

An Acoustic Analysis of Cantonese Lexical Tones by Chinese Youths in Seremban, Malaysia

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ABSTRACT

Cantonese is widely spoken among the Malaysian Chinese community. Cantonese speakers are not only native speakers, but also non-native speakers. One of the difficult parts of Cantonese learning is lexical tones. In view of this, this study provides an acoustic analysis of Cantonese lexical tones produced by Chinese youths in Seremban, Negeri Sembilan. This study investigates the acoustic characteristics of Cantonese lexical tones by analysing the length features and pitch features of monosyllabic words. Six female speakers participated in this study. Three of them are native Cantonese speakers, while the other three are non-native Cantonese speakers. Data analysis was conducted by using Praat. In terms of length features, T2 and T6 are the shortest smooth tones, and T7 is the shortest checked tone. In terms of pitch features, T3 and T4 had greater changes compared to the previous study. All lexical tones produced by non-native speakers, with the exception of T2, are level tones. Moreover, in both groups, the vowel duration and pitch value of T2 are relatively the same as T6, and there is a trend of combination.

Keywords: Cantonese in Malaysia, lexical tones, acoustic analysis, native and non-native speakers

INTRODUCTION

In general, Malaysian Chinese is made up of six dialect groups, which are Hokkien, Foochow, Cantonese, Teochew, Hainanese and Hakka (Ang, 2005). Ang and Lau (2012) investigated the language used by Chinese in Malaysia. The study found that the older generation prefers to communicate with their Chinese friends, colleagues and strangers in their own ancestral language; while the younger generation prefers to use Mandarin and English. Apart from that, the most widely spoken Chinese dialect among the younger generation is Cantonese. Even in the Hokkien dialect, which is the largest dialect group among Malaysian Chinese, the use of the Hokkien dialect also declined (Ang & Lau, 2012).

According to Ang and Lau (2012), Cantonese is widely spoken among the Malaysian Chinese community because it is the Chinese lingua franca in cities in the central region of Peninsular Malaysia, such as Kuala Lumpur and Ipoh, and is also influenced by the Hong Kong's entertainment industry. Many Malaysian Chinese started to learn to speak Cantonese after they entered the Cantonese-speaking environment, regardless of their dialect groups.

Problem Statement

Since there is no formal education in Cantonese in Malaysia, it is not easy to master Cantonese. Like Mandarin, Cantonese pronunciation consists of three components, which are initial, final and lexical tones. Lexical tones are used to distinguish words' meanings in the Chinese language and dialects (Zhu, 2013). The use of the wrong lexical tone may give a totally different meaning to a word. Tang (2013) stated that lexical tones are one of the difficulties in Cantonese learning, because there are only slight differences between the Cantonese lexical tones.

Research Objectives & Research Questions

In view of this, this study is meant to investigate the Cantonese lexical tone system in Seremban (in Negeri Sembilan, Malaysia) by observing the acoustic characteristics of Cantonese lexical tones. Thus, the objectives of this study are listed below:

1. To observe the length features of Cantonese lexical tones produced by Chinese youths in Seremban, Negeri Sembilan, Malaysia.
2. To observe the pitch features of Cantonese lexical tones produced by Chinese youths in Seremban, Negeri Sembilan, Malaysia.

This study is meant to answer the following research questions:

1. Is there any difference in the vowel durations of Cantonese lexical tones produced by native speakers and non-native speakers?
2. Is there any difference in the pitch values of Cantonese lexical tones produced by native speakers and non-native speakers?
3. Is there any difference in the pitch contours of Cantonese lexical tones produced by native speakers and non-native speakers?

LITERATURE REVIEW

The lexical tone system of the Chinese language and dialects

According to Chen (2000), there are four main tone categories in Middle Chinese, which are level (*Ping*), rising (*Shang*), departing/falling (*Qu*) and entering (*Ru*). As shown in Table 1, each of the tone categories may be split into two registers: high register (*Yin*) and low register (*Yang*).

Table 1
Main Tone Categories in the Middle Chinese

Tone Categories	High Register (<i>Yin</i>)	Low Register (<i>Yang</i>)
Level (<i>Ping</i>)	<i>Yinping</i>	<i>Yangping</i>
Rising (<i>Shang</i>)	<i>Yinshang</i>	<i>Yangshang</i>
Departing/Falling (<i>Qu</i>)	<i>Yinqu</i>	<i>Yangqu</i>
Entering (<i>Ru</i>)	<i>Yinru</i>	<i>Yangru</i>

(Chen, 2000)

Chen (2000) stated that, based on the syllable structure, the lexical tones can be divided into two types: smooth tones (*Shushengdiao*) and checked tones (*Cushengdiao*). The syllable of the checked tone ends with an unreleased final stop consonant (/p/, /t/, /k/), and the vowel duration of the checked tone is shorter than the smooth tone. Thus, entering (*Ru*) is a checked tone; while level (*Ping*), rising (*Shang*) and departing/falling (*Qu*) are smooth tones.

