

ANALYSING TONE-MELODY CORRESPONDENCE IN THAIPOP USING THE CANTOPOP “LING YI SEI SAAM” SONGWRITING METHOD

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Received 28/11/2025, Revised 24/05/2026, Accepted 14/08/2026

Abstract

Background and Objectives: Over the past seven decades, Hong Kong scholars have developed systematic approaches to lyric-melody correspondence, contributing both to songwriting practice and to academic research. Of these approaches, the “*Ling Yi Sei Saam*” (0243) method stands as a representative example. However, research on this topic remains limited despite the rapid development of Thai popular music (Thaipop). Existing studies on Thai music have largely focused on traditional songs, leaving Thaipop underexplored from a musicological and linguistic perspective. In this study, we examine the phonological features of Thai tones, including their values and contours. We investigate lyric-melody correspondence in Thaipop, identifying songwriting techniques based on by the *Ling Yi Sei Saam* method. Furthermore, we propose a preliminary methodological framework for Thai lyric-melody alignment as a foundation for future research.

Methods: This study is a framework-based analytical study using the *Ling Yi Sei Saam* method. The lyric-melody correspondence in six Thai popular songs sung in standard Thai that are top-ranking in the Thaipop music charts, namely Top Charts and Billboard Thailand, were examined. Each song was transcribed and notated, including its lexical tone, IPA transcription, musical notation, and International Pitch Notation. Musical structure, scale degrees, and pitch intervals were systematically recorded, and tone values were mapped to the melodic contour. The aligned linguistic and musical data were then analysed to identify pitch range distributions and to compare patterns across the selected materials.

Results: The results show that tone-melody correspondence in Thaipop follows consistent structural patterns. Tone 1 aligns most frequently with the tonic in the central pitch range, while Tone 2 is stably mapped to lower scale degrees (V and VI). Tone 3 frequently occurs in the lowest pitch positions in a song besides when it is in the upper pitch range. Tone 4 and Tone 5 are associated with the upper pitch range and often mark melodic peaks. Tone 3, Tone 4, and Tone 5 belong to the higher pitch range, which map to scale degrees II and V and have a strong tendency to resolve to the tonic (I). In addition, this study shows that tone-melody mismatches commonly occur with the presence of a falling tone. Comparatively, Thaipop exhibits broader tonal distribution across pitch ranges than Cantopop, particularly in the treatment of the falling tone.

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Conclusions: This study demonstrates that the alignment of lexical tones and melodies of the lyrics of Thai pop songs follows a consistent pattern to preserve lyrical intelligibility. The findings show that both Thai and Cantonese popular music share some similar language constraints and tone-melody mapping patterns, resulting in a modified *Ling Yi Sei Saam* framework adapted to Thai pop songwriting and analysis. Overall, this study develops a greater understanding of the lyric-melody relationship and highlights the need for further research.

Keywords: *Ling Yi Sei Saam* / Thai Popular Music / Thai Tone / Tone-Melody Mapping / Cantopop

Introduction

Hong Kong scholars have developed a lyric-melody writing system over the course of 70 years of Cantopop¹ study, namely *Ling Yi Sei Saam*,² with applications in both practical songwriting and academia, though the method is still considered to be in the early stages.³ By contrast, while Thai popular music (Thai pop)⁴ has gained widespread popularity, systematic investigations integrating linguistic and compositional perspectives are still lacking. Thai pop songwriting receives little attention in musicology, although some research has already been done on traditional chants and songs.⁵

As both Cantonese and Thai are tone languages, tones define the meaning of words. Quantitative studies on the speech tones of tone languages like Cantonese and Thai have recognised the prominence of the movement of tones.⁶ Similarly, in musicology, melodic movement has long been systematically theorised,

¹ Joanna C. Lee, "Hong Kong," in *The New Grove Dictionary of Music and Musicians*, ed. Stanley Sadie and John Tyrrell, vol. xi (London: Macmillan, 2001), 686.

² *Ling Yi Sei Saam* represents the Cantonese romanisation of "0243," a widely used lyric-melody writing method in Cantonese songwriting. For the sake of clarity and accessibility to an international readership, this study adopts the term *Ling Yi Sei Saam*.

³ James Kirby, "Comparative Tonal Text-Setting in Mandarin and Cantonese Popular Song" (paper, the 58th Annual Meeting of the Chicago Linguistic Society, Chicago Linguistic Society, Chicago, April 22-24, 2023), 211.

⁴ Multiple terms have been used interchangeably to refer to Thai popular music oriented from the Western-influenced genre phleng string. For terminological consistency, this study adopts "Thai pop," in parallel with the term "Cantopop." For further definitions of Thai popular music, see Panya Roongruang, "Thailand," in *The New Grove Dictionary of Music and Musicians*, ed. Stanley Sadie and John Tyrrell, vol. xxv (London: Macmillan, 2001), 336.

⁵ George List, "Speech Melody and Song Melody in Central Thailand," *Ethnomusicology* 5, no. 1 (January 1961): 16-32; Murray Schellenberg, "Does Language Determine Music in Tone Languages?," *Ethnomusicology* 56, no. 2 (Spring/Summer 2012): 266-278; Jantana Khochprasert, Tanarach Anukul, and Jantra Noennok, "The Study of Prosody and Singing Techniques in Thai Classical Singing," *Music and Performing Arts Journal* 9, no. 1 (January-June 2023): 32-44. (in Thai)

⁶ Marjorie K. M. Chan, "Tone and Melody in Cantonese" (paper, the 13th Annual Meeting of Berkeley Linguistic Society, Berkeley Linguistic Society, California, February 14-16, 1987), 26-37; W. S. Vincie Ho, "The Tone-Melody Interface of Popular Songs Written in Tone Languages" (paper, the 9th International Conference on Music Perception and Cognition, University of Bologna, Italy, August 22-26, 2006); Elaine Lau, "Tone-Melody Relationship in Cantonese," *Working Papers in Linguistics: University of Hawai'i at Mānoa* 41, no. 3 (2010): 1-12; Murray Schellenberg, "Does Language Determine Music in Tone Languages?," *Ethnomusicology* 56, no. 2 (Spring/Summer 2012): 266-278; Man-ying Chow, "Singing the Right Tones of the Words: The Principles and Poetics of Tone-Melody Mapping in Cantopop" (Master's thesis, University of Hong Kong, 2012); Chawadon Ketkaew, "Mapping between Tones and Musical Notes in Thai Pop Songs," PhD diss., Chulalongkorn University, 2015). (in Thai)

most notably part-writing (voice-leading).⁷ In terms of integration of language and music, the study of text-setting has developed techniques for combining words and music, providing a systematic account of the relationship between music and language.⁸ Speech tone needs to be presented adequately to avoid ambiguity. Therefore, the exploration of the relationship between lexical tone and melody in songwriting is important.

Studies show promising tone-melody correspondence in Cantopop and Thaipop, and a theoretical framework for Cantopop named *Ling Yi Sei Saam* has been developed.⁹ However, while this framework was introduced in 1984¹⁰ and has been continuously refined since then,¹¹ theoretical work on Thaipop songwriting remains scarce. Therefore, this study aims to create a foundation for cross-linguistic understanding of tone-melody interactions in pop music and propose a songwriting framework for Thaipop. In this study, principles of the *Ling Yi Sei Saam* framework are adapted and an approach to a modified framework for Thaipop songwriting is developed. The subject of the study is the mapping of lexical tones and scale degree, tonal transitions,¹² and pitch range.

Research Objectives

1. To demonstrate phonological features such as the value and contour of the tones of the Thai language.
2. To examine lyric-melody correspondence in Thaipop, identifying compositional techniques based on the knowledge of the musical settings of Cantopop.
3. To provide a preliminary Thai lyric-melody methodological framework as a stepping stone for further studies.

Literature Review

Previous Findings

Previous studies by linguists and musicologists have investigated the relationship between adjacent linguistic tones and melody in Cantopop music. This research originated from foundational work on tonal

⁷ William Drabkin, "Part-writing," in *The New Grove Dictionary of Music and Musicians*, ed. Stanley Sadie and John Tyrrell, vol. xix (London: Macmillan, 2001), 177.

⁸ Jonathan King, "Text-setting," in *The New Grove Dictionary of Music and Musicians*, ed. Stanley Sadie and John Tyrrell, vol. xxv (London: Macmillan, 2001), 320.

