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Merger and transfer: Tone variation and change of Dongguan Cantonese

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Abstract

Dongguan Cantonese has eight lexical tones, duly reflecting its inheritance from Middle Chinese. Tone changes have been triggered by recent developments in the linguistic ecology of China. Thirty-two young speakers (mean age = 22.7 years), balanced for gender, participated in tone production and perception experiments. Further, 16 speakers, balanced for gender and age (half speakers' mean age = 20.8 years, and half speakers' mean age = 50.6 years), participated in a word reading task using Dongguan Cantonese Yin Ping syllables. Results show that: (i) there are perception-triggered mergers among the Yin Ping, Yin Shang, and Yang Shang tones and (ii) the Yin Ping tone is leveled and raised to become a high-flat tone, presumably due to transference from the more prestigious Putonghua or Standard Cantonese. This paper demonstrates that tone merger is influenced by the similarity of tone contour, and that words of new meaning with high frequency are more prone to tone transfer. The underlying causes of these tone shifts reflect both language internal and language external forces at work in Dongguan Cantonese.

Keywords: Tone merger; Tone transfer; Sound change; Dongguan Cantonese

1. Introduction

Dongguan Cantonese is spoken mainly in the Dongguan locality of Guangdong, China, an area of confluence of massive rural-to-urban immigration spurred by China's economic reform. In interacting with the various incoming Chinese dialects, Dongguan Cantonese must compete for social prestige, particularly against Standard Chinese (i.e., Putonghua) and Standard Cantonese.[1] This study on the Dongguan Cantonese tonal inventory shows how both dialect leveling and neutralization apply to the linguistic evolution of a new dialectal variety (see Liang and Wu, 2011 for reports on other parts of the Guangdong province).

Wang and Qian (1949) provided the earliest documentation of Dongguan Cantonese,[2] noting its tonal inventory as distinctive from other Yue dialects. Specifically, Dongguan Cantonese does not have the Yin and Yang register distinction for the Middle Chinese (MC) Qu tone category. However, Dongguan Cantonese has a three-way split for the Ru tone

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[1] Chinese languages, such as Dongguan Cantonese, Standard Cantonese, and Putonghua, are termed ''dialects'' in this paper, and they have different functions in social communication. For Standard Cantonese, some may wish for clarification between Guangzhou and Hong Kong (Cheng, 1998); however, both are not only mutually intelligible, but also share the same phonological and syntactic structures (Rao, 2000).

[2] Dongguan Cantonese in this paper refers to the Guancheng dialect. There were earlier records of the Dongguan Shilong dialect in the 19th century (Ball, 1890; Saunders, 1897), which had a different tone inventory from that of Guancheng.

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category,[3] with the complication of coda lenition accompanied by tone lengthening for some of its Ru syllables (summarized in Zhan, 2002). Interestingly, the tone distinctions reported in these earlier works appear no longer perceptible by at least some modern native speakers of Dongguan Cantonese. Further, a new high-flat tone, non-extant in earlier reports, is now attested to among these speakers. This high flat tone may have been triggered by assimilation to the more socially prestigious dialects. This paper verifies and corroborates these observations with results from experiments that reveal neutralizations and leveling of tone categories in Dongguan Cantonese induced by its language ecology.

Following this introduction, section 2 reviews the Dongguan Cantonese tones with an elicitation report on tone changes in present Dongguan Cantonese. Section 3 presents this paper's methodology for tone production and perception experiments and a word reading task. Section 4 summarizes the list of neutralizing tone categories in Dongguan Cantonese and examines the mechanism involved in tone mergers. Section 5 explores the leveling of the Yin Ping tone and unravels the factors underlying the tonal transfer. Section 6 discusses the impact of the new linguistic ecology on tone variation and change.

2. Studies of Dongguan Tones

In Table 1, numerical values represent the relative pitch levels of starting, and/or middle, and ending points of each tone, with 5 being the highest and 1 being the lowest level of a speaker's normal tonal space (Chao, 1930). Where syllables are closed by unreleased stops [-p, -t, -k] (i.e., the Ru category of MC), tone values are underlined or written as single digits to indicate the relatively shorter articulatory times of the tone. Like other Chinese languages, Dongguan Cantonese syllables are usually free morphemes and are underlying specified for tone.