Cantonese lexical tone system

Cantonese is commonly said to have nine lexical tones. Besides the eight tone types listed in Table 1, *Yinru* in Cantonese can be separated into *Shangyinru* and *Xiayinru* depending on the length of the vowel (*Shangyinru* for short vowels and *Xiayinru* for long vowels) (Hou, 2002).

Table 2 shows the pitch values of the nine Cantonese lexical tones in China's Guangdong province and Hong Kong, retrieved from Lin (2001). The pitch value of the checked tone may be recorded with one number to indicate it as a short tone, or with two numbers to indicate its pitch contour.

Table 2
Cantonese Lexical Tone System in China

Tone Type	Tone Number	Pitch Value
<i>Yinping</i>	Tone 1 (T1)	55/53
<i>Yangping</i>	Tone 2 (T2)	21/11
<i>Yinshang</i>	Tone 3 (T3)	35
<i>Yangshang</i>	Tone 4 (T4)	13/23
<i>Yinqu</i>	Tone 5 (T5)	33
<i>Yangqu</i>	Tone 6 (T6)	22
<i>Shangyinru</i>	Tone 7 (T7)	5/55
<i>Xiayinru</i>	Tone 8 (T8)	3/33
<i>Yangru</i>	Tone 9 (T9)	2/22

(Lin, 2001)

The Cantonese lexical tone system in Kuala Lumpur, Malaysia, recorded by Chen (2003). It showed that there is basically no difference in the pitch values of the nine Cantonese lexical

tones between Kuala Lumpur (in Malaysia) and China.

Table 3
Cantonese Lexical Tone System in Kuala Lumpur, Malaysia

Tone Type	Tone Number	Pitch Value
<i>Yinping</i>	Tone 1 (T1)	55
<i>Yangping</i>	Tone 2 (T2)	21
<i>Yinshang</i>	Tone 3 (T3)	35
<i>Yangshang</i>	Tone 4 (T4)	13
<i>Yinqu</i>	Tone 5 (T5)	33
<i>Yangqu</i>	Tone 6 (T6)	22
<i>Shangyinru</i>	Tone 7 (T7)	5
<i>Xiayinru</i>	Tone 8 (T8)	3
<i>Yangru</i>	Tone 9 (T9)	2

(Chen, 2003)

However, according to Shao and Sin (2004), *Yangshang* (T4) in Kuala Lumpur Cantonese has been merged into *Yinqu* (T5). Weng (2014) also obtained a similar result in Ipoh Cantonese. In addition, Weng (2014) also mentioned that because the pitch values of *Yangping* (T2) and *Yangqu* (T6) are quite close, it is difficult for the speakers to distinguish these two lexical tones.

Chen (2003), Shao and Sin (2004), and Weng (2014) conducted the research by using the traditional method, in which the researcher relies on his/her own sense of hearing to imitate the pattern of the lexical tones. In addition, the length features of Cantonese lexical tones were not recorded in previous studies. In contrast to previous studies, the acoustic analysis method used in this study to analyse the length features and pitch features of lexical tones.

Previous studies recorded the Cantonese lexical tone system in Kuala Lumpur and Ipoh, but the Cantonese speakers in Malaysia are not only from these two cities. Cantonese is also commonly spoken among the Chinese community in Seremban, the capital of Negeri Sembilan, which is a city located in the south central region of Malaysia. Therefore, this study was carried out in Seremban. This study may provide acoustic data for the Cantonese lexical tone system in Malaysia.

METHODOLOGY

Participants

Cantonese speakers are not only native speakers, but also non-native speakers. Therefore, non-native speakers are included in this study. Three native Cantonese speakers (categorised as Group A) and three non-native Cantonese speakers (categorised as Group B) participated in this study. A native Cantonese speaker refers to a person who acquired Cantonese in early childhood and Cantonese is spoken in the family, whereas a non-native Cantonese speaker is a person who has another mother tongue than Cantonese. All participants must meet the following fundamental requirements: they must be Seremban locals and Cantonese speakers.

Liang and Wee (2016) proposed the dialect research for youths could be used to explore and ensure its continuity in the local area. Therefore, the younger generation was chosen to participate in this study. The average ages of the participants in Group A and Group B are 24 and 23 years respectively. As there are certain differences in the human voice frequency range between different genders and age groups (Lin & Wang, 2013), therefore only female were chosen as participants in this study.

