with his own ideas according to the context of the song and his tastes and talents.

1.2. The Tai Dam language

The *khap Tai Dam* is performed in the Tai Dam language. While the Lao language (the language of the ethnic majority in Laos) is taught at school, the Tai Dam language is still used at home, even though children in multiethnic villages are increasingly using Lao speech, or mixing both languages. Like Lao, the Tai Dam language is part of the Tai-Kadai language family. Following the model of the Tai-Kadai family developed by Li and accepted by most researchers [7], Tai Dam (like the Lao language) belongs to the Southwestern sub-branch of the Tai branch, itself considered as part of the Kam-Tai group in the Tai-Kai family. While accepted as a norm, those categories are still a matter of great debate for some authors (for more information and references about this topic, see [1]). Most Tai languages, like Lao and Tai Dam, are isolated languages. Tai Dam words are polysemous and polyvalent, as their function vary according to their position in the sentence. The base of the vocabulary is monosyllabic, but polysyllabic words exist (coming from Pali or Sanskrit, or built from prefixes). Vocalic length and the pitch of syllables are relevant elements in the construction of words [5]. In regards to speech tone, this paper will follow

the results of William Gedney [3], who found six tones in the Tai Dam language: low-mid level, high rising, low falling, high level, higher-mid level and mid-falling. These tones are confirmed by several authors such as Hartmann [4] and Fippinger [2]. However, Gedney's research was mainly conducted with Tai Dam speakers from Vietnam, whose accent and speech tone may vary from the Tai Dam spoken in Northern Laos. A first analysis of a *khap Tai Dam* from Laos and its spoken version seems to confirm the six tones developed by Gedney (although, Gedney's observations on the glottalization of tone 3 were not observed in the analysis realised for this paper). These tones were thus used in the phonological analysis of spoken lyrics in singing. Fundamental frequency plots for each tone are presented in Figure 1.

Figure 1: Fundamental frequency plots for the six spoken tones of Tai Dam. The scale frequency for each tone is 0 to 200 Hz.



1.3. Speech tones and melody

This paper will approach the relationship between these speech tones and the singing melody in *khap Tai Dam*. It will examine how a singer can respect speech tones (for the lyrics to be intelligible) while building his song around a predetermined melodic pattern, which is distinctive at each interpretation regardless of the lyrics or the interpreter. In this paper, the term "speech tones" refers to lexical tones, pitches that are relevant in determining the meaning of words.

Exploring the complex connections between tones and music, this paper will focus on the following questions: Are Tai Dam speech tones performed in *khap Tai Dam*? Is the melodic contour similar to the speech tone contour?

2. METHODOLOGY AND CORPUS

Nine songs representative of the singing repertoire of the Tai Dam community were selected for this research about the relations between speech tones and music, and for the determination of the melodic model (which is never sung in its basic form, whether during a performance or for musical transmission). These nine songs are distributed between three melodic models (the fourth model used by the elder Tai Wat is practised very little and won't be studied) and are performed by eight singers from the villages of Na Kai, Huay Yong, Xieng Khun and Sair in Hua Phan province (North Laos), and the village of Thongnamy in Bolikhamsay province (Central Laos). Each song has been recorded in its regular performance context (a celebration during which the singer is surrounded by guests who usually join in with the songs by singing the refrains) and is usually filmed as well.

A transcription of the lyrics (using the Lao writing system) and a translation into English has been provided by Amphone Monephanchan, a Tai Dam interpreter and native of the Hua Phan province. A spoken version of each song has thus been recorded, performed by the singer him/herself or a person from the same region in the case of the singer being illiterate (in order to preserve local accents that can alter speech tones). A phonetic transcription of the lyrics as well as a phonological transcription of the tones is then produced based on those recordings (Figure 2). As seen in the Lao language, Tai Dam doesn't have a fixed system of phonetic transcription. The transcriptions realised for this research are based on the system developed by Lamvieng Inthamone (who taught at INALCO Paris, [5]) for the Lao language. Each Tai Dam phoneme can be reproduced with this system. The tonal transcription is based on William Gedney's system, but is adapted for greater accuracy, as speech tones are not absolute in pitch and thus vary over the sentence (a minus or a plus sign is used in front of the number corresponding to the tone if it starts lower of higher than similar tones nearby in the sentence). Descendant or ascendant movements are also added for the same reasons. The musical transcription was created (Figure 3), with the help of a transverse flute (that can be tuned to the pitch of the singing) on a musical score. Finally, the fundamental frequency contour (F0) of each sentence of the sung and spoken version was realised with *Winpitchpro* software.

It is important to note that tones in a sentence, are influenced by their context (the previous or following tones and prosody). This comparison uses groups of words (and not isolated spoken words), and tonal transcriptions realised on the basis of recorded pitch (and not on the basis of the Lao transcription, which indicates speech tones with

tonal characters or specific consonants), in order to avoid this bias.