⁹ W. S. Vincie Ho, "The Tone-Melody Interface of Popular Songs Written in Tone Languages" (paper, the 9th International Conference on Music Perception and Cognition, University of Bologna, Italy, August 22-26, 2006); Man-ying Chow, "Singing the Right Tones of the Words: The Principles and Poetics of Tone-Melody Mapping in Cantopop" (Master's thesis, University of Hong Kong, 2012); Murray Schellenberg, "Does Language Determine Music in Tone Languages?," *Ethnomusicology* 56, no. 2 (Spring/Summer 2012): 266-278; Chawadon Ketkaew, "Mapping between Tones and Musical Notes in Thai Pop Songs," PhD diss., Chulalongkorn University, 2015). (in Thai); Yin Hei Lee, "A Corpus Study of Tone-Melody Correspondence in Cantopop, 2000-2020" (Master's thesis, The University of British Columbia, 2023).

¹⁰ Zhihua Huang, *Ling Yi Sei Saam (Cantonese Lyrics Writing Handbook)* (Hong Kong: Joint Publishing, 2024), 20. (in Chinese)

¹¹ Zhihua Huang, *Ling Yi Sei Saam (Cantonese Lyrics Writing Handbook)* (Hong Kong: Joint Publishing, 2024), 21, 276. (in Chinese)

¹² Here, tonal transition refers to the movement of two successive speech tones. See Man-ying Chow, "Singing the Right Tones of the Words: The Principles and Poetics of Tone-Melody Mapping in Cantopop" (Master's thesis, University of Hong Kong, 2012), 41.

perception in languages such as Cantonese and Thai. Although specific methodologies vary across studies, they share common objectives and form distinct yet interconnected strands of research.

1. Perceptual Salience and the Role of Tonal Targets in Tone-melody Correspondence: From a perceptual perspective, contour, direction, and height are significant indications for the auditory perception of Cantonese tones.¹³ The results showed that contour and direction (the movement of tones) had a higher degree of perceptual salience than height. Gandour linked his Cantonese tone-perception findings to similar findings in his prior cross-linguistic studies on Thai and Yoruba, as well as Hombert's¹⁴ work, showing consistent perceptual patterns despite differences in stimuli and languages.

In addition, investigating songwriting methods provides clues on how tones are used.¹⁵ In Cantonese vocal music, songwriters intended to compose with lexical tones in mind, which results in a tight correspondence between speech tones and melody. Generally, in Cantopop songwriting, only one component of contour tone (the tonal target) is sufficiently salient to act as a determinant.¹⁶

Ho¹⁷ analysed the tone-melody mapping¹⁸ of Thaipop songs using tonal targets and observed mismatches involving falling tones. This finding raises questions about the differing treatment of tonal components in Thai and Cantonese in songwriting, while also contributing to bridging Cantopop and Thaipop studies.

2. Tone-melody Correspondence in Cantopop: Chow¹⁹ systematically examined the intricate relationship between Cantonese speech tones and melodies, and revised the optimal tone-melody mapping framework²⁰. In this framework, the alignments between tonal transitions and musical intervals are classified into three types: parallel, oblique, and contrary.

¹³ Jack Gandour, "Perceptual Dimensions of Tone: Evidence from Cantonese," *Journal of Chinese Linguistics* 9, no. 1 (January 1981): 20-36.

¹⁴ Jean-Marie Hombert, "Perception of Tones of Bisyllabic Nouns in Yoruba," *Studies in African Linguistics* Supplement 6 (1976): 109-121.

¹⁵ Marjorie K. M. Chan, "Tone and Melody in Cantonese" (paper, the 13th Annual Meeting of Berkeley Linguistic Society, Berkeley Linguistic Society, California, February 14-16, 1987), 26-37.

¹⁶ Marjorie K. M. Chan, "Tone and Melody in Cantonese" (paper, the 13th Annual Meeting of Berkeley Linguistic Society, Berkeley Linguistic Society, California, February 14-16, 1987), 26-37; W. S. Vincie Ho, "An Optimality-theoretic Analysis of the Tone-melody mapping in Cantonese Popular Songs" (paper, the International Symposium on Tonal Aspects of Languages, La Rochelle, France, April 27-29, 2006); Elaine Lau, "Tone-Melody Relationship in Cantonese," *Working Papers in Linguistics: University of Hawai'i at Mānoa* 41, no. 3 (2010): 1-12.

¹⁷ W. S. Vincie Ho, "The Tone-Melody Interface of Popular Songs Written in Tone Languages" (paper, the 9th International Conference on Music Perception and Cognition, University of Bologna, Italy, August 22-26, 2006).

¹⁸ Tone-melody mapping involves interactions between musical intervals and the corresponding speech tones to achieve perceptual clarity in music listening.

¹⁹ Man-ying Chow, "Singing the Right Tones of the Words: The Principles and Poetics of Tone-Melody Mapping in Cantopop" (Master's thesis, University of Hong Kong, 2012).

²⁰ Man-ying Chow, "Singing the Right Tones of the Words: The Principles and Poetics of Tone-Melody Mapping in Cantopop" (Master's thesis, University of Hong Kong, 2012), 49.

Further studies have examined the “oblique” behaviour of tonal transitions and pitch range. Ho²¹ and Chow²² showed that tonal transitions constructed by high tonal targets [5-5] in Cantonese are often mapped to descending melodies and low tonal target [1-1] transitions are mapped to ascending melodies. In other words, melodies tend to return to mid-range after approaching the pitch extremes. This is a cross-cultural phenomenon known as musical regression.²³

To date, research on oblique transitions in Cantopop has been extensively developed. However, these studies have focused on the behaviours of the upper and lower registers in Cantopop songs without examining the unfluctuating melodies that emerge in the mid range.

3. Contour Tone Language and Differences between Thai and Cantonese: Tone languages are classified into two types: register and contour tone. Thai is a contour-tone language in which word meanings are distinguished by the pitch movements corresponding to each tone.²⁴ Despite having tones distributed across different speakers’ pitch ranges, Thai pitch levels are not as contrastive as those in register-tone languages, as Gandour stated.²⁵ This observation supports our study’s analysis that tone-melody mappings do not depend solely on speech tones’ pitch levels. In Thai, Tone 1 begins at the speakers’ mid-range and remains level throughout its duration. Tone 2 began at the speaker’s low range and falls lower throughout its duration. Tone 3 starts at the high end of the speaker’s range and then decreases steeply. Tone 4 is in the upper part of the speaker’s range and rises throughout its duration. Tone 5 starts lower, then falls slightly, and finally rises toward the end.

One of the features that makes Thai songwriting distinctive compared to Cantonese songwriting is the falling tone. While Cantonese lacks a falling tone, it plays a significant role in the Thai language. In Cantonese, falling tones such as [53] and [55] are no longer considered distinctive in common use, and [21] is almost perceived as a level tone.²⁶ The falling contour is occasionally preserved in singers’ performances; therefore, there are no falling tones in Cantonese songwriting.²⁷

4. Tone-melody Correspondence in Thaipop: Previous studies on Thaipop have sought to identify the correspondence between Thai lexical tones and melodic structures. For instance, Ketkaew²⁸ conducted

²¹ W. S. Vincie Ho, “The Tone-Melody Interface of Popular Songs Written in Tone Languages” (paper, the 9th International Conference on Music Perception and Cognition, University of Bologna, Italy, August 22-26, 2006).

²² Man-ying Chow, “Singing the Right Tones of the Words: The Principles and Poetics of Tone-Melody Mapping in Cantopop” (Master’s thesis, University of Hong Kong, 2012).

²³ David Huron, *Sweet Anticipation: Music and the Psychology of Expectation* (Cambridge: MIT Press, 2006).

²⁴ Henning Reetz and Allard Jongman, “Syllables and Suprasegmentals,” in *Phonetics: Transcription, Production, Acoustics, and Perception* (Chichester: John Wiley & Sons, 2009), 219.

²⁵ Jack Gandour, “Perceptual Dimensions of Tone: Evidence from Cantonese,” *Journal of Chinese Linguistics* 9, no. 1 (January 1981): 20-36.

²⁶ Stephen Matthews and Virginia Yip, *Cantonese: A Comprehensive Grammar*, 2nd ed. (London: Routledge, 2011), 4, 28.

²⁷ Robert S. Bauer and Paul K. Benedict, *Modern Cantonese Phonology* (New York: Mouton de Gruyter, 1997).

²⁸ Chawadon Ketkaew, “Mapping between Tones and Musical Notes in Thai Pop Songs,” PhD diss., Chulalongkorn University, 2015), 93. (in Thai)

a statistical analysis and arranged Thai speech tones according to the pitch height in the following order: T4 = T5 > T3 > T1 > T2. Tones 4 and 5 were high-pitched, equivalent in terms of pitch setting in Thaipop songs. He stated that in musical settings, Tones 3–5 are generally on the higher spectrum of the pitch range. Tone 1 is considered mid-range. Tone 2 is the lowest tone in Thai, and is naturally assigned to lower pitches. In this study, Thai pop songs were analysed based on the ordering of Thai tones proposed by Ketkaew.