Data collection

The data were collected in April 2020. The Malaysian government initiated the Movement Control Order (MCO) due to the Coronavirus Disease 2019 (COVID-19) pandemic. Therefore, the data collection process was conducted via the Internet. The participants were asked to fill in the Google Form, which includes the consent form and the general information form (see Appendix A).

According to Grillo, Brosious, Sorrell, and Anand (2016), smartphones are capable of being used for acoustic voice measures. The previous study showed that there is no significant within-subject variability across recording devices (e.g., smartphones) and software programs (e.g., Praat). Thus, the recordings were made by the participants themselves by using their own smartphones and earphones. The recordings were conducted in a quiet and undisturbed space.

This study analyses the Cantonese lexical tones by analysing the static tone. The static tone refers to the changes in pitch when a monosyllabic word is produced. Therefore, a monosyllabic word list written in Chinese characters (a total of 31 words) was provided to the participants. Two words are added at the beginning and end of the word list to avoid the page effectⁱ (Zhu, 2013). These four words are not included in the data of this study (Appendix B only shows the words used in actual data). Each participant recorded twice. A total of 162 words (27 words \times 2 times \times 3 participants) were recorded for each group.

Data analysis

The recordings were converted to WAV file format by using Audacity (Audacity Team, 2020). Data annotation and analysis was conducted by using Praat (Boersma & Weenink, 2019).

Zhu (2013) stated that the tone feature is carried by the rhyme of a syllable, which includes the nucleus and sometimes with a coda (as shown in Figure 1). Therefore, the measurements of length features and pitch features of lexical tones were taken from the rhyme. The vowel duration was used to analyse the length features of lexical tones, while the pitch value and pitch contour were used to analyse the pitch features of lexical tones. Both vowel duration and pitch value must be normalised to minimise speaker variation.

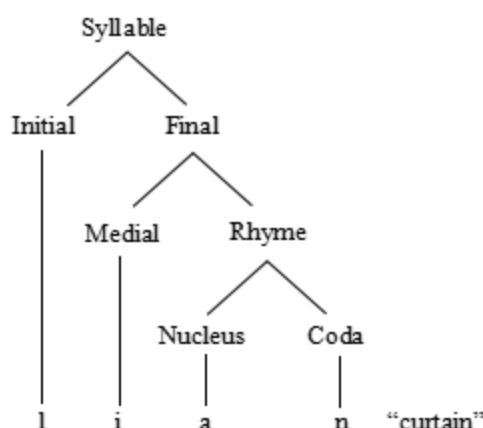


Figure 1. Structure of syllable in Chinese language and dialects (Chen, 2000)

The vowel duration is measured in seconds (s) and normalised using the formula below. As shown in Figure 2, the normalised vowel duration is the vowel duration divided by the average vowel duration of a speaker.

$$ND_i = \frac{D_i}{\frac{1}{n} \sum_{i=1}^n D_i}$$

Figure 2. Normalization formula for vowel duration (Ping, cited in Fu 2005)

The pitch value was measured by the hertz (Hz) values at 10 equidistant points in the rhyme of a syllable. The hertz (Hz) value was converted to T-value by using the normalization formula below. Among them, x is the pitch value of the measuring point, min and max are the minimum and maximum values of each speaker's pitch range.

$$T = \frac{\lg x - \lg \min}{\lg \max - \lg \min} \times 5$$

Figure 3. Normalization formula for pitch value - T-value formula (Shi, 2012)

The notation of pitch values in the Chinese language and dialects is usually transcribed using the 5-point scale proposed by Yuen Ren Chao. Therefore, the T-values have to be converted to the 5-point scale. The table below shows the interval of T-values corresponding to the 5-point scale.

Table 4

The interval of T-values corresponds to the 5-point scale

T-value	0-1.1	0.9-2.1	1.9-3.1	2.9-4.1	3.9-5
5-point scale	1	2	3	4	5

(Liu, cited in Tang & Liu 2016)

FINDINGS

The length features of Cantonese lexical tones were analysed by vowel durations, while the pitch features of Cantonese lexical tones were analysed by pitch values and pitch contours.

Length features of Cantonese lexical tones

Vowel durations of Cantonese lexical tones produced by Group A and Group B

Table 5 shows the average normalised vowel duration with the standard deviation (in parentheses) in both groups.

