

# The Decline of Tone and Melody Correspondence in Modern Thai Pop Songs?: A Preliminary Analysis

Chawadon Ketkaew, Junyawan Suwannarat

Chiang Mai University, Thailand  
chawadon.k@cmu.ac.th, junyawan.suwannarat@cmu.ac.th

## ABSTRACT

The purpose of this research is to investigate the correspondence between tone and melody in modern Thai pop songs, as there is a belief that there is no appropriate matching between lexical tones and musical notes in contemporary Thai pop songs. To examine this, the researchers analyzed a corpus of ten modern Thai songs released in 2022 with the highest views on YouTube. The results revealed a statistically significant correspondence between tonal transitions and musical note transitions in these songs, consistent with the findings of previous studies [1,2]. The results also indicated that Thai pop music composition does not necessarily strive to maximize similar transitions, but tends to avoid contrary transitions. This finding refutes the idea that today's music neglects the correspondence between tone and melody, which can negatively impact the intelligibility and aesthetics of the lyrics in a song.

**Keywords:** Tone-melody correspondence, Thai music, Thai lexical tones

## 1. INTRODUCTION

One of the challenges of singing in tone languages is how listeners can comprehend the lyrics when the pitch of the words is being used to convey meaning, and the melody of the music may also involve changes in pitch. According to several notable Thai songwriters, they said that if the transitions between lexical tones and musical notes do not match, it can make it more difficult for listeners to understand the lyrics, as the tone and melody may not align with the meaning of the words being sung. This can lead to confusion or misunderstandings and make it harder for listeners to engage with the song. Additionally, the mismatch between tones and melody can affect the aesthetics of native listeners. The combination of mismatched between lexical tone and musical note transitions can create a disjointed or dissonant sound that may be less appealing to listeners, which can negatively impact the enjoyment of the song and potentially make it less successful or popular.

However, there has been significant discussion recently surrounding the matching of lexical tones and musical notes in modern Thai pop songs, in contrast to pop songs of the past. Therefore, this preliminary analysis aims to determine whether the degree of correspondence between lexical tones and musical notes has been reduced in modern Thai pop songs.

## 2. BACKGROUND

### 2.1 Overview of Thai pop music

Thai pop music refers to popular music in Thailand. Its early history can be traced back to the 1960s, when Western music and culture began to influence the country. During this time, Thai pop was heavily influenced by Western pop and rock, and artists adopted Western instruments and styles [3]. In the 1980s and 1990s, Thai pop underwent significant transformation and became more diverse and experimental, absorbing elements from various genres, including dance-pop, R&B, hip-hop, and electronic music. Recently, Thai pop has continued to evolve and diversify, incorporating elements from various global music styles and trends. Modern Thai pop encompasses a wide range of genres and styles and remains an essential part of Thai culture and society. However, the influence of Western music, especially in terms of melody, has resulted in some difficulties with the intelligibility of lyrics in modern Thai pop songs.

### 2.2 Tone-melody correspondence in Thai songs

The Thai language serves as a good case study for the correspondence between tone and melody due to its five tones, as shown in Table 1.

Tone	Tone Value	Examples
MID	[33]	khā: “to be stuck”
LOW	[21]	khà: “galangal”
FALLING	[42]	khâ: “value”
HIGH	[44]	khá: “to trade”
RISING	[35]	khǎ: “legs”

**Table1:** Thai lexical tones

The proper use of tones is essential in Thai communication, as the meaning of a word can be changed by the tone used. It is intriguing to examine how these tones are reconciled with the music's melody when set to song.

Previous research [4,5] has revealed that there is a high level of correspondence between lexical tones and musical notes in Thai for traditional music, classical music, and recitals, approximately 90%. The correspondence is reduced to 60-70% in contemporary songs [5]. More recent studies [6] have also examined the degree of parallelism in Thai pop songs and found it to be around 80%. These studies have shown that the musical genre can significantly impact the level of correspondence, and that mismatches between tones and melody in Thai pop music often involve the Falling tone. Additionally, more recent studies [1,2] using a larger corpus have found correspondence between lexical tone and musical note transitions, and have suggested that falling and rising tones in Thai behave as if they were a high tone for the purposes of tone-music alignment.

### 3. METHOD

In this study, the term "modern Thai pop songs" was defined based on [7] and [8] as mainstream popular music designed solely for commercial purposes and characterized by a large scale of consumption. Thus, this preliminary research investigated the correspondence between tonal transitions and musical note transitions in the 10 most-viewed modern Thai pop songs on YouTube in 2022 (the data was collected in December 2022), requiring the songs to be sung in standard Thai. Professional musicians transcribed the melodies of each song using musical notation, and another professional musician double-checked the transcriptions. The lyrics were aligned vertically with their corresponding musical notes, and

transitions across musical phrases were excluded, as illustrated in Figure 1.



