The effects of context and Min dialect on the realizations of /ʐ/ variants in Taiwan Mandarin

There are four retroflex consonants in Mandarin: three voiceless sibilants /tʂ, tʂʰ, ʂ/, and one voiced sibilant /ʐ/. In Taiwan Mandarin, however, it has been widely acknowledged that all retroflexes undergo the process of deretroflexion, in which they are replaced with non-retroflex sounds. Most researchers have attributed this process to the influence of Min (Kubler 1985), which is another language widely spoken in Taiwan. This claim, nonetheless, is constantly questioned with the abundant counter-evidence provided in later studies. For example, both Li (1995) and Chuang (2008) found the effect of speech context on the degree of deretroflexion, signifying that deretroflexion is not a completely phonologized rule in Taiwan Mandarin. Since this conclusion is derived from the examination of the three voiceless retroflex sibilants only, it remains unknown whether the voiced /ʐ/ is completely deretroflexed. In this regard, it is the goal of the present study to look into /ʐ/ dertroflexion in Taiwan Mandarin, with particular interests in investigating whether it is a fully phonologized rule, and whether variant occurrence is subject to speech context, as are the voiceless retroflex sibilants.

The other aspect of /ʐ/ deretroflexion that is worth exploration is in terms of the realization of the deretroflexed variant. Kubler (1985) proposed that /ʐ/ is replaced with /dz/, the most similar non-retroflex phoneme to /ʐ/ in Min, whereas Chan (1984) found other realizations, such as /l/. Since in some Min dialects /dz/ is replaced with /l/, it is suspected that the discrepancy between these two studies results from the fact that different Min-speaking groups had been targeted at. To verify this hypothesis, the second research goal of this study is to see whether the Min dialect that Taiwan Mandarin speakers acquire would play a role with regards to the realization of /ʐ/ variants.

A production experiment was conducted accordingly. Stimuli were five /ʐ/-initial disyllabic words. To examine the effect of speech context, two types of materials were used – a wordlist and a question-answer paradigm (QA). Subjects were eight young Mandarin-Min balanced bilinguals. They were instructed to first complete the QA session, in which they spontaneously uttered the target words with the cues that the experimenter provided. Afterwards, they went on to read the wordlist. At last, they read a Min paragraph which contained 10 Min words with the /dz/ sound. The Min production test was done to check the Min dialect of each speaker.

Results showed that /ʐ/ was variably pronounced. In addition to the /dz/ and /l/ variants that are indicated in the literature, we found that a great number of the /ʐ/ tokens were actually realized as the retroflex approximant /ɻ/ and the retroflex tap /ɽ/. The preservation of retroflexion suggested that /ʐ/ deretroflexion is not yet completely phonologized in Taiwan Mandarin. Such incompleteness possibly resulted from the fact that deretroflexion is stigmatized in Taiwan Mandarin, and young speakers try to avoid it especially in careful speech. Parallel with the voiceless retroflexes, the speech context effect was likewise observed. More retroflex realizations were found in the wordlist condition than in the QA condition.

To examine the effect of Min dialect, subjects were divided into the /dz/-group and the /l/-group, based on the result of the Min production test. It was found that the lateral deretroflexed variant /l/ only occurred in the /l/-group, but never the /dz/-group. Notably, for the /l/-group, the /l/ variant also occurred less frequently in the QA session than in the wordlist condition. Taken together, the current study uncovered that there is indeed deretroflexion of /ʐ/ undergoing in Taiwan Mandarin, but this process has not attained completeness, possibly due to its negative sociolinguistic connotation, and it is sensitive to the formality of the speech context. Furthermore, for the occurrence of its deretroflexed variants, the Min dialect that individual speakers acquire is largely a determining factor.