Table 5

Average normalised vowel duration with standard deviation

Tone Number	Group A	Group B
T1	1.38 (0.09)	1.34 (0.02)
T2	0.83 (0.05)	1.00 (0.04)
T3	1.51 (0.09)	1.56 (0.04)
T4	1.46 (0.08)	1.25 (0.10)
T5	1.45 (0.09)	1.65 (0.03)
T6	0.85 (0.07)	1.01 (0.05)
T7	0.40 (0.01)	0.31 (0.02)
T8	0.59 (0.03)	0.46 (0.03)
T9	0.52 (0.02)	0.42 (0.02)

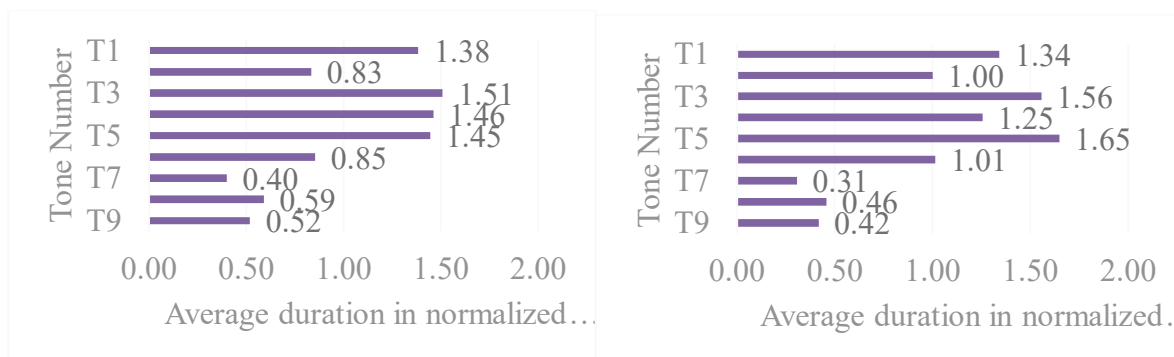


Figure 4. Vowel durations of T1-T9 in Cantonese produced by Group A (left) and Group B (right)

According to Figure 4, based on the normalised vowel duration, Cantonese lexical tones can be divided into three types: short tones, medium tones and long tones. The vowel durations of the checked tones (T7-T9) in both groups are shorter than the smooth tones (T1-T6). Therefore, T7, T8 and T9 are short tones.

For smooth tones, the normalised vowel durations of T1, T3, T4 and T5 in both groups are all close to or over 1.50. Therefore, these four lexical tones are long tones. While the normalised vowel durations of T2 and T6 in both groups are less than or equal to 1.01. Therefore, T2 and T6 are medium tones.

Pitch features of Cantonese lexical Tones

Pitch values of Cantonese lexical tones produced by Group A and Group B

The notation of pitch values is transcribed by using the 5-point scale. The pitch values of the short tones are underlined.

Table 6

Pitch values of T1-T9 in Cantonese produced by Group A and Group B

Tone Number	Pitch Values of Group A	Pitch Values of Group B
T1	55	55
T2	31	31
T3	24	33
T4	33	33
T5	33	44
T6	21	22
T7	<u>55</u>	<u>55</u>
T8	<u>43</u>	<u>33</u>
T9	<u>32</u>	<u>33</u>

As shown in the table above, the pitch values of T1, T2, T4 and T7 in both groups are the same, whereas the pitch values of T3, T5, T6, T8 and T9 are different between the two groups. Furthermore, the pitch values of T4 and T5 in Group A are the same. In Group B, the pitch values of T3 and T4 are the same, as are the pitch values of T8 and T9.

Pitch contours of Cantonese lexical tones produced by Group A and Group B

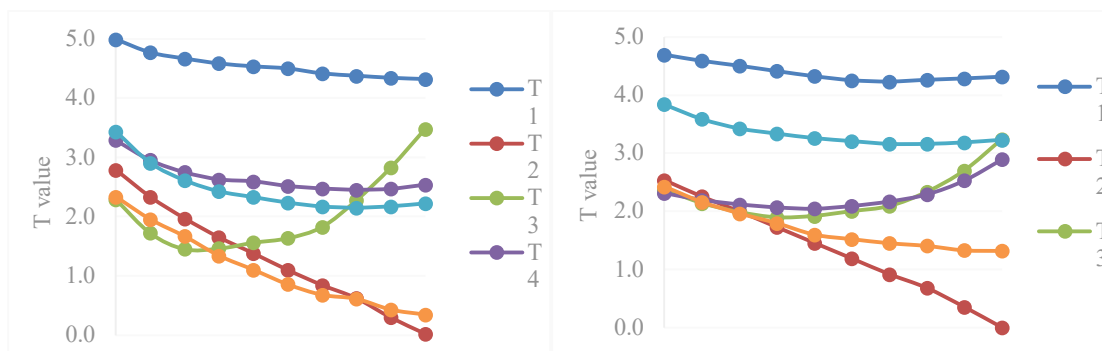


Figure 5. Pitch contours of T1-T6 in Cantonese produced by Group A (left) and Group B (right)

Figure 5 shows the pitch contours of smooth tones (T1-T6). The pitch contours of T1, T2, T4 and T5 in both groups are the same. T1 is a high-level tone, T2 is a low-falling tone, T4 is a mid-level tone, and T5 is a level tone.