One of the nine *khap Tai Dam* analyzed has been selected to illustrate the results of this research. It is a *khap bao sao*, a love song performed by a female singer named Phom in Na Kai villages in February 2011. Usually performed alternatingly (as a repartee song between man and woman), this kind of song is now increasingly interpreted by a single singer describing an imaginary love story.

3. ANALYSIS AND RESULTS

So far in this research the main observations are that, generally speaking, spoken tones are realised in sung versions of *khap Tai Dam*. There are however a number of differences in the realisation of tones when different parts of the songs are performed. For example each song starts with a fixed cell (always sung on the lyrics "Ha: ʔo:j"). Apart from variations in length (notes can be much longer compared to their spoken equivalent) there is a good parallel between the spoken and sung melodic lines. This is also true for the pre-refrain (a short cell performed by the soloist and marking the beginning of the refrain to the audience). In the other parts of the songs, where there is only one singer, one can see that tones can be identified in the sung melodic lines. There is of course a different ambitus in speech and in song. Spoken tones never go above 200 Hz for male speakers and sung tones easily reach 500 Hz. In such sections, the melodic contour is not strictly the same in speech as in song. This confirms that there is a melody outside the strict realisation of tones that can generally be identified in song. In the case of *khap Tai Dam* this melody is the melodic model on which the interpreter builds his song. The presence of this model was also confirmed by several experimentations during fieldwork in Laos. One consisted of proposing hummed versions of *khap Tai Dam* (without lyrics) to singers. Four hummed songs based on the four different models were proposed, and every interviewee was able to identify it as a *khap Tai Dam* and categorize it in one of the four categories of *khap Tai Dam*.

Figures 4 and 5 compare the melodic lines (a fundamental frequency curve) of the same spoken and sung sentence. Apart from the initial cell where the parallel is quite obvious, a detailed examination of the two curves shows that each of the tones found in speech can be identified in song. Comparing the phonological transcription (Figure 2), the musical transcription and the fundamental frequency curves of Figures 4 and 5 shows that there is a realisation of tone in singing. Following the concepts developed by Morey [8] and Ladd [6], the realisation of speech tones in *khap Tai Dam* is more "represented" (the main characteristics of speech tones are performed, for example, when the melodic pitch realises the main movement of the speech tone) than "suggested" (when pitch tones are mainly identified by several clues such as context, phonetic residues, etc.) in this analysis. However the duration and the amplitude of the frequency realisations of tone in singing can be quite different from speech. The modulations of frequency can be quite small or much larger depending on the constraints of the musical discourse. Similar observations are made in all the song's sentences.

Figure 2: Phonological transcription of the second sentence of a *khap Tai Dam*. Above each syllable, tones are indicated by lines and associated with their numbers.

Figure 3: Musical transcription of the second sentence of a *khap Tai Dam*. Notes are transcribed above speech syllables. Rhythmic transcription is omitted.

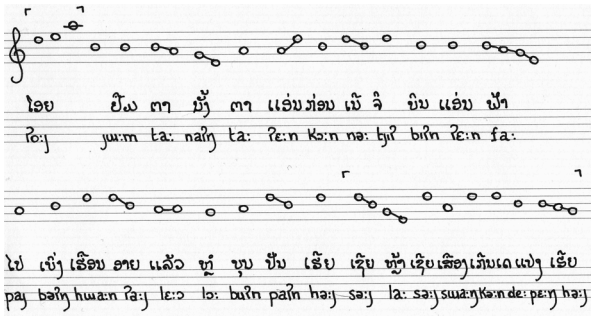


Figure 4: Fundamental frequency contour (F0) obtained from the first part of the spoken and sung versions of a sentence of a *Khap Tai Dam*. Syllables are indicated below the F0 line for both the spoken and the sung versions. Contours were obtained using *Winpitchpro* and the autocorrelation method for F0 extraction.