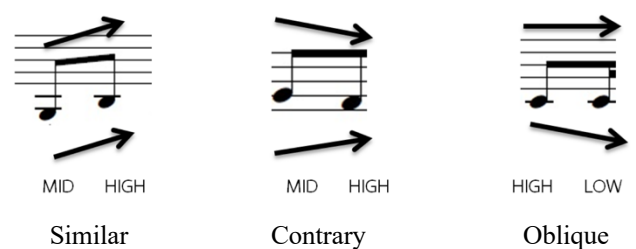
**Figure1:** Example of a musical phrase consist of musical notes and lyrics

Furthermore, to avoid any potential noise, syllables described as "surface toneless" [9] were excluded. Tonal transitions in this study were defined according to the research by Ketkaew and Pittayaporn [1]. Specifically, tonal transitions were grouped into three categories based on their directions, as summarized in Table 2.

Ascending tonal transition	Descending tonal transition	Level tonal transition
MID→HIGH	MID→LOW	MID→MID
MID→RISING	FALLING→LOW	LOW→LOW
MID→FALLING	FALLING→MID	FALLING→HIGH
LOW→MID	FALLING→FALLING	FALLING→RISING
LOW→FALLING	HIGH→MID	HIGH→FALLING
LOW→HIGH	HIGH→LOW	HIGH→HIGH
LOW→RISING	RISING→LOW	HIGH→RISING
	RISING→MID	RISING→FALLING
		RISING→RISING
		RISING→HIGH

**Table 2:** Tonal transition categories (following Ketkaew and Pittayaporn [1])

The direction of tonal transitions was then paired with musical note transitions, and the mapping between tonal transitions and musical note transitions was coded in terms of similar, contrary, and oblique motions, according to [10,11], as shown in Figure 2.



**Figure 2:** Examples of tonal transition and musical note transition in different motions

A tonal transition that aligned with a musical transition in terms of pitch change direction was coded as a similar motion. It was coded as contrary if the tonal transition and musical note transition moved in opposite directions. A tonal transition and a musical note transition that did not agree in direction but did

not move in opposite directions were coded as oblique. The similar, contrary, and oblique motions were then analyzed using the Chi-squared test and the Holm-Bonferroni method with R version 4.3.0 for statistical analysis.

### 4. Result

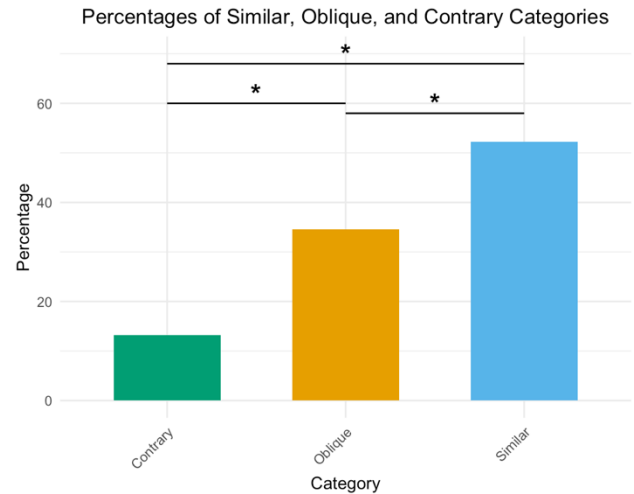
The result revealed a correspondence between lexical note transitions and musical note transitions in 10 modern Thai pop songs, as shown in Table 3.

Tonal Transition	Melodic Transition		
	Up	Down	Same
Up	340 (19.15%) (similar)	100 5.63% (contrary)	112 (6.31%) (oblique)
Down	116 (6.5%) (contrary)	413 (23.27%) (similar)	119 (6.70%) (oblique)
Same	189 (10.65%) (oblique)	212 (11.94%) (oblique)	174 (9.8%) (similar)

Sum of diagonal cell 52.23%

**Table 3:** Correspondence between tonal transitions and musical note transitions

As presented in Table 3, when the tonal transitions are upward, they are paired with upward melodic transitions (19.15%) more frequently than with downward and level melodic transitions. Similarly, when the tonal transitions are downward, they tend to correspond with the same direction of melodic transitions (23.27%). In the case of level tonal transitions, the pairing with the same direction of melodic transitions occurs less frequently than with upward and downward melodic transitions. For further analysis, all pairs of tonal and melodic transitions were grouped into similar, contrary, and oblique motions, as depicted in Figure 3



**Figure3:** Occurrence of similar, contrary and oblique motions in modern Thai pop songs

The analysis of the data demonstrates a significant relationship between tonal transitions and melodic transitions (Chi-squared = 405.83, df = 2, p < 0.0001). Further investigation using pairwise comparisons with the Holm-Bonferroni method confirms significant differences between all pairs of motion categories (p < 0.0001 for all comparisons). As shown in Figure 3, the tonal transitions and musical note transitions in this corpus consist of 1,775 pairs. Of these, 927 pairs (52.23%) exhibit similar motions. This occurrence is more frequent than that of contrary and oblique motions at a statistically significant level (p < 0.001). There are 216 pairs (12.17%) of mapping between tonal and musical transitions that are contrary. Interestingly, the number of oblique motions (35.6%) occurs more often than contrary motion at a statistically significant level (p < 0.001). These results suggest that Thai pop music allows for transitions that are not in contrary motions.