The pitch contours of T3 and T6 in both groups are different. T3 in Group A is a rising tone, while T3 in Group B is a mid-level tone. T6 in Group A is a low-falling tone, while T6 in Group B is a low-level tone.

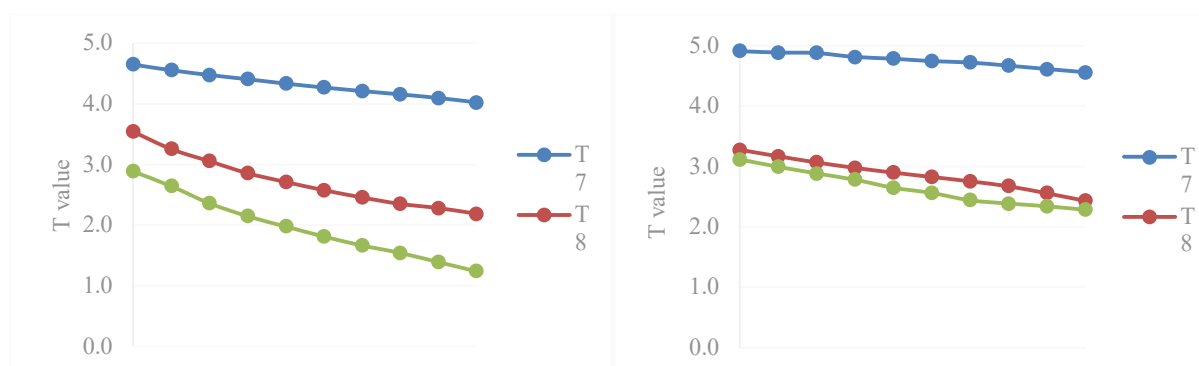


Figure 6. Pitch contours of T7-T9 in Cantonese produced by Group A (left) and Group B (right)

Figure 6 shows the pitch contours of checked tones (T7-T9). The pitch contours of T7 in both groups are the same; it is a high-level tone. In Group A, T8 and T9 are mid-falling tones. While in Group B, T8 and T9 are mid-level tones.

DISCUSSIONS

In terms of length features, Cantonese lexical tones can be divided into three groups: short tones, medium tones and long tones. All the checked tones (T7-T9) are short tones; T7 is the shortest among them. Smooth tones (T1-T6) are either long tones or medium tones. According to Bei (2010), in the Cantonese spoken in Guangzhou and Hong Kong, the vowel duration of T2 is the shortest among the smooth tones. The findings of this study are consistent with this statement. However, it is worth noting that the vowel duration of T6 is similar to T2. Both T2 and T6 are the shortest among smooth tones.

The pitch features were analysed by pitch value and pitch contour. The results for T1 in both groups are consistent with Chen (2003). T1 is a high-level tone with a pitch value of 55.

The pitch contours of T2 in both groups are consistent with Chen (2003); it is a low-falling tone. But the pitch values of T2 in both groups are slightly different from Chen (2003). The pitch value of T2 in Chen (2003) was 21, but it became 31 in this study.

The results for T3 in both groups are not the same as in Chen (2003). Chen (2003) recorded T3 as a rising tone with a pitch value of 35. In this study, T3 in Group A still remains as a rising tone, but its pitch value has become 24. However, T3 in Group B has become a mid-level tone with a pitch value of 33.

Chen (2003) recorded T4 as a rising tone with a pitch value of 13. But the findings of this study show that it has become a mid-level tone with a pitch value of 33 in both groups. Shao and Sin (2004) and Weng (2014) mentioned that T4 has been merged into T5. It means that T4 has been pronounced at the pitch value of 33 in Kuala Lumpur and Ipoh. This study demonstrates the same situation in Seremban Cantonese.

On the other hand, the pitch values and pitch contours of T3 and T4 in Group B are the

same. Cheung (2002), Yiu (2009), and Ou (2011) mentioned the combination of T3 and T4. However, these previous studies stated that the combination of T3 and T4 is either T3 pronounced as T4 or T4 pronounced as T3, which is the pitch value of 35 or 13, and it will remain as a rising tone. Yet, the result of Group B shows that both T3 and T4 have become level tones.

