



Kunming Dialect Spoken by the Native Speakers with Different Ages and Social Backgrounds from the Kunming City, China: a Case Study from the Tonal Aspect

Chenglin Nong¹, Adi Yasran Bin Abdul Aziz², Lingyann Wong³

Universiti Putra Malaysia, China¹
Universiti Putra Malaysia, Malaysia²
Universiti Putra Malaysia, Malaysia³

Abstract

The Kunming dialect, a subdialect of Yunnan, originated in southwest China. Since the 1950s, China has promoted standard Mandarin. Kunming's native speakers have witnessed changes, particularly in tones (Lu, 1990). This study investigates Kunming dialect's tonal shifts through experiments. The study has three objectives: (1) To investigate the tonal changes of native speakers from different ages at Kunming city; (2) To compare the Kunming dialect spoken by native speakers from different social backgrounds; and (3) To analyze the influence of standard Chinese pronunciation on these respondents while pronouncing the tones of Kunming dialect. The study will be analyzed using Mini-Speech-Lab software, incorporating Labov's (2001) language change theory and Shi Feng's (2008) experimental sound approaches. Its objective is to identify the linguistic rules and social factors influencing Kunming dialect's tonal changes and variations, providing valuable insights to prevent the dialect from becoming endangered.

Keywords: Standard Chinese language ; Kunming Dialect ; Tone variation ; Age

1. Introduction

Kunming, the capital of Yunnan province in southwestern China, mainly consists of the Wuhua (五华), Panlong (盘龙), Xishan (西山) and Guandu (官渡) districts. The Kunming dialect, a Southwestern dialect, emerged during the early Ming dynasty in the 14th and 15th centuries (Hammarström, Forkel, and Martin, 2017; Zeng, 2018). The Kunming dialect has experienced phonological changes, particularly in tonal features, due to the influence of Standard Chinese (Putonghua) promoted by the Chinese government since the 1950s (Lu, 1990). Dialectal heterogeneity is observed among different age groups and social background of native speakers. This study explores tonal patterns in Kunming among elderly, middle-aged, and young native speakers, addressing three research questions:

1. What are the tonal patterns found in the Kunming dialect spoken by the native speakers from different generations?

2. What are the tonal patterns found in the Kunming dialect spoken by the native speakers from different social background?

3. To what extent does the Standard Chinese language interferes the tonal patterns of the Kunming dialect spoken by the native speakers?

2. Literature Review

The Kunming dialect traces back to 1422 (Lu, 1990) in Lanmao's 'Yunluè Yìtong.' Several phonologists, such as Yang Qiong, and Li Wenzhi (1905), have used phonological methods to describe Yunnan dialects. Initially, the Kunming dialect had five tones: Yinping (阴平), Yangping (阳平), Shangsheng (上声), Qusheng (去声), and Rusheng (入声) (Zhang Yulai, 1999). Later, Ding Shengshu, Dong Tonghe, and Yang Shifeng (1940) applied modern phonetic theory and the International Phonetic Alphabet (IPA) to investigate its phonetic features, revealing that the Kunming dialect had four tones: Yinping, Yangping, Shangsheng, and Qusheng, with the Ru Sheng (入声) tone merging into the Yangping (阳平) tone.



Subsequent scholars like Lu Kailian (1990), Yan Xiaoyun, and Wu Jicai (1991) introduced a 5-tonal notation system and provided additional annotations for the Kunming dialect's tones, as represented in Table 1.

Table1 The tone type and value in Kunming dialect

Tone Type	T-value in Kunming dialect	T-value in standard Chinese	Example
Yin Ping	44	55	诗 (shī) 梯 (tī) 方 (fāng) 高 (gāo)
Yang Ping	31	35	时 (shí) 题 (tí) 石 (shí) 笛 (dí)
Shang Sheng	53	214	使 (shǐ) 体 (tǐ) 古 (gǔ) 五 (wǔ)
Qu Sheng	212 / 21	51	是 (shì) 帝 (dì) 汉 (hàn) 壮 (zhuàng)

Cai Xirui (2012) conducted experimental phonetic research on the tonal patterns of the Kunming dialect and found that variations in the rising tone occur across different generational cohorts, primarily influenced by the impact of standard Chinese influence.

Regarding the variations, Yutong Kuang (2022) conducted a study on both synchronic and diachronic variations of the Kunming dialect among different age groups. The results revealed that the tone in Kunming dialect has variations..

3. Methodology for Experimental Tonal Study

3.1 Participant

The selection of samplings was conducted in March of 2021 in Kunming. A total of 9 speakers come from urban in Kunming. To facilitate the comparison of experimental data, an additional speaker, Zhang Rude, from the Modern Chinese Dialect Sound Database. Therefore, the participants of the experiment study were total of 10 speakers. The background of all these participants is showed in the Table 2.