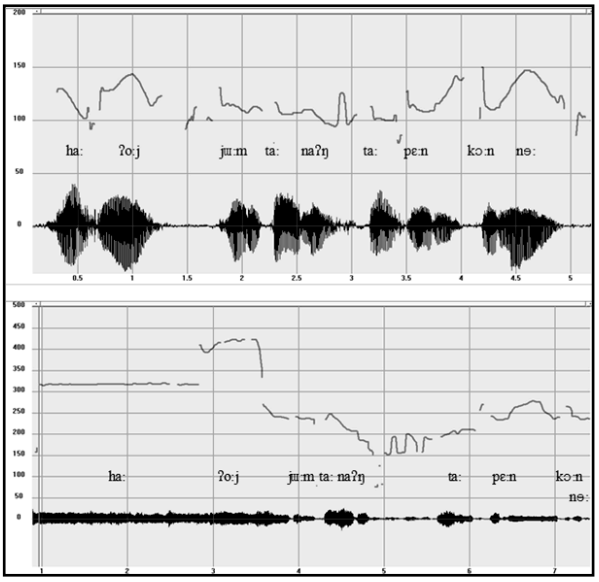
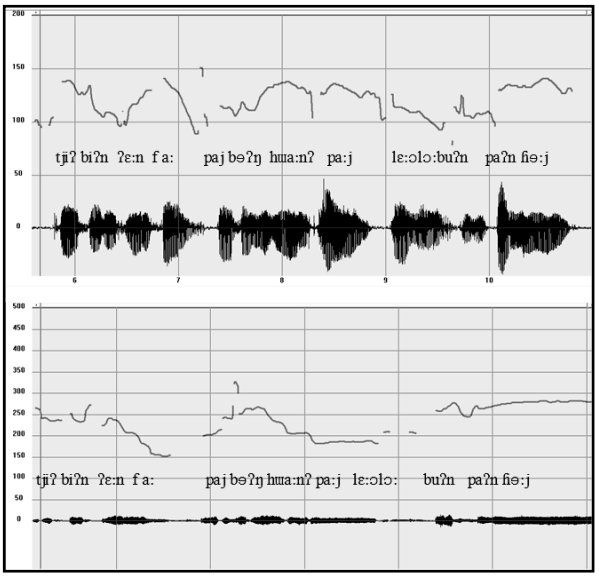


Figure 5: Fundamental frequency contour (F0) obtained from the second part of spoken and sung versions of a sentence of a *khap Tai Dam*. Syllables are indicated below the F0 line for both the spoken and the sung versions. Contours were obtained using *Winpitchpro* and the autocorrelation method for F0 extraction.



These results are similar to those of Stephen Morey in his research on the realisation of speech tone in Tai Phake music of India [8]. In his analysis of Tai Phake speech tones (also belonging to the Southwestern sub-branch of the Tai-Kadai linguistic family), he concludes that speech tones are realised (in many cases "fully realised") in Khe Khyang musical style. However, as for the present research, Morey was able to identify a melody independent from the realisation of speech tones.

4. CONCLUSIONS AND FURTHER RESEARCH

From this study, which has to be considered as preliminary since we still have to process part of the data, we can conclude that tones are realised (mainly "represented") in *Khap Tai Dam*. Spoken tones are found in song but there is some flexibility in the way they are realised. These results can be compared to other analyses on the relationship between Tai language and music, such as Morey's research, which gives similar results. Further research will now have to explore the role of the musical model in the construction of the song, and its relationship with speech tone. A melodic model can indeed be identified for each interpretation despite the realisation of speech tones (coming from lyrics that are partly improvised and vary at every performance).

5. REFERENCES

[1] Diller, A., Edmondson, J., Luo, Y. (eds). 2012. *The Tai-Kadai Languages*. London and New York: Routledge.

[2] Fippinger, J., Fippinger, D. 1970. Black Tai Phonemes, with References to White Tai. *Anthropological Linguistics* 12.3, 83-97.

[3] Gedney, W. 1964. A Comparative Sketch of White, Black and Red Tai. *Social Science Review*. Special publication I, 1-47.

[4] Hartmann, J. 2004. Linguistic and Historical Continuities of the Tai Dam and Lao Phuan: Case Studies in Boundaries Crossing. Presented at the conference of the *Southeast Asian Linguistic Society* Bangkok. www.seasite.edu?lao?events/COTSarticle/P01.htm

[5] Inthamone, L. 2005. *Je parle Lao*. Paris : Editions You-Feng.

[6] Ladd, R. 2014. Singing in Tone Languages: An Introduction to the Kinds of Things We Might Expect to Find. In Schöpf, J., Lechleitner, G., Liebl, C. (eds), *Jahrbuch 4 Des Phonogrammarchivs*. Göttingen: Cuvillier Verlag, 13-28.

[7] Li, F-K. 1997. *A Handbook of Comparative Tai.* Oceanic Linguistic Special Publications n˚15. Honolulu : University of Hawaii Press. Cited in Diller, A. 2012. Introduction. In: Diller, A., Edmondson, J., Luo, Y. (eds), *The Tai-Kadai Languages*. London and New York: Routledge, 3-8.

[8] Morey, S. 2014. The Realisation of Speech Tone in Tai Phake Music: the Case of the Khe Khyang Style. In: Schöpf, J., Lechleitner, G., Liebl, C. (eds), *Jahrbuch 4 Des Phonogrammarchivs*. Göttingen: Cuvillier Verlag, 81-107.