Hidden grammar: Generalizations from Tonotactic Accidental Gaps in Mandarin Chinese

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The Chinese University of Hong Kong

Abstract

This talk explores the hidden grammar revealed by tonotactic accidental gaps (unattested syllable-tone combinations) in Mandarin Chinese. In a corpus study, we found that gaps involving T2 (rising) and T3 (falling-rising) were over-represented, while those involving T1 (high level) and T4 (falling) were under-represented. Additionally, we observed fewer T1 gaps with voiceless onsets and more T2 and T3 gaps with voiceless onsets. This aligns with cross-linguistic patterns where low-f0-initial tones (e.g., T2/T3) are more compatible with voiced onsets, and high-f0-initial tones (e.g., T1) with voiceless onsets—a pattern not readily evident in the Mandarin lexicon. We then conducted a wordlikeness rating experiment with Mandarin listeners and used harmonic scores generated by the UCLA Phonotactic Learner to model speakers' tonotactic knowledge, as reflected in their wordlikeness judgments. The ratings of tonotactic gaps were best predicted by grammars incorporating cross-linguistic markedness constraints, particularly against voiceless onsets with low-f0-initial tones and voiced onsets with high-f0-initial tones. This hidden grammar was further attested in loanword adaptation, where tones were inserted according to voicing-tone preferences to repair illegal coda consonants (e.g., *Meg* → *Méigé* for voiced-T2; *Hank* → *Hànkè* for voiceless-T4), supported by both a loanword corpus and an online adaptation experiment. The potential source of this hidden grammar will also be discussed.

Speaker

Yu-An Lu holds a BA in Foreign Languages and Literatures from National Taiwan University, an MA in Linguistics from National Tsing Hua University, and a Ph.D. in Linguistics from Stony Brook University (2012). Currently a Professor in the Department of Foreign Languages and Literatures at National Yang Ming Chiao Tung University, her research interests and expertise include laboratory phonology, second language acquisition, phonetics, and Austronesian phonology.

All Are Welcome