Together, these results provide insights into the underlying structure of Thai pop music and its patterns of tonal and musical transitions. Moreover, these findings contradict the idea that modern Thai music disregards the relationship between tone and melody, which can negatively impact the intelligibility and aesthetics of the lyrics in a song.

### 5. CONCLUSION AND DISCUSSION

The results of this study showed that there was a correspondence between lexical tones and musical notes in 10 modern Thai pop songs, consistent with previous research [1,2], which found correspondences of 55.3% and 57.6% respectively. This finding refutes the notion that contemporary music disregards the correspondence between tone

and melody, which can negatively impact the intelligibility and aesthetic of lyrics in a song.

In our observation, it is worth considering the potential influence of genre on the correspondence between lexical tones and musical notes in modern Thai pop songs. For example, four songs ทักครับ /tʰákkʰráp/, คำๆเดียว /kʰámkʰámđīaw/, เสสร้าง /sě:sě:ŋ/, and Kiminoto that are a combination of pop music and rap or hip-hop showed correspondences of less than 50%. Additionally, other factors such as prominent beats, note duration, and the position of lyrics within the musical phrase may also be relevant for future analysis.

Furthermore, the prevalence of oblique motions in the analyzed songs indicates that Thai pop music allows for transitions that are not in contrary motions, providing a more nuanced understanding of the musical structure in this genre. This insight can be useful for composers, musicologists, and researchers interested in exploring the intricacies of Thai pop music and its relationship with linguistic features.

In conclusion, this study highlights the importance of examining the correspondence between lexical tones and musical notes in modern Thai pop songs, as it sheds light on the intricate relationship between language and music. Future research can expand on this analysis by investigating a larger dataset, including a diverse range of Thai music genres, and exploring other linguistic and musical factors that may influence the correspondence between lexical tones and musical notes.

## 6. REFERENCES

- [1] Ketkaew, C., & Pittayaporn, P. 2014. Mapping between lexical tones and musical notes in Thai pop songs. In: Proceedings of the 28th Pacific Asia Conference on Language, Information and Computation (PACLIC 28), Phuket, 160–169.
- [2] Ketkaew, C., & Pittayaporn, P. 2015. Do note values affect parallelism between lexical tones and musical notes in Thai pop songs? In: Proceedings of the 18th International Congress of Phonetic Sciences, Glasgow.
- [3] Cheng, G., & Charupatanapongse, T. [Online]. The trends and tunes of Thai pop. Kontinentalist. Available: <https://kontinentalist.com/stories/how-did-thai-pop-songs-become-so-popular>. [Accessed: Apr. 20, 2023].
- [4] List, G. 1961. Speech melody and song melody in central Thailand. *Ethnomusicology*, vol. 5, no. 1, 16–32.
- [5] Saurman, M. E. 1999. The agreement of Thai speech tones and melodic pitches. *Notes on Anthropology*, vol. 3, no. 3, 15–24.

- [6] Ho, W. S. V. 2006. The tone-melody interface of popular songs written in tone languages. In: Baroni, M., Addessi, A. R., Caterina, R., & Costa, M. (eds), Proceedings of the 9th International Conference on Music Perception and Cognition (ICMPC 2006), 1414–1422.
- [7] Wuttipong, N. 2011. The Thai popular music industry: industrial form and musical design. Doctoral dissertation, University of Nottingham, Nottingham, United Kingdom.
- [8] Burnett, R. 1996. The Global Jukebox: The International Music Industry. Psychology Press, vol. 18.
- [9] Luksaneeyanawin, S. 1983. Intonation in Thai. Thesis, University of Edinburgh, Edinburgh.
- [10] Kirby, J. & Ladd, D. R. 2016. Tone-melody correspondence in Vietnamese popular song. 5th International Symposium on Tonal Aspects of Languages (TAL 2016).
- [11] Ladd, D. R. & Kirby, J. 2020. Tone–melody matching in tone-language singing. In: *The Oxford Handbook of Language Prosody*, 675–688.

## 7. APPENDIX: List of 10 modern Thai pop songs

	<i>Songs</i>	<i>YouTube view</i>
1.	พิพิธพันธ์ /pʰíʔpʰítʰàpʰān/	169m
2.	คำๆเดียว /kʰámkʰámđīaw/	160m
3.	ขวานบิน /kʰă:nbin/	154m
4.	นงนันทอง /náʔnâ:tʰɔ̃:ŋ/	153m
5.	ทักครับ /tʰákkʰráp/	116m
6.	เสสร้าง /sě:sě:ŋ/	98m
7.	วาดไว้ /wâ:twáj/	91m
8.	ลิมแพคไม่ไหว /lī:mtʰê:pmâjwǎj/	97m
9.	โต๊ะริม /tóʔrīm/	71m
10.	Kiminoto	67m