As can be seen in Table 1, Dongguan Cantonese has kept seven out of the eight MC tones with consistent contour profiles over the past 60 years.[4] Wang and Qian (1949:126) described P_A's production as ''half-low rises to middle, then falls to half-low'' but assigned two values [2132/232]. These two values of P_A are preserved in Chen (1987) and Wang (2007) as [213] and Li (2010) as [132], respectively. Only R_N involves unambiguous tone change. Wang and Qian (1949:126) described R_N syllables as ''having no p-t-k-codas. . .with pitch levels starting from half-low, slightly rising/falling and then rising to half-high''. Chen (1987:214) depicted R_N as ''the pitch rising from half-low to half-high, and the lingering time during the half-low stage is slightly longer, like an attempt to extend the duration''. About 20 years later, Wang (2007) and Li (2010) reported that R_N had disappeared and merged with S_B completely.

Although longer in duration, R_N seems to share the pitch profiles of P_A, S_A, and S_B. For Wang and Qian (1949), the tonemic status of each of these three tones was established with minimal pairs, R_N [fɔ^{224}] 'a surname' being contrastive with P_A [fɔ^{232}] 'field'. However, minimal pairs between R_N and P_A are scarce. Minimal pairs between R_N and S_B are even fewer, with only two in the lexicon: [p^{h}ɛ^{224}] 'beat' / [p^{h}ɛ^{23}] 'handkerchief', and [sœ^{224}] 'tin' / [sœ^{23}] 'club'. According to Wang (2007), no speaker distinguishes between R_N and S_B. These two tones have merged.

The disappearance of R_N is a case of total obstruent coda elision with compensatory lengthening (Zhu et al., 2008). Using the *Questionnaire of Characters for Dialect Surveys* (Institute of Linguistics of Chinese Academy of Social Sciences, 2004), comprehensive elicitation from native speakers (Table 2) vindicate the disappearance of R_N.

Results show that R_N syllables have either merged with S_B or with P_A (see Wang and Qian (1949) and Wang (2007) for slightly different claims on the fate of R_N). This elicitation brought about unexpected discoveries. Speaker A cannot distinguish P_A, S_A, and S_B, while speaker B cannot distinguish S_A and S_B. Some commonly used words of the P_A tone category, e.g., [fɐn] 'cent', [kuai] 'clever', and [kɔŋ] 'a moment ago', have taken on a high and flat pitch contour by two speakers, contrary to the descriptions in Table 1. I shall call this high flat tone $P_{A\text{-}1}$.

Chen (1993:50–59) noticed $P_{A\text{-}1}$ in Dongguan Cantonese about twenty years ago but she interpreted it as the tone sandhi, a type of synchronic shift. However, these high-level tones are found in syllables spoken in isolation, thus there is no context for sandhi application. Further, no morphological properties appear to be inferable from $P_{A\text{-}1}$ syllables. Therefore, $P_{A\text{-}1}$ is not likely to be derived via one sandhi. It is a new tone in Dongguan Cantonese.

In sum, Dongguan Cantonese's tone variation and change brings forth the need to (i) identify precisely how many tone categories exhibit mergers, (ii) examine the nature of $P_{A\text{-}1}$, and (iii) figure out what mechanisms and factors are involved in tone variation and change.

[3] Ru in Middle Chinese is a rather unusual tone category, noted for its shortness in tone due to the syllable being closed by plosive (Wang Li, 1956/2004). In modern Yue dialects, Ru is well preserved and has been bifurcated into Yin Ru and Yang Ru (Matthews and Yip, 1994). Yin Ru is further divided into Yin Ru-a and Yin Ru-b, according to high/low rhyming vowels (Wang, 2011). The three-way register split for the Ru tone is common in Yue dialects.

[4] The differences of tone value among tone categories can be regarded as different impressionistic treatments of pitch level by various researchers.