Table 2: The Demography of Native Speakers

Speaker	Gender	Age	Education	Career	Frequency of Speaking Standard Chinese Language
EF	Female	65	Secondary education	Accountant	Occasionally
EM1	Male	68	Secondary education	Worker	Rarely
EM2	Male	70	Tertiary Education	Corporate Employee	Rarely
MF1	Female	42	Tertiary Education	Bank Clerk	Frequently
MF2	Female	45	Tertiary Education	Media Professional	Frequently
MM	Male	37	Tertiary Education	Government Employee	Frequently
YM1	Male	25	Tertiary Education	Doctor	Frequently
YM2	Male	24	Tertiary Education	Corporate Employee	Frequently
YF	Female	20	Tertiary Education	Student	Frequently
SA*	Male	70			

(*SA recorded voice was obtained from the Modern Chinese Dialect Sound Database in 1997)



Participants were categorized into three age groups: elderly (aged 60 or above), middle-aged (30-59 years old), and youth (below 30 years old). The speaker, SA, who recorded in 1997, was over 50 years old and thus falls into the elderly group for comparison in this study.

3.2 Speech material

16 words are used for this experiment listed in the Table 1. These words were extracted from the "Chinese Dialect Investigation Word List". This list has been developed by the Institute of Linguistics, Chinese Academy of Social Sciences in 2020. Each word represents one of the four tonal categories of the Kunming dialect. These respondents were required by the researchers to read aloud each word three times and their voice will be recorded. The total amounts of the tonal patterns have 324 samples, then 16 tonal samples from the standard speaker were included, bringing the size sampled to 340.

3.3 Data collection

The Cool Editor software was used for recording participants' voice, the parameters set at 11025Hz, mono channel, and 16-bit format. Acoustic data extraction was carried out using the "Mini Speech Lab" software, which typically selected nine points from each tonal line. To standardize tonal patterns on a common scale, a relative normalization procedure was applied to derive the T-value formula (Shi, 2008): $T = \frac{(\log x - \log \min)}{(\log \max - \log \min)} \times 5$.

The resulting pentatonic scale values were calculated as follows: values between 0 and 1 were considered as 1, values between 1 and 2 as 2, and so forth, resulting in a final pentatonic scale measurement of 5 T-values (Shi, 2008).

4. Research Findings and Discussion

4.1 The First Tonal Pattern

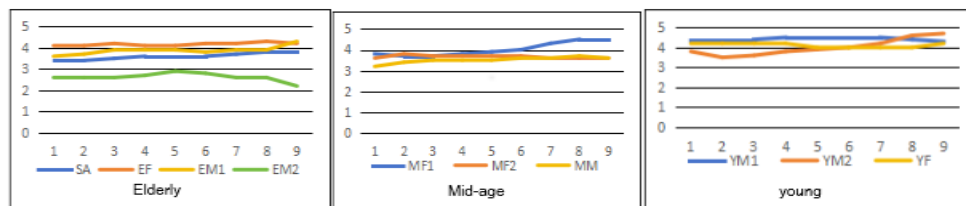


Fig.1 The First tones about Kunming dialect

Pitch variations in the first tone across different age groups are shown in Fig.1. The younger participants exhibited notably higher T-values compared to the middle-aged and elderly groups, indicating an upward trend in pitch values. Specifically, from table3 , 75% of the elderly participants had T-values of 44, with the remaining 25% having T-values of 33.

Table 3 The First tonal Pattern

The first tone T-value	The participants from younger group	The participants from the middle-aged group	The participants from the elderly group
Kunming dialect	44 (66%) ; 55 (33%)	44 (100%)	44 (75%); 33 (25%)
Standard Chinese language	55	55	55

Therefore, it can be concluded that the T-value pronounced by the elder speakers is lower than the T-value of the young speaker. T-value gradually increase with changes in age groups.

4.2 The Second Tonal Pattern

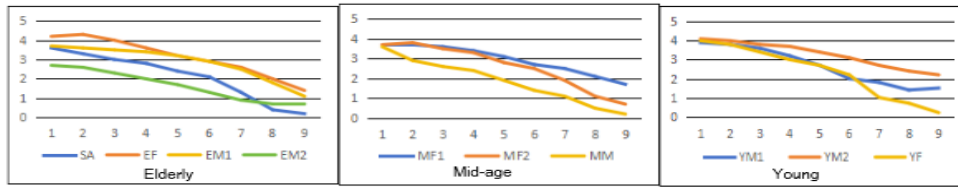


Fig.2 Fig.3 The Second tones about Kunming dialect

Based on Fig.2 ,there is no significant variation in the pitch value of the second tone among the participants from different age groups. Overall, the pitch value of the second tone quite stable. In this experiment study, except for the EM2 sample had a pitch value of 31, the measured pitch values for other participants were 42.