Ketkaew and Suwannarat's²⁹ findings, in an extension of a study by Ketkaew and Pittayaporn³⁰ and Ketkaew,³¹ aligned with previous hypotheses and made conclusions about the patterns of Thaipop lyric-melody alignment. Their results agree with Ho's³² in that in lexical tones, one of the components plays a dominant role and is used as a reference. This also aligns with Huang and Chow's claim but is opposed to Lau's. The avoidance of contrary mapping is sufficient to preserve the lyrics' meaning.

While these studies generalise tone-melody patterns through statistical analyses, they do not adequately account for the inconsistencies in transitions that involve the falling tone. For instance, Ketkaew and Pittayaporn³³ suggested that stressed grammatical words should be omitted from datasets. Similarly, the issue of oblique mapping in Thaipop lacks a satisfactory explanation. Resolving these issues is indispensable to building a Thaipop songwriting framework.

The *Ling Yi Sei Saam* Songwriting Method

Among Cantopop's songwriting approaches, the words-first, music-later; and music-first, words-later methods are treated as compositional procedures rather than as explicit theories of tone-melody mapping.³⁴ By contrast, a theory about tone-melody mapping, the *Ling Yi Sei Saam* method is explicitly explained in *Ling Yi Sei Saam (Cantonese Lyrics Writing Handbook)*.³⁵

²⁹ Chawadon Ketkaew and Junyawan Suwannarat, "The Decline of Tone and Melody Correspondence in Modern Thai Pop Songs?: A Preliminary Analysis," in *the 20th International Congress of Phonetic Sciences*, ed. Radek Skamitzl and Jan Volin (Prague: International Phonetic Association, 2023), 590-593.

³⁰ Chawadon Ketkaew and Pittayawat Pittayaporn, "Mapping between Lexical Tones and Musical Notes in Thai Pop Songs" (paper, the 28th Pacific Asia Conference on Language, Information and Computation, Department of Linguistics, Chulalongkorn University, Phuket, Thailand, December 12-14, 2014), 160-169.

³¹ Chawadon Ketkaew, "Mapping between Tones and Musical Notes in Thai Pop Songs," PhD diss., Chulalongkorn University, 2015). (in Thai)

³² W. S. Vincie Ho, "The Tone-Melody Interface of Popular Songs Written in Tone Languages" (paper, the 9th International Conference on Music Perception and Cognition, University of Bologna, Italy, August 22-26, 2006).

³³ Chawadon Ketkaew and Pittayawat Pittayaporn, "Mapping between Lexical Tones and Musical Notes in Thai Pop Songs" (paper, the 28th Pacific Asia Conference on Language, Information and Computation, Department of Linguistics, Chulalongkorn University, Phuket, Thailand, December 12-14, 2014), 160-169.

³⁴ Man-ying Chow, "Singing the Right Tones of the Words: The Principles and Poetics of Tone-Melody Mapping in Cantopop" (Master's thesis, University of Hong Kong, 2012), 114-124.

³⁵ The Chinese characters in the title are 〇二四三 (romanised as ling yi sei saam in Cantonese), which are the numerals 0, 2, 4, 3. The full Chinese of the title with Pinyin romanization is Ling er si san 〇二四三 (Yueyu geci chuangzuo gongju 粵語歌詞創作工具) mofashu 魔法書. This book presents the author's comprehensive work that was developed over the past 40 years and that he continues to refine to this day.

Within the book, Huang's table of "Most Natural Tone-Interval Combinations for Adjacent Syllables"³⁶ presents the strictest possible rules on Cantonese songwriting, which is referenced by this study. It is conventionally called the *Ling Yi Sei Saam* lyric-writing method among Cantonese lyricists.³⁷ Since the method is originated in Cantopop, an introduction of Cantonese tones is provided.

1. Cantonese Tones: A basic understanding of Cantonese phonology will be introduced, specifically the tones of Cantonese, which can then be compared with Thai tones, as seen in Table 1. A later section outlines the principal concepts of *Ling Yi Sei Saam*, namely, ideal tone-scale degree mapping, tonal transitions, and pitch range.

The Cantonese tone system contains four levels, 1, 2, 3, and 5, of which 1 is the lowest value and 5 the highest. These are grouped into high, mid, and low, and some tones move between these levels in falling or rising contours.³⁸ We follow Chow³⁹ in naming these initial and final tone values the initial value (調頭) and the tonal target (調尾), respectively, and display the two values in brackets.⁴⁰ In the presentation of tones that follows, these values are identified for each tone even when they are the same. Tone 1 [55] is the highest level tone followed by Tone 3 [33] and Tone 6 [22]. Tone 4 [21] is considered a level tone similar to Tone 6, despite its tone value technically being a contour, because the difference is too small to be ordinarily perceived.⁴¹ There are two contour tones, Tone 2 [23] and Tone 5 [25]. Tone 7 [5], Tone 8 [3], and Tone 9 [2] are designated for checked syllables (ending in stop consonants). Their duration is slightly shorter than tones 1, 3, 4, and 6.

Note that in spoken Cantonese, Tone 1 [55] becomes a tone contour [53] in certain tonal environments, but this is rarely used in Hong Kong⁴². Below, the setting of a lyric-melody framework for the Thaipop falling tone will be discussed separately. These tones are all presented in comparison to Thai tones in Table 1.

³⁶ Zhihua Huang, *Ling Yi Sei Saam (Cantonese Lyrics Writing Handbook)* (Hong Kong: Joint Publishing, 2024), 58. (in Chinese)

³⁷ Man-ying Chow, "Singing the Right Tones of the Words: The Principles and Poetics of Tone-Melody Mapping in Cantopop" (Master's thesis, University of Hong Kong, 2012), 49.

³⁸ Yuan Ren Chao, "A System of 'Tone Letters,'" *Le Maître Phonétique* 8 (45), no. 30 (April-June 1930): 24-27.

³⁹ Terms adapted from Man-ying Chow, "Singing the Right Tones of the Words: The Principles and Poetics of Tone-Melody Mapping in Cantopop" (Master's thesis, University of Hong Kong, 2012).

⁴⁰ The components are denoted as the starting or beginning pitch level and the ending pitch level by Stephen Matthews and Virginia Yip, *Cantonese: A Comprehensive Grammar*, 2nd ed. (London: Routledge, 2011), 28.

⁴¹ Robert S. Bauer and Paul K. Benedict, *Modern Cantonese Phonology* (New York: Mouton de Gruyter, 1997), 144.

⁴² Robert S. Bauer and Paul K. Benedict, *Modern Cantonese Phonology* (New York: Mouton de Gruyter, 1997), 131-132.

Table 1 Cantonese and Thai Tones

Source: by author

Cantonese ⁴³			Thai ⁴⁴		
Tone type	Contour type	Tone value	Tone type	Contour type	Tone value
T1, T7	High-level	[55], [5]	T1	Mid	[33]
T2	High-rising	[25]	T2	Low	[21]
T3, T8	Mid-level	[33], [3]	T3	Falling	[42]
T4	Low-falling	[21]	T4	High	[334]
T5	Low-rising	[23]	T5	Rising	[213]
T6, T9	Low-level	[22], [2]			

2. Overview of the *Ling Yi Sei Saam* Method: The core of the *Ling Yi Sei Saam* method is the usage of tonal targets, symbolised by a group of characters. This mnemonic helps lyricists navigate to correct words and assign Cantonese lyrics for precomposed melodies effectively. The ideal scale degrees and tone values of the characters representing 0, 2, 4, and 3 are listed below⁴⁵:

Character	Tonal target	Scale degree
<i>Saam</i> ₍₃₎	5	III, II
<i>Sei</i> ₍₄₎	3	I
<i>Yi</i> ₍₂₎	2	VII, VI
<i>Ling</i> ₍₀₎	1	V

To clarify, an excerpt of a Cantopop song *Gaai Dang Maan Chaan* (街燈晚餐) by Janice Vidal is analysed in Example 1a. Within the dashed bracket, the arrow indicates the leading note function from scale degree VII to I, marking the melodic resolution. Notes with an asterisk above them are nonharmonic notes. In this case, the character “是” /si:²²/ is assigned to a leading note and “不” /pɛt⁵/ is set to a changing note.

⁴³ Man-ying Chow, “Singing the Right Tones of the Words: The Principles and Poetics of Tone-Melody Mapping in Cantopop” (Master’s thesis, University of Hong Kong, 2012), 10-11.

⁴⁴ Thai tone values are from Pittayawat Pittayaporn, *Vowel Lengthening in Thai: Implications for Modern Spelling* (Bangkok: Chulalongkorn University, 2016). (in Thai), where he refers to Bruce Morén and Elizabeth Zsiga, “The Lexical and Post-Lexical Phonology of Thai Tones,” *Natural Language and Linguistic Theory* 24, no. 1 (February 2006): 113-178.