The pitch contours of T5 in both groups are consistent with Chen (2003); it is a level tone. But the pitch value of T5 in Group B is slightly higher than in Group A and Chen (2003). It is also worth noting that the pitch values of T3, T4 and T5 in Group B are relatively close.

T6 is a low-falling tone with a pitch value of 21 in Group A; it is slightly different from Chen (2003). But surprisingly, the result for T6 in Group B (non-native speakers) is consistent with Chen (2003); it is a low-level tone with a pitch value of 22. This implies that non-native speakers may contribute to dialect research.

In both groups, all the checked tones (T7-T9) are either falling tones or level tones. Checked tones are short tones, its pitch contour is not as obvious as the smooth tone. Therefore, there are not many differences between falling tones and level tones in checked tones. T7 in both groups keeps its original pitch value and short vowel duration. The pitch values of T8 and T9 in Group A are 43 and 32 respectively; this is basically the same as Chen (2003). T8 in Group B has a pitch value of 33, which is consistent with Chen (2003). However, the pitch value of T9 in Group B is also 33; this shows that Group B merged T9 into T8.

CONCLUSION

This study presented an acoustic analysis of Cantonese lexical tones produced by Chinese youths in Seremban, Negeri Sembilan. In this study, the acoustic characteristics of Cantonese lexical tones are investigated by analysing the length features and pitch features of monosyllabic words.

In conclusion, there are eight types of Cantonese lexical tones among native speakers, but only seven types among non-native speakers. The native speakers merged T4 into T5. While the non-native speakers merged T3 and T4 (changing both T3 and T4 from rising tone to level tone), and merged T9 into T8.

Table 7
Cantonese Lexical Tone System in Seremban, Malaysia

Tone Number	Pitch Values (Native Speakers)	Pitch Values (Non-native Speakers)
T1	55	55
T2	31	31
T3	24	33
T4	-	
T5	33	44
T6	21	22
T7	<u>55</u>	<u>55</u>
T8	<u>43</u>	<u>33</u>
T9	<u>32</u>	-

In terms of length features, the results of vowel durations in both groups are the same. Smooth tones (T1-T6) can be divided into long tones and medium tones; all checked tones (T7-T9) are short tones. Both T2 and T6 are the shortest smooth tones, and T7 is the shortest checked tone.

In terms of pitch features, it can be said that T3 and T4 had greater changes compared to the previous study. T3 in Group A remained as a rising tone, but its pitch value became 24; while T3 in Group B became a level tone with a pitch value of 33. T4 in both groups has changed from a low-rising tone to a mid-level tone with a pitch value of 33. Combined with the previous studies (Shao & Sin, 2004; Weng, 2014), it can be confirmed that T4 (a rising tone with a pitch value of 13) has completely disappeared from the Malaysian Cantonese lexical tone system.

In addition, all lexical tones produced by non-native speakers, with the exception of T2, are level tones. Furthermore, in both groups, the vowel duration and pitch value of T2 are relatively the same as T6. There is a trend of combination.

LIMITATION OF STUDY

This study may contribute to a better understanding of the Cantonese lexical tones in Malaysia and may provide references for future research in Malaysian Cantonese. However, this study has potential limitations. The sample size in this study was relatively small, and it will not be able to represent the population. The data collection process has been affected due to the COVID-19 pandemic, and the recordings were made by the speakers themselves. Therefore, future studies should take these into account, such as conducting the study with a larger sample size and the acoustic analysis method should be enhanced. For example, look at other measurements such as vowel quality, intensity and so on. Moreover, future studies may investigate the pronunciation of tone sandhi as well as the cause of tone merging.

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About the Authors

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APPENDICES

Appendix A: Consent form and general information form

马来西亚95后青年母语者与非母语者的粤语声调研究——以森美兰州芙蓉为例

马来西亚95后青年母语者与非母语者的粤语声调研究——以森美兰州芙蓉为例

您好，我是马来亚大学语言暨语言学学院中文专业本科生陈慧君（Chan Huey Jien），学号：
[REDACTED]。本人正在进行学士论文研究，题目是“马来西亚95后青年母语者与非母语者的粤语声调研究——以森美兰州芙蓉为例”。本研究的目的是为了调查母语者与非母语者粤语声调情况的异同。

您被正式邀请为本研究的发音人！

以下是参与研究信息（Lembaran Maklumat Peserta），若您同意参与本研究，将请您填写调查问卷（以中文书写），问卷填写时长约20分钟。然后，再另外进行朗读录音。

LEMBARAN MAKLUMAT PESERTA

1. Tajuk Kajian:

Analisis penghasilan nada Bahasa Kantonis dalam kalangan remaja: kajian kes Seremban, Negeri Sembilan.