4.3 The Third Tonal Pattern

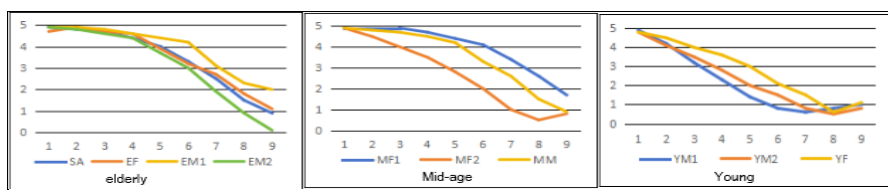


Fig.3 The Third tones about Kunming dialect

From the Fig.3, the third tone of the Kunming dialect significant variations existed among the participants from the three age groups. The tonal patterns of the participants from the elderly group showed an upward convex trend in the third tone; the participants from the middle-aged group, especially in the MF2, showed less pronounced convex pattern. Conversely, the the participants from the younger group showed a concave trend. Meanwhile, both MF2 of the participants from the middle-aged group and younger group showed a rising tonal pattern at the end, but it did not reach the value of 2. The value of the tone can be marked as 53 or 52. The third tonal pattern of the standard Chinese language are falling then rising tones. It can be found that the third tonal value produced by the participants from the younger group is a contour pattern similar as the standard Chinese language.

4.4 The Forth Tonal Pattern

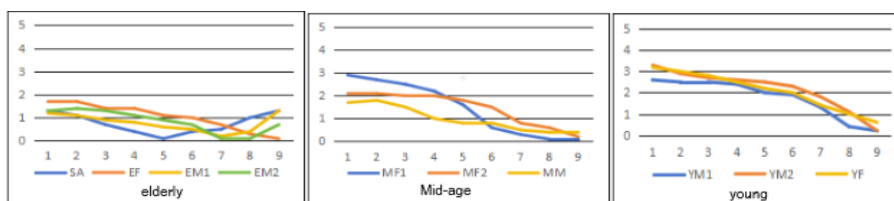


Fig.4 The Forth tones about Kunming dialect

In Fig. 4, participants from the elderly group exhibited a tonal value of 212 for SA, EM1, and EM2, resembling Lu's (1990) fourth tonal pattern. However, Lu (1990) noted that some might produce the Kunming dialect's fourth tone as 21 for convenience. In this study, only the elderly group showed a rising trend at the end of their tonal patterns. The middle-aged and younger groups had low falling tonal values like 21 or 31, lacking the contour pattern of 212. This suggests an Internal variations in language.

Regarding T-values, the main difference is in starting pitch values: the younger group started at 4 , middle-aged at 3, and the elderly at 2. T-values gradually increased from 2 to 4, going from a half-low pitch to a half-high level. The standard Chinese language's fourth tone is a high-falling tone, 51. Therefore, the younger group's T-value closely resembles the starting point of the standard Chinese fourth tone.



4.5 Social Background and Career Factor

This study found that younger and middle-aged participants frequently use standard Chinese as their primary social language due to China's language policy post-1980s. Consequently, their Kunming dialect tonal values closely resemble standard Chinese across all tones.

Special cases were observed in the elderly group (EF) and middle-aged group (MF2). One elderly participant (EF), an accountant, uses standard Chinese for client communication, resulting in tonal values resembling the younger group. However, two elderly participants (EM1 and EM2), working as ordinary employees, rarely use standard Chinese in social interactions. MF2, in the media industry, must use standard Chinese at work, affecting her Kunming dialect's tonal patterns. So, the frequency of standard Chinese usage influences Kunming dialect tonal variations.

5. Conclusion

This study aligns with the findings of previous research by Lu (1990), Cai (2012), and Kuang (2020).

Through experimental analysis we examined the tonal patterns of Kunming dialect speakers across different age, and social backgrounds. Key conclusions include:

1. The Kunming dialect consists of four tone categories, which share similarities with standard Chinese but differ in tonal values: First tone (44), Second tone (42), Third tone (52), Fourth tone (31).

2. Tonal variations were observed among participants from different age groups, with younger generations showing closer to standard Chinese.

3. Specific tonal variations were identified shown as follow: The T-value in the first tone increase with changes in age, It is similar to standard Chinese's first tone (55). The third tone of the Kunming dialect displays a rising contour at the end in young speaker, influenced by standard Chinese. The rising-falling-rising tonal pattern (212) seen in the older generation is shifting towards a low-falling pattern (21 or 31) and younger speakers in the group are closer to the forth tone (51) in standard Chinese.

4. Tonal variations in Kunming dialect are influenced by both internal and external factors. External factors include frequent use of standard Chinese, particularly among the younger generation. Internal factors relate to societal changes.

5. Social background, including daily use in standard Chinese, also affects tonal variations, particularly among the younger generation with higher education levels.

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