⁴⁵ This table is from Zhihua Huang, *Ling Yi Sei Saam (Cantonese Lyrics Writing Handbook)* (Hong Kong: Joint Publishing, 2024), 83. (in Chinese)



Example 1a An excerpt from the verse of *Gaai Dang Maan Chaan*

Source: by Authors

Note: Music score is shown with Chinese lyrics, IPA, and the tone value written below.

This song is written in the key of D-flat major. D-flat major consists of seven notes <D $\flat$, E $\flat$, F, G, A $\flat$, B $\flat$, C>. The character “你” /nei²³/ should be set to D $\flat$. Other examples such as “長” /tsœ:ŋ²⁵/ and “大” /ta:i²²/ also match perfectly, as presented in Table 2. The tonal targets clearly match their ideal scale degrees in this excerpt. Therefore, in the first verse of *Gaai Dang Maan Chaan*, the correlation between the melody and lyrics is strictly within the ideal tone-scale degree mapping. This observation suggests that the tonal centre of the song corresponds with the characters with the tonal target of 3.

Table 2 Tone-melody mapping of *Gaai Dang Maan Chaan*

Source: by Authors

Character	IPA	Tone type	Tonal target	Scale degree
你	[nei]	T5	3	I
長	[tsœ:ŋ]	T2	5	II
大	[ta:i]	T6	2	VII

Moving beyond tone-melody correspondence, the following discussion proceeds to a sectional analysis that examines larger structural units. In this context, Huang⁴⁶ borrows the term “*zhengxian-fanxian*”⁴⁷ from traditional Cantonese music, which is a technique shifting the melodic fragments either up a perfect fifth or down a perfect fourth in pitch to flexibly expand pitch range and create expressive contrasts in Cantonese songwriting. This study suggests that the function of “*zhengxian-fanxian*” is equivalent to “transposition”

⁴⁶ Zhihua Huang, *Ling Yi Sei Saam (Cantonese Lyrics Writing Handbook)* (Hong Kong: Joint Publishing, 2024). (in Chinese)

⁴⁷ “Zhengxian-fanxian” is a concept that Huang borrows from traditional Cantonese music. He proposed “zhengxian” (正線) and “fanxian” (反線) as a way to expand pitch selection to a wider pitch range. Furthermore, zhengxian, fanxian, or yifanxian are widely used to define the tunings’ outcomes: modes. Fanxian is a relative mode of zhengxian, it is either a perfect fourth lower or a perfect fifth higher mode than zhengxian, resulting in different pitch ranges and different emotion. Borrowing this concept from Cantonese opera, Huang values the potential of mixing these modes (pitch ranges) in Cantopop music and encourages songwriters to keep this idea in mind as it expands the range and creates contrasts. See Zhihua Huang, *Ling Yi Sei Saam (Cantonese Lyrics Writing Handbook)* (Hong Kong: Joint Publishing, 2024), 83-89. (in Chinese)

in Western music theory. Therefore, the framework of ideal scale degrees and tone values of the characters expands according to the pitch range of the song. In this study, the pitch range of each song is divided into mid range and high range. Additionally, the tonal targets are low, mid, and high range across the song's pitch registers.

Throughout the chorus of *Gaai Dang Maan Chaan*, the melody undergoes several instances of pitch shifting. For example, the second phrase is a melodic sequence⁴⁸ that is a major third interval lower than the first phrase, as shown in Example 1b. Some melodic modifications on the second phrase can be observed over comparisons between “来” /lɔ:i²²/ and “福” /fuk⁵/. Overall, the phrase continues to preserve the ideal tone-melody mapping. In this study, such shifts are divided into mid range and high range. The segments are written in mid range and high range interchangeably. This passage also exhibits tonicisation, and the $\text{vii}^\circ/\text{ii} - \text{ii}$ progression indicates a brief tonicisation of ii within the harmonic context.

The musical score is divided into four systems, each with a pitch range label above it. Scale degrees are written above the notes, and tone values (numbered 1-5) are written below the lyrics. Bold text indicates extreme low range, and asterisks (*) indicate nonharmonic notes.

System 1: High range

難 (na:n 21) 道 (tou 22) 是 (si: 22) 為 (wei 22) 了 (li:u 23) 安 (ŋɔ:n 55) 置 (tsi: 33) 未 (mei 22) 來 (lɔ:i 21) 才 (tsʰɔ:i 21) 愛 (ŋɔ:i 33) 你 (nei 23)

System 2: Mid-range

要 (ji:u 33) 計 (kei 33) 算 (sy:n 33) 過 (kwɔ: 33) 安 (ŋɔ:n 55) 享 (hœ:ŋ 25) 晚 (ma:n 23) 福 (fuk 5) 便 (pi:n 22) 一 (jet 5) 起 (hei 25)

System 3: Mid and High

我 (ŋɔ: 23) 暫 (tsa:m 22) 時 (si: 21) 受 (sœu 22) 不 (pət 5) 起 (hei 25)

System 4: High and Mid

那 (na: 23) 些 (se: 55) 道 (tou 22) 理 (lei 23) 只 (tsi: 25) 想 (sœ:ŋ 25) 去 (hœy 33) 成 (se:ŋ 21) 全 (tsʰy:n 21) 自 (tsi: 25) 己 (kei 25)

A callout box points to the note 'lɔ:i' in the first system, stating: 'Tone degree 3 (scale degree IV) represented nonharmonic note. IV then transformed from ornamental note to structural note.'

Example 1b An excerpt from the chorus of *Gaai Dang Maan Chaan*

Source: by Authors

Notes: 1) Scale degrees presented in bold texts indicate extreme low range. Unlike circumstances in mid range and high range, a note from the low pitch extreme of the song remains its position regardless of the shifts of range.

Furthermore, low range only expands to the lower spectrum. 2) Notes with asterisks (*) are nonharmonic notes.

3) The bordered character indicates a context of tonicisation $\text{vii}^\circ/\text{ii} - \text{ii}$.

⁴⁸ A melodic sequence is a repetition of a motif or melodic segment where the subsequent segment is a transposition of the first segment.

Thai Tones

Thai tones have a set of phonological constraints that are absent from Cantonese. To adopt the *Ling Yi Sei Saam* method to Thaipop, we must consider the complex Thai tonal system. In Thai, the tonal realisation depends on a tripartite classification of initial consonants—high, mid, and low—and syllable types. Specifically, mid-class consonants in open syllables (ending in a vowel, semivowel, or nasal) offer the highest melodic flexibility, as they can reveal five tonal levels. In contrast, high and low-class consonants are phonologically restricted to a subset of the tonal inventory (limited to three levels), unless modified by orthographic markers or cluster rules. Furthermore, the distinction between open syllables and checked syllables introduces further constraints. Checked syllables are limited in their tonal contour and duration, often surfacing in only two levels depending on vowel length. The distribution of Thai tones is summarised in Table 3.

Table 3 Thai Tones Distribution

Source: by Authors

Syllable types	Markers/ Vowel length	High-classes	Mid-classes	Low-classes
Open syllables	unmarked	ขา [kha: ²¹³]	กา [ka: ³³]	คา [kha: ³³]
	1st tone mark	ข่า [kha: ²¹]	ก่า [ka: ²¹]	ค่า [kha: ⁴²]
	2nd tone mark	ข้า [kha: ⁴²]	ก้า [ka: ⁴²]	ค้ำ [kha: ³³⁴]
	3rd tone mark	–	ก๊า [ka: ³³⁴]	–
	4th tone mark	–	ก๋า [ka: ²¹³]	–
Checked syllables	short vowel	ซัก [khak ²¹]	ัก [kak ²¹]	คัก [khak ³³⁴]
	long vowel	ซาก [kha:k ²¹]	าก [ka:k ²¹]	คาก [khak ⁴²]

Research Methods

This study is a framework-based analytical study using the *Ling Yi Sei Saam* method. We systematically examine and contrast the features and outcomes of Cantopop and Thaipop music data to identify similarities and differences across the selected materials.

This study investigated lyric-melody correspondence in six Thaipop songs, sung in standard Thai. The analysis involved a detailed transcription and notation process for each song. This study identified the lexical tone for every word in the lyrics. The entire melodic line for each song was then notated on musical staves. Finally, the lyrics were transcribed into the International Phonetic Alphabet (IPA), with the corresponding sung pitch recorded using International Pitch Notation (IPN).

