First Language Taiwanese Tonal Attrition: Revisiting First Language Attrition Hypotheses and Their Relevance

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Most first language (L1) attrition research focuses on syntactic and morphological deterioration in environments where L1 'attriters' (Andersen, 1982) rarely have contact with their L1, such as immigrants. There is no study that investigates L1 attrition in tones and in contexts where L1 can still be often heard. This study examines this attrition type in Taiwan, where the attriters cannot speak their L1 Taiwanese fluently and have become L2-Mandarin dominant after five years old. Taiwanese, a tonal language with seven tones, involves a complicated, pervasive sandhi system. Mandarin, a tonal language with only four tones, has a simple, limited tone sandhi rule. This study investigates L1 attriters' Taiwanese tonal system by evaluating tonal attrition hypotheses based on five L1 attrition proposals in the literature. The simplification hypothesis claims that due to extensive contact with L2, the L1 grammar becomes simplified, with the more complex L1 rules being replaced by simpler L2 rules (Seliger, 1991). The interference hypothesis states that L1 attrition is mainly caused by the intrusion of the dominant language L2 (Kopke & Schmid, 2004). The markedness hypothesis holds that more marked L1 rules are subject to erosion and would eventually be substituted by less marked or unmarked corresponding L2 items (Seliger & Vago, 1991). The regression hypothesis postulates that the attrition pattern is in the reverse order of the acquisition pattern (Bardovi-Harlig & Stringer, 2010). The threshold hypothesis assumes that what is learned best is least subject to language loss (Bardovi-Harlig & Stringer, 2010; Berko-Gleason, 1982).

The data in this study are composed of natural speech (20,832 syllables in total) provided by 10 L1 Taiwanese attriters, 6 older L1 Taiwanese non-attriters, and 5 younger L1-Taiwanese L2-Mandarin bilinguals. The participants performed a film retell and a story-telling task. The results indicate that Taiwanese tones and tone sandhi are so ingrained in the attriters' phonology that the attriters are still capable of accurately performing tone sandhi and pronouncing Taiwanese tones (approximately 90% accurate). Although the attriters have become L2 Mandarin dominant, L2 interference is not observed. Given these findings, the L1 Taiwanese tonal attrition hypotheses referencing L2, such as the simplification hypotheses, cannot account for the attriters' system. Rather, attrition hypotheses referencing L1 acquisition, such as the threshold hypothesis, are more successful at accounting for the attriters' tonal system. Based on the results, we modified the threshold hypothesis: namely that very complex L1 structures learned before the shift to L2 will be resistant to L2 influence because of their complexity. There is still a larger question as to why the complex Taiwanese tone sandhi system is so well maintained in light of the presence of the competing dominant L2 Mandarin tonal system. Perhaps it is because the Taiwanese system is so complex. Tone sandhi interacts with the syntax, the semantics, the morphology and even the segmental phonology of the language. If the

complexity was learned before the onset of massive exposure to Mandarin, then we can revise slightly the threshold hypothesis by saying complicated structures that are learned well are unlikely to attrite.

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