

Mandarin Chinese Lexical Tone Processing by Bilingual Speakers of Non-Tonal Languages

This study investigates how adult learners with Moroccan Arabic as a first language and French as a second language perceive Mandarin Chinese lexical tones at an intermediate stage of L3 acquisition. Mandarin marks lexical contrasts through pitch contours, whereas Moroccan Arabic and French use pitch primarily for intonational purposes, creating a substantial typological distance for learners. From an L3 phonological perspective, the study examines how learners from non-tonal backgrounds process tonal contrasts and whether tone perception is sensitive to tonal category and prosodic position.

Participants were HSK3-level learners of Mandarin who completed a tone identification task targeting all four Mandarin tones presented in different word positions. The results show that tone perception is not uniform across tonal categories or prosodic contexts. The high-level tone (T1) was identified most accurately overall, whereas the dipping tone (T3) and the falling tone (T4) exhibited high rates of confusion. In addition, contour tones showed clear positional asymmetries: rising, dipping, and falling tones were more reliably perceived in word-final than in word-initial position.

These findings suggest that even at an intermediate level of proficiency, L3 learners do not perceive Mandarin tones as fully stabilized phonological categories. Instead, perception appears to rely on a combination of phonetic cues, prosodic structure, and tonal markedness shaped by prior linguistic experience. The study contributes to research on L3 phonological perception and offers pedagogical insights for teaching Mandarin tone to learners from non-tonal language backgrounds.

Keywords: perception, Mandarin Chinese, prosodic position, multilingualism, Moroccan Arabic, French