2. Penyelidik:

Chan Huey Jien

Mahasiswi Sarjana Muda,

Fakulti Bahasa dan Linguistik,

Universiti Malaya,

50603 Kuala Lumpur, Malaysia.

Email: chan.hueyjien@gmail.com

Tel: [REDACTED]

3. Pensyarah:

Dr. Chiew Poh Shin

Pensyarah Kajian,

Fakulti Bahasa dan Linguistik,

Universiti Malaya,

50603 Kuala Lumpur, Malaysia.

Email: [REDACTED]

4. Pengenalan:

Maklumat berikut disediakan untuk anda memutuskan sama ada anda ingin mengambil kajian ini tentang penghasilan nada Bahasa Kantonis dalam kalangan remaja yang lahir antara tahun 1995-1999. Anda dibenarkan bertanya sebarang soalan sekiranya anda ada.

5. Tujuan:

Tujuan kajian ini adalah untuk lebih mengenalpasti penghasilan nada Bahasa Kantonis dan perbezaan antara penutur bahasa ibunda dengan penutur yang bukan bahasa ibunda.

6. Prosedur Kajian:

Kajian ini akan dijalankan sejak Mac 2020 hingga Jun 2020. Setiap peserta yang bersetuju menyertai dalam kajian ini diminta menyumbang kira-kira 1 jam. Peserta diminta menjawab soalan-soalan yang dibahagikan kepada 3 bahagian. Seterusnya, peserta diminta membaca 31 perkataan Bahasa Kantonis yang terdapat dalam jadual.

7. Penyertaan dalam Kajian:

Penyertaan dalam kajian ini adalah secara sukarela. Anda bebas menolak untuk menyertai, menamatkan penyertaan pada bila-bila masa dengan apa-apa sebab, atau menolak untuk menjawab mana-mana soalan individu tanpa penalti.

8. Faedah Kajian:

Tidak ada manfaat langsung kepada peserta.

9. Risiko kajian:

Kami percaya penyertaan dalam kajian ini adalah risiko yang minimum. Walau bagaimanapun, jika anda merasa tidak selesa sepanjang kajian, anda bebas untuk berhenti pada bila-bila masa.

10. Kerahsiaan:

Semua data yang kami kumpulkan akan dipegang dengan kesulitan. Dalam apa-apa yang kita tulis atau bentang akan menggunakan sistem pengkodan.

马来西亚95后青年母语者与非母语者的粤语声调研究——以森美兰州芙蓉为例

PERSETUJUAN PESERTA

1. Saya memahami skop penyelidikan yang dijalankan.
2. Saya berpuas hati dengan semua soalan dan penglibatan saya dalam penyelidikan ini.
3. Saya secara sukarela mengambil bahagian dalam penyelidikan ini, mengikut segala prosedur dan memberikan maklumat yang bersesuaian seperti yang diminta oleh penyelidik.
4. Saya boleh memilih untuk menarik diri daripada penyelidikan ini tanpa memberikan sebarang alasan.
5. Kecuali bagi kerosakan yang berlaku akibat daripada perlakuan cuai atau niat jahat penyelidik, saya dengan ini melepaskan penyelidik dan Universiti Malaya daripada segala tanggungan yang dikaitkan, yang timbul atau berkaitan dengan penyertaan saya serta, saya juga bersetuju untuk melepaskan penyelidik dari sebarang bahaya atau kerugian yang mungkin disebabkan oleh saya melalui penyelidikan ini.
6. Saya telah membaca dan memahami semua terma dan syarat berkenaan penglibatan saya dalam penyelidikan ini.