The analytical process began by defining the musical structure of each song, then involved calculating

and recording the interval values for relevant pitch intervals. At the same time, the scale and scale degrees of every song were established, written in standard music notation and Roman numeral form, respectively. Accordingly, hypothesised pitch ranges of each song were marked. All tone markings, IPA transcriptions, and notations were verified for accuracy through the authors' own analysis. The linguistic and musical data were then aligned by meticulously mapping the lyrics and tone values with the music score. Finally, the pitch range distributions of the songs were analysed to observe overall patterns.

Data Collection

The corpus comprises six songs by native Bangkok singers, which reached top one in the Thaipop music charts, notably in Top Charts and Billboard Thailand. The songs are in tempos ranging from 59 to 86 BPM. The selected songs are shown below:

1. <i>Recall</i> by BOWKYLION	Released in 2021
2. <i>Eyes Don't Lie</i> by Ink Waruntorn	Released in 2021
3. <i>Erase</i> by Ink Waruntorn	Released in 2022
4. <i>Ghost</i> by Jeff Satur	Released in 2023
5. <i>Yours Ever</i> by COCKTAIL ft. Q Flure	Released in 2024
6. <i>I'm OK // Not OK</i> by BOYdPOD ft. Billkin	Released in 2025

Research Results

Problematic falling tone in Thai

In Thaipop songwriting, Tone 3 is a double-edged tone when it conjuncts with another tone. The transitions of Tone 3 in Thai show irregularity, often appearing problematic at first glance. To address this issue, the following section proposes a threefold categorisation for tonal transitions involving the falling tone. There are eight possible combinations between the falling tone and other tones, of which mid-falling (T1–T3) and low-falling (T2–T3) are ascending transitions. Falling-low (T3–T2) shows signs of descending transition. But falling-mid (T3–T1) appears suitable for both ascending and descending, suggesting that the falling-mid transition serves as the category boundary⁴⁹. Aligning with Ho⁵⁰, Ketkaew⁵¹ suggests that the falling tone is

⁴⁹ According to Chawadon Ketkaew, "Mapping between Tones and Musical Notes in Thai Pop Songs," PhD diss., Chulalongkorn University, 2015). (in Thai), tonal transitions involving the falling tone are distributed relatively evenly between descending (50%) and ascending (34%) categories, indicating no strong preference compared to other tonal transitions. Therefore, this study proposes it as a category boundary.

⁵⁰ W. S. Vincie Ho, "The Tone-Melody Interface of Popular Songs Written in Tone Languages" (paper, the 9th International Conference on Music Perception and Cognition, University of Bologna, Italy, August 22-26, 2006).

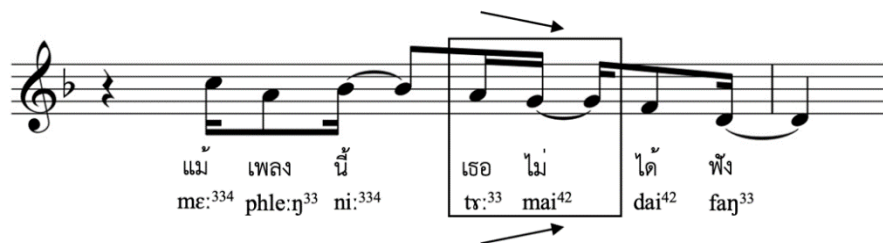
⁵¹ Chawadon Ketkaew and Pittayawat Pittayaporn, "Mapping between Lexical Tones and Musical Notes in Thai Pop Songs" (paper, the 28th Pacific Asia Conference on Language, Information and Computation, Department of Linguistics, Chulalongkorn University, Phuket, Thailand, December 12-14, 2014), 165.

perceived with the initial tone value 4 as its dominant component, considering mapping falling tone to lower notes an opposing transition. However, he added that the components of falling tone exhibit reversibility based on previous phonological findings.

In tonal languages, speech tone is a distinctive feature for determining the meaning of a word; the comprehensibility of spoken words reduces significantly if speech tones are pronounced incorrectly. However, with sufficient context, the intelligibility of an utterance is maintained. Therefore, this study has two hypotheses: 1) contexts are more important in Thai utterances because there are fewer alphasyllabaries⁵² in Thai compares to Cantonese's morphosyllabic nature; 2) the falling tone can be perceived as low-pitched tone.

In this study, instances of contrary tone-melody mapping are identified and categorised into three types: 1) meaningless; 2) possible minimal pairs of tone⁵³ that make no sense in context; 3) possible minimal pairs that make sense in context. Type I and II are commonly observed in Thai pop songs.

For instance, in *Recall* by BOWKYLION, เธอไม่ /thɯː³³ mai⁴²/ (“you won’t”) is classified as Type II (see Example 2a). First, it is sung with a stepwise descending melody, which can cause perceptual ambiguity. With a descending melody setting, /mai⁴²/ can be perceived as /mai²¹/ or /mai³³/, out of which the set เธอใหม่ /thɯː³³ mai²¹/ (“you are new”) is intelligible. However, according to the given context แม่เพลงนี้เธอไม่ได้ฟัง /mɛː³³⁴ phlɛːŋ³³ niː³³⁴ thɯː³³ mai⁴² dai⁴² faŋ³³/ (“even though you didn’t listen to this song”), the syllables will hardly be recognised as “you are new,” which indicate the context “even though new you can listen to this song,” a phrase that does not make sense in Thai. Therefore, only one sensible option “you don’t” remains in the context.



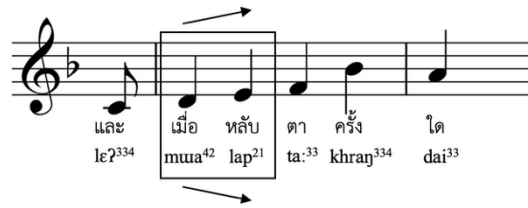
Example 2a An excerpt from the pre-chorus of *Recall*

Source: by Authors

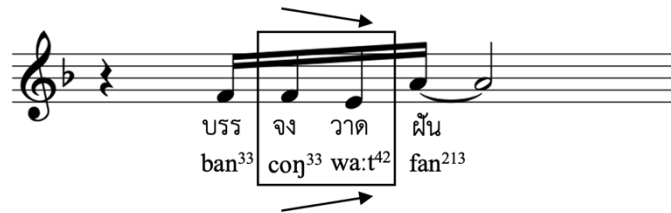
Note that out of nine contrary transitions in *Recall*, eight of them constitute a falling tone. Six of them are Type I and three of them Type II. For example, เมื่อหลับ(ตา) /mua⁴² lap²¹ (taː³³)/ (“to close one’s eye”) can be perceived as เมื่อลับ(ตา) /mua⁴² lap³³⁴ (taː³³)/ (“disappearing from sight”; see Example 2b), and จงวาด /coŋ³³ waːt⁴²/ (“please draw”) as จงหวาด /coŋ³³ waːt²¹/ (“be scared”; see Example 2c). But they are illegible based on the context. Therefore, both examples are categorised as Type II.

⁵² In Cantonese studies such as Huang and Chow’s, morphosyllable denotes a written syllable representing a morpheme; whereas in this study, alphasyllabary refers to the Thai writing system, where syllables are built from alphabetic components. In Thai, there is tonal minimal pair, composed by two words with the same phonemic structure but differing in tones and meanings, often represented by different spellings.

⁵³ Minimal pairs for tone vary in toneme, representing distinctive meanings in tone languages.

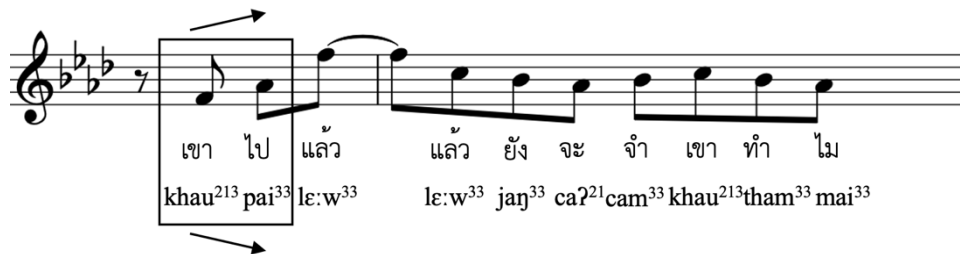
Example 2b An excerpt from the verse of *Recall*

Source: by Authors

Example 2c An excerpt from the verse of *Recall*

Source: by Authors

However, tone-melody mismatches also occur in other tonal transitions. Type I is the most common, accounting for a large proportion of the quantity. In the rest of the instances, only 5% of them are Type II or III. There is only one Type III, เขาไป /*khau*²¹³ *pai*³³/ (“he goes”) to เข้าไป /*khau*⁴² *pai*³³/ (“to enter”) in *Erase*, where the meaning of the minimal pair that matches the melody fits the context, as shown in Example 2d.