No. Kad Pengenalan: *

Saya bersetuju menyertai kajian ini. *

☒ Setuju

调查问卷

调查问卷是为了收集发音人的相关信息。问卷由三个部分组成：基本信息、语言生活以及对粤语的看法。

本问卷旨在收集发音人的个人资料，答案无对错之分，敬请如实作答。

第一部分：基本信息

1. 中文姓名: *

马来西亚95后青年母语者与非母语者的粤语声调研究——以森美兰州芙蓉为例

2. 马来文姓名: *

芙蓉

3. 性别: *

☐ 男

☒ 女

4. 联络方式 (手机号码): *

1995

5. 出生年份: *

1995

6. 出生地: *

芙蓉

7. 目前居住于: *

芙蓉

马来西亚95后青年母语者与非母语者的粤语声调研究——以森美兰州芙蓉为例

8. 教育程度： *

- ☐ 中学程度
- ☐ 大专程度（文凭、专业文凭）
- ☒ 大学程度（学士学位）
- ☐ 研究所程度（硕士、博士学位）

9. 职业： *

☒ 在籍大学生

☐ Other: _____

10. 您会哪几种语言？（以使用频率高至低依序排列） *

粤语、华语、英语、国语

第二部分：语言生活

1. 母语/小时候（入读小学前）最先学会的语言： *

粤语

2. 家庭主要使用语言（若多于一种，请以使用频率高至低依序排列）： *

粤语、华语

马来西亚95后青年母语者与非母语者的粤语声调研究——以森美兰州芙蓉为例

3. 平时会选择观赏哪种语言的电影、电视剧？（可多选） *

☒ 华语

☒ 英语

☐ 马来语

☒ 粤语

☐ Other: _____

4. 平时会选择聆听哪种语言的歌曲？（可多选） *

☒ 华语

☒ 英语

☐ 马来语

☒ 粤语

☐ Other: _____

5. 如果有收听电台的话，会选择收听哪种语言的电台？（可多选） *

☒ 华语

☒ 英语

☐ 马来语

☒ 粤语

☐ Other: _____

马来西亚95后青年母语者与非母语者的粤语声调研究——以森美兰州芙蓉为例

6. 您是从哪里学习到粤语? *

☒ 家庭成员

☒ 亲戚

☒ 港剧

☐ Other:

7. 您一般会对谁说粤语呢? *

☒ 家庭成员

☒ 亲戚

☒ 朋友

☒ 华裔陌生人

☐ Other:

第三部分：对粤语的看法

1. 你认为哪个地区的粤语比较地道? (只可选一项) *

☒ 中国广州

☐ 香港、澳门

☐ 北美洲、欧洲和澳洲地区

☐ 东南亚地区

2. 你认为马来西亚粤语与其他地区有何区别? 是否标准? 为什么? *

马来西亚粤语应该不太标准, 可能是受到其他语言影响所以有点懒音。

马来西亚95后青年母语者与非母语者的粤语声调研究——以森美兰州芙蓉为例

3. 你认为马来西亚国内哪一地区的粤语比较地道? *

- ☐ 吉隆坡和巴生谷一带 (八打灵再也、梳邦再也、蒲种等)
- ☐ 霹雳州怡保
- ☐ 彭亨州关丹
- ☒ 森美兰州芙蓉
- ☐ 雪兰莪州莎亚南
- ☐ Other:

4. 对自己粤语水平的评价: *

- | | | | | | | | | | |
|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|----------------------------------|-----------------------|-----------------------|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input checked="" type="radio"/> | <input type="radio"/> | <input type="radio"/> |

问卷到此结束, 谢谢您的配合!

下一个阶段就是录音了! 请根据“录音说明”的指示进行录音。(按下“Submit”键后将出现相关的链接)

如有任何疑问, 请联系调查者 (陈慧君, [\[redacted\]](#))。感谢您的参与及配合!

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Google Forms

Monosyllabic Word List		
Tone Type	Tone Number	Monosyllabic Word
<i>Yinping</i>	T1	诗 [si ⁵⁵] ('poem'), 掰 [pai ⁵⁵] ('bye'), 滩 [t'an ⁵⁵] ('beach')
<i>Yangping</i>	T2	时 [si ²¹] ('time'), 排 [p'ai ²¹] ('row'), 弹 [t'an ²¹] ('shot')
<i>Yinshang</i>	T3	使 [si ³⁵] ('make'), 摆 [pai ³⁵] ('put'), 坦 [t'an ³⁵] ('frank')
<i>Yangshang</i>	T4	市 [si ¹³] ('city'), 买 [mai ¹³] ('buy'), 懒 [lan ¹³] ('lazy')
<i>Yinqu</i>	T5	试 [si ³³] ('try'), 派 [p'ai ³³] ('assign'), 炭 [t'an ³³] ('charcoal')
<i>Yangqu</i>	T6	事 [si ²²] ('thing'), 败 [pai ²²] ('lose'), 但 [tan ²²] ('but')
<i>Shangyinru</i>	T7	识 [sik ⁵] ('know'), 不 [pət ⁵] ('no'), 粒 [lep ⁵] ('grain')
<i>Xiayinru</i>	T8	薛 [sit ³] (surname 'Xue'), 百 [pak ³] ('hundred'), 塔 [t'ap ³] ('tower')
<i>Yangru</i>	T9	涉 [sip ²] ('involve'), 白 [pak ²] ('white'), 达 [tat ²] ('reach')

ⁱ Zhu (2013) suggested adding words at the beginning and end of the word list in order to avoid the first word being pronounced high-pitched and loud, and the last word being pronounced low-pitched and softly.