Example 2d An excerpt from the outro of *Erase*

Source: by Authors

The observed tone-melody mismatches and the irregularity of the falling tone call for a more nuanced analysis grounded in music grammar and language grammar frameworks.

Tone-Melody Mapping in Larger Melodic Structures

Prior studies have described oblique tone-melody mappings in Cantopop songs as manifestations of melodic regression. This study shows that Thaipop exhibits greater flexibility. However, this study finds that in Thaipop songs, other than the highest and lowest tonal target, consecutive mid tones are also often used as transitions to reach a higher or lower range (see Example 3), which is unlikely to be seen in Cantopop. The

shape of the melodic fragments takes dominance, while words with Tone 1 and Tone 3 (which can be perceived as a low-pitched tone) are assigned with passing notes to either descend from or to approach a high note.



Example 3 An excerpt from the outro of *Erase*

Source: by Authors

The melody setting of Tone 1 is equally distributed among ascending, descending and level transitions in Ketkaew (2015), showing a sporadic pattern. However, this can be understood within a larger melodic unit. In this study, sequences of transitions are analysed as a single melodic fragment, which constitutes main notes and ornamental notes.

In Example 4, the first segment starts with a descending four-note arpeggiated fragment $\langle E_5, D\sharp_5, B_4, G\sharp_4 \rangle$, followed by a contrasted melody $\langle B_3, E_4, F\sharp_4, G\sharp_4 \rangle$, which ascends and approaches $G\sharp_4$. The subsequent series of notes, a repeated pattern of the first descending fragment, then begins with E_5 , the highest note of the range, before gradually descending, and finally arriving at $G\sharp_4$ again. A new fragment begins at $G\sharp_3$, together with the lyric phrase, marking another structural boundary.

Example 4 An excerpt from the chorus of *I'm OK // Not OK*

Source: by Authors

The musical-linguistic relationship is as follows: the lyrics are in inverted sentence structure and sung in an undulating melody, creating a sense of discontinuity despite the uninterrupted melody. Thus, the tone-melody mapping between two instances of เปล่า /pla:u²¹/ and ที่ /thi:⁴²/ are separated by structural boundaries

and should not be classified as contrary motion. Instead, the lyric-melody relationship is defined in a larger structural context. Similarly, the major 6th interval of เป้า /pla:u²¹/ and ที่ /thi:⁴²/ and minor 7th interval between ไน /nai³³/ and แสน /se:n²¹³/ also belong to distinct phrases.

Tone-Scale Degree Mapping in Thaipop Songs

Based on the established principles of the *Ling Yi Sei Saam* method and ordering of Thai speech tones T4 = T5 > T3 > T1 > T2, we conducted an analysis on Thaipop songs' lyric-melody correspondence and propose a framework. It presents the ideal tone-scale degree mapping of Thaipop music in different pitch ranges.

In the following analysis, words are selected based on a strict set of musical criteria to ensure they represent perceptually salient events. A word must be set to a pitch that is identified as a main note, serving as a non-decorative note and possessing a larger time value. Furthermore, the selected tone must align with a musically emphasised position, specifically occurring on a strong beat and often marking the end of a phrase, or functioning as a main note from a group of surrounding pitches. This focused selection process ensures that structurally and rhythmically prominent notes are separated from ornaments, as seen in Example 5. Words associated with scale degrees I and V, tonic and dominant,⁵⁴ carry important information, whereas those marked with asterisks are considered decorative.

The image displays three staves of musical notation in G major (one sharp). The lyrics are in Thai, with tone markers (superscripts) and scale degree mappings (I, V) indicated above the notes. Asterisks mark decorative notes.

Staff 1: anacrusis (decorative), V, grace notes (decorative), I. Lyrics: ฉัน²¹³ (chan), ว่า⁴² (wa), สาย²¹³ (sai), ตา³³ (ta), เธอ³³ (tr), หลอก²¹ (lo:k), ฉัน²¹³ (chan), ไม่⁴² (mai).

Staff 2: suspension (decorative), V. Lyrics: ได้⁴² (dai), เธอ³³ (tr), อยาก²¹ (ja:k), จะ²¹ (ca?), หลอก²¹ (lo:k), ใคร³³ (khrai).

Staff 3: I, V, I. Lyrics: ก็⁴² (ko), ตาม³³ (ta:m), ใจ³³ (cai), แต่²¹ (te), อย่า²¹ (ja), มา³³ (ma), หลอก²¹ (lo:k), ฉัน²¹³ (chan), เลย³³ (ly:j).

Example 5 An excerpt from the chorus of *Eyes Don't Lie*

Source: by Authors

⁵⁴ See Iain Fenlon, "Scale," in *The New Grove Dictionary of Music and Musicians*, ed. Stanley Sadie and John Tyrrell, vol. xxii (London: Macmillan, 2001), 366, and Brian Hyer, "Tonality," in *The New Grove Dictionary of Music and Musicians*, ed. Stanley Sadie and John Tyrrell, vol. xxv (London: Macmillan, 2001), 583. For non-musicians, while popular music is largely tonal music, understanding of basic concepts of scales and keys is essential. Tonic (I) and dominant (V) are the first and fifth scale degree, which is the fundamental note for the tonality. Scales are a sequence of notes in ascending or descending order of pitch that begin and end with the tonic of the tonality. Therefore, a scale functions as the navigator in understanding music. Keys, on the other side, describes the tonic pitch class and tonality, e.g. A-flat major.

The falling tone, Tone 3, a relatively high-pitched tone, is mapped with a low pitch note on many occasions. On top of that, according to our study, it often marks the lowest pitch in the song, for example in *I'm OK // Not OK* by BOYdPOD ft. Billkin, *Erase* by Ink Waruntorn, and *Ghost* by Jeff Satur. In this case, a trigram with convex transition is frequently mapped with its inverted melodic pattern (See Example 6a-6d).



Example 6a An excerpt from *Eyes Don't Lie*

Source: by Authors



Example 6b An excerpt from *I'm OK // Not OK*

Source: by Authors



Example 6c An excerpt from the verse of *I'm OK // Not OK*

Source: by Authors



Example 6d An excerpt from the verse of *Ghost*

Source: by Authors

In subsequent analysis, *Eyes Don't Lie* was selected as a representative example to examine these principles on a larger scale, as seen in Example 7. This song is written in AABB form, with a pre-chorus between the verse and the chorus. The melody of the verse is largely confined to the mid register, with a brief occurrence of a changing note figure in the second phrase that features a high note. In contrast, the chorus fluctuates between mid and high registers and create an oscillating melodic flow. The tone-melody context shows certain flexibility in the middle of some phrases, especially the stable melodies in the verse, but clear tonal emphasis is given at the end of a segment. In short, the tone-melody mappings are strictly adhered to at the cadential points. Furthermore, the dashed borders indicate that the selected notes are structurally prominent and represent the ideal realisations of tone-scale degree mapping.

Verse

Mid

VI I VII 3 3 3 V

ไม ค่อย แน่ใจ กับ ทำ ทาง การ กระ ทำ สี หน้า เธอ ที่ สะ แดง ออก
mai khoi ne: cai kap tha: tha:ŋ ka:n kra? tham si: na: tr: thi: sa? de:ŋ ʔo:k
42 42 42 33 21 42 33 33 21 33 213 42 33 42 21 33 21

Mid

II V VII

บ้าง ที่ ก็ คิด ว่า ไซ้ แต่ บ้าง ที่ ก็ ยัง ไม่ ชั่ว
ba:ŋ thi: ko: khit wa: chai te: ba:ŋ thi: ko: jaŋ mai chua
33 33 42 334 42 42 21 33 33 42 33 42 33

Mid

VI I 3 3 3 changing note I

ไม ค่อย มันใจ เหมือน จะ รู้ แต่ ไม่ รู้ เหมือน จะ ชัด แต่ ก็ มัว
mai khoi man cai mu:an ca? ru: te: mai ru: mu:an ca? chat te: ko: mua
42 42 42 33 213 21 334 21 42 334 213 21 334 21 42 33

Pre-chorus

Mid

V II I

ไม่ รู้ คำ ตอบ มัน อยู่ ที่ ไหน
mai ru: kham ʔo:p man ju: thi: nai
42 334 33 21 33 21 42 213

Chorus

Mid High VI V

เคย ได้ ยิน ที่ ใคร เขา พูด มา อยาก รู้ ความ จริง ต้อง จ้อง มอง ที่ ตา
khri dai jin thi: khrai khau phut ma: ja:k ru: kham ciŋ ʔo:p co:ŋ mo:ŋ thi: ta:
33 42 33 42 33 213 42 33 21 334 33 33 42 42 33 42 33

Mid High High VI V IV III

เขา ว่า สาย ตา มัน หลอก กัน ไม่ ได้ เขา พูด กัน ว่า
khau wa: sa:i ta: ma:n lo:k kan mai dai khau put kan wa:
213 42 213 33 33 21 33 42 42 213 42 33 42

Mid High IV III

สาย ตา มัน เป็น สิ่ง เดียว ที่ พูด แทน หัวใจ ฉัน ว่า
sai ta: man pen siŋ diau thi: pu:t te:n hua cai chan wa:
213 33 33 33 21 33 42 42 33 213 33 213 42

Mid High V

สาย ตา เธอ หลอก ฉัน ไม่ ได้ เธอ อยาก จะ หลอก ใคร
sai ta: thr: lo:k chan mai dai thr: ja:k ca? lo:k khrai
213 33 33 21 213 42 42 33 21 21 21 33

Mid I

ก็ ตามใจ แต่อย่า มา หลอก ฉัน เลย
ko: ta:m cai te: ja: ma: lo:k chan lr:i
42 33 33 21 21 33 21 213 33

Example 7 The first section of *Eyes Don't Lie*

Source: by Authors

Notes: 1) Scale degrees presented in bold texts indicate extreme low range. Unlike in mid and high range, an extreme low note usually retains its position regardless of shifts of range. 2) Notes with asterisks (*) are nonharmonic notes.

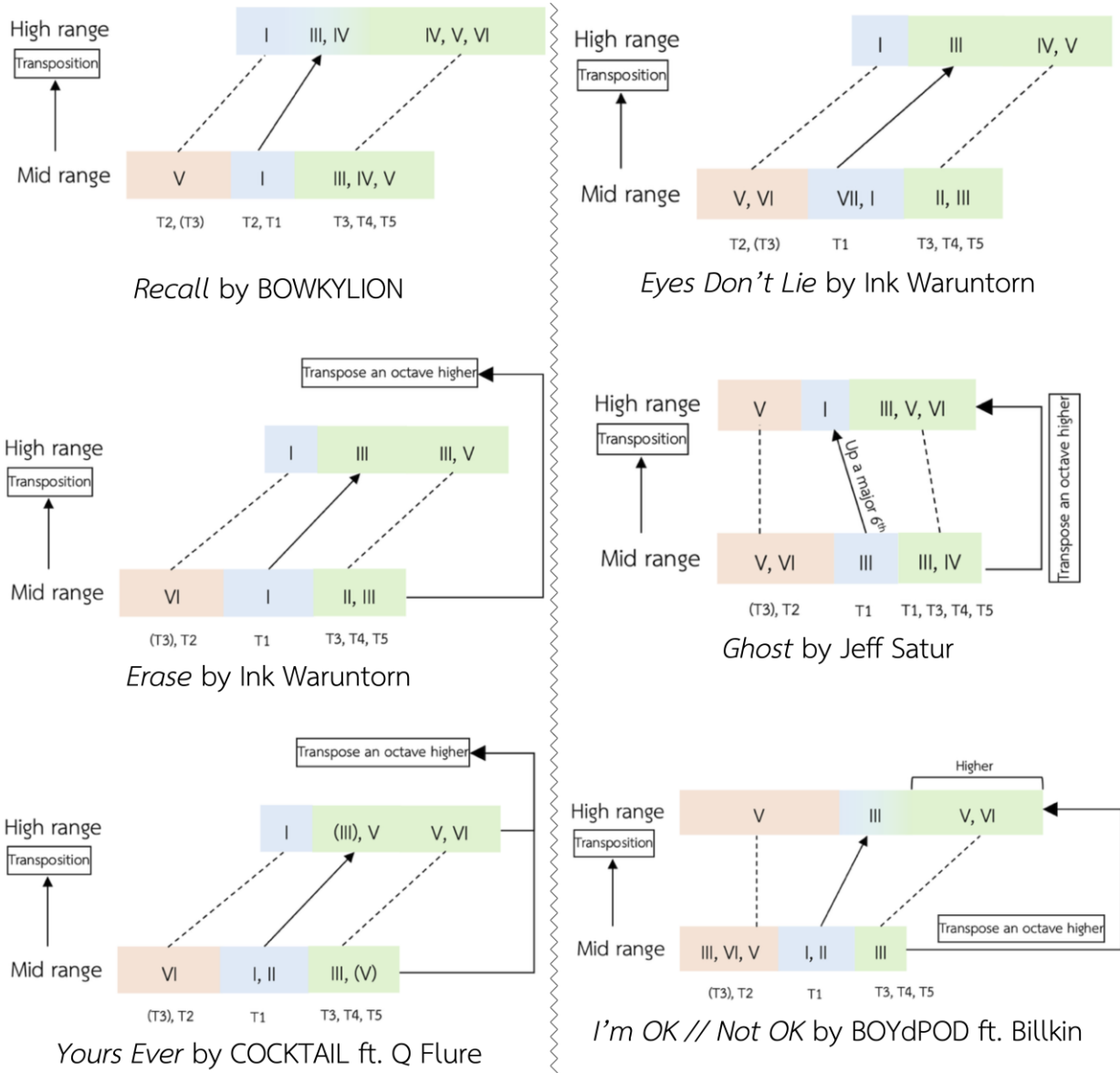


Figure 1 Tone-melody distribution in six Thai pop songs

Source: by Authors

Analysis was conducted across six songs. The result is as shown in Figure 1 (In Figure 1, orange represents low-range notes, blue represents mid-range notes, and green represents high-range notes). An ideal tone-scale degree mapping is summarised here:

Tone type	Scale degree
T3, T4, T5	II
T1	I
T2	V, VI
(T3)	V

Discussion

The Establishment of Principles

1. Adapting the Ling Yi Sei Saam Framework to Thaipop: The principles of the *Ling Yi Sei Saam* method cannot be directly applied to Thaipop songwriting without modification. To construct an ideal tone-melody mapping framework for Thaipop, careful consideration must be given to selecting and adapting only those components that are appropriate for Thai linguistic and musical settings. Initially, this study adapted the Cantonese bigram representation, where the tone value representation is straightforward. However, we encountered problems while dealing with Tone 3 [42] and Tone 5 [213]. Tone 5 is denoted as a low-rising tone but is often mapped with high-pitch notes in melodies. Tone 3, despite belonging to the high-pitch range, also exhibits quality of a low extreme, forming contrary transitions between tone and melody. Rather than sticking to a tonal target, Thai songwriting practices a more dynamic treatment of tones.

2. The Complexity of Tone 3: Despite being a high-pitch tone, Thai Tone 3 is frequently mapped to low range notes in melody segments. In this case, Ketkaew and Pittayaporn⁵⁵ suggested that common grammatical words are typically in Tone 3. This observation prompted a comparison between Cantopop and Thaipop regarding the treatment of function words in tonal pop music.

Unlike the Thai practice where function words often align with the low extreme, Cantonese song function words, such as “的” /tɨk⁵/, “得” /tɛk⁵/, and “不” /pɛt⁵/, which have a high tone [5], retain their high pitch and are not relegated to a low pitch simply because they are minor words. Therefore, this paper argues that the low-pitch characteristic sometimes observed in Thai Tone 3 does not stem from its word class. This double-edged quality of Tone 3 allows it to span from the lowest range to the highest.

Another linguistic feature common to both Cantonese and Thai is the distinction between long and short vowels. The aforementioned “的” /tɨk⁵/, “得” /tɛk⁵/, and “不” /pɛt⁵/ are all checked syllables, which result in a short duration and a single tone value [5]. Similarly, in Thai, short high-tone words like “และ” /lɛɯ³³⁴/ are sometimes paired with a low melody (e.g. in *I’m OK // Not OK, Erase and Recall*), which is contrary to the Cantonese custom of assigning such words to the high pitch extreme, for instance, in “新牌仔 (*San Paai Jai*),” “心淡 (*Sam Taam*),” “年度之歌 (*Nin Dou Ji Go*),” “街燈晚餐 (*Gaai Dang Maan Chaan*),” and “七百年後 (*Chat Baak Nin Hau*).”

3. Incorporating Tone 3 Contrary Mapping into the Thaipop Framework: This study furthermore suggests that it is necessary to include the contrary mapping of Tone 3 to the low extreme into the framework. We employed the phenomena of melodic regression and the principles of melody writing established by Western musicologists, identifying the main notes or words and auxiliary words or non-harmonic notes, thus providing

⁵⁵ Chawadon Ketkaew and Pittayawat Pittayaporn, “Mapping between Lexical Tones and Musical Notes in Thai Pop Songs” (paper, the 28th Pacific Asia Conference on Language, Information and Computation, Department of Linguistics, Chulalongkorn University, Phuket, Thailand, December 12-14, 2014), 165.

a clear grammatical viewpoint. On contrary transitions, we categorised them into three types according to intelligibility and then analysed the comprehensibility of the lyrics. We then conducted an initial analysis. Our findings show that every note and word performs its structural function in the song.

The Ideal Tone-Scale Degree Mapping of Thaipop

The preceding analysis involved examining the pitch ranges of each song and determining the structural function of individual notes while accounting for the corresponding lyric structures, resulting in a tone-scale degree mapping graph. Although every song we analyse exhibits variation, the overall distribution of tones demonstrates consistent patterns. These patterns, in the most concise manner, are shown in Figure 2.

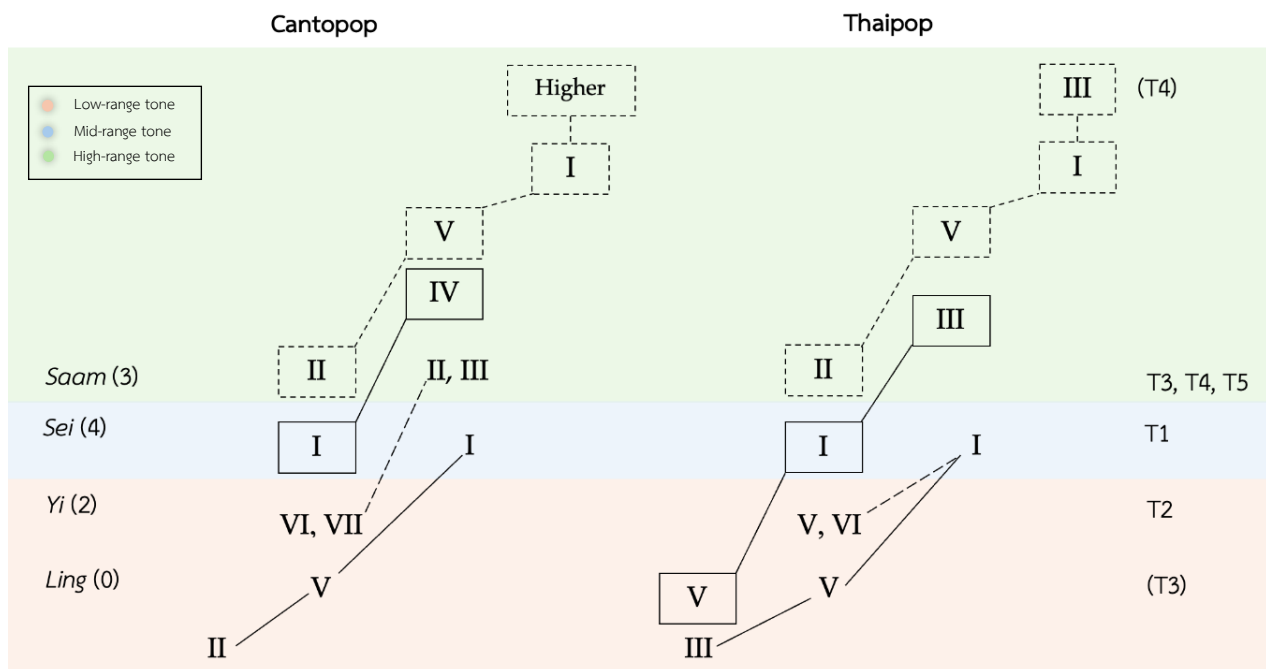


Figure 2 A comparison of tone-scale degree mapping in Cantopop and Thaipop

Source: by Authors

Figure 2 shows a comparison of tone-scale degree mapping in Cantopop and Thaipop. The graphs illustrate the centre pitch range and its extended ranges: upper and lower extended pitch range and Huang's⁵⁶ *zhengxian* and *fanxian* range. Scale degree I and its adjacent data within the same column represents the melody components of the central pitch range. Data positioned to the right is the upper extended pitch range, and to the left is the lower extended pitch range. In Cantopop, “Ling” corresponds to low-range Tone 2 and Tone 3, “Sei” to mid-range Tone 1, and “Saam” to high-range Tone 3, Tone 4, and Tone 5. “Yi” spans between the low range and middle range of Thaipop.

⁵⁶ Zhihua Huang, *Ling Yi Sei Saam (Cantonese Lyrics Writing Handbook)* (Hong Kong: Joint Publishing, 2024). (in Chinese)

Our study suggests that in Thaipop, the high-pitch range tone-melody mapping are identical in the “*zhengxian*” range, which is the centre range of Cantopop songs. Thai Tone 1 matches Cantonese in the mid range but diverges in extended ranges, with Cantonese slightly higher than Thai. Tone 2 in Thaipop is mapped to scale degree V and VI, whereas in Cantopop the equivalent tones are VI and VII. The bracketed tones in the extremities are excluded because they are used decoratively only. On a higher pitch range, Tone 1 maps to scale degree III and Tones 3, 4, and 5 to V or higher notes while Tone 2 remains in its low range, or rises to scale degree I. Tones in the higher pitch range correspond to scale degrees II and V and have a strong tendency to resolve to I (see Figure 2), showing melodic regression.

This analysis features two pitch range extremes (see bracketed Thai tones in Figure 2): the higher end of the chart is mostly represented by Tone 4, and the lower end is always represented by Tone 3, despite Tone 2 being the usual representative of the lowest speech tone range. A notable three-step interval, III–I, is at the peak of the high range, sung with a passing note or glide, which is observed in “I’m OK // Not OK.” Figure 2 shows that tonic, which is the first scale degree, is the ideal scale degree for Thai Tone 1 [33].⁵⁷ This agrees with the general tone-melody mapping of the “*Sei*” tonal target [3] to tonic in Cantopop. By contrast, Tone 2 shows stability by consistently appearing in the low pitch range, typically representing scale degrees V and VI. In addition, Thai Tones 1 and 2 demonstrate high correspondence to the expected scale degrees, while Tone 3, despite being a high-pitched tone, also frequently maps to the lowest structural pitch in the song in an ornamental manner.

Conclusion

This study proposes a preliminary methodological framework for tone-melody mapping in Thaipop by adapting principles from the Cantopop *Ling Yi Sei Saam* method. In this study, *Ling Yi Sei Saam* method is used as a framework to analyse tone-melody mapping in Thaipop music. Both Thai and Cantonese popular music are found to maintain a high degree of tone-melody correspondence to preserve the tonal information and comprehensibility of the lyrics. Our findings align with Chan⁵⁸ in that songwriters not only intentionally adapt a text’s tonal pattern to the song’s melody but also simultaneously integrate musical grammar and linguistic grammar. In addition, the functions of melodic structure and musical phenomena like melodic regression have a dominant influence on tone-melody correspondence, thus suggesting that a more nuanced and multi-layered lyric-melody analysis be used that comprehensively integrates the components of music and Thai language when developing methodological frameworks.

⁵⁷ In linguistic terms, the mid-range pitch for Thai Tone 1 is a mid-range tone, often transcribed as [33]. Similarly, the equivalent pitch for Cantonese is Tone 3, transcribed as [33]. For details in numerical representation of the tones within the speaker’s pitch range, see Henning Reetz and Allard Jongman, “Syllables and Suprasegmentals,” in *Phonetics: Transcription, Production, Acoustics, and Perception* (Chichester: John Wiley & Sons, 2009), 219.

⁵⁸ Marjorie K. M. Chan, “Tone and Melody in Cantonese” (paper, the 13th Annual Meeting of Berkeley Linguistic Society, Berkeley Linguistic Society, California, February 14-16, 1987), 26-37.

The limitations of this study lie in the scope of its analytical perspectives. Important dimensions of song, especially prosodic aspects such as rhythm and metre, are not covered in this study. Furthermore, analysing a larger vocabulary corpus of Thai song lyrics could offer further insights into lexical selection in lyric writing. An expanded song corpus would also allow broader understanding across genres and songwriters.

This study deliberately introduces the recent, systematically developed theoretical framework *Ling Yi Sei Saam (Cantonese Lyrics Writing Handbook)*. However, as the present paper is intended as a preliminary framework construction, newly introduced concepts, such as “true value,” “approximate value,” pitch adjustment strategies, pitch range contrast, and the “omnipotent phenomenon,” are beyond the scope of the present study and will be addressed in future research.

Therefore, future research could refine and expand the proposed framework, offering a more comprehensive understanding of Thaipop songwriting. The resulting insights may inspire both lyricists and composers, serving not only as a guide to prevailing practices but also as a steppingstone for experimentation. By recognising the conventions, songwriters may be better equipped to transcend them and explore new possibilities that push the expressive and structural limits of Thaipop songwriting.

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