

Intonational Variation as a Dialectal Marker: A Case of Malayalam

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Abstract

Dialects are the regional and social variations in language, often shaped by geographical factors and marked by differences in pronunciation, grammar, and vocabulary. Every region possesses unique customs and culture, which are closely tied to its language or dialect, and these linguistic differences preserve cultural identity. The study investigates the acoustic correlates of intonation in spontaneous speech from the speakers of two adjacent districts of Kerala, a southern state in India. The central objective is to account for the salient perceptual identity of dialects from naturally occurring speech from native speakers. The study examines dialectal distinctiveness by paying special attention to the parameters extracted, including fundamental frequency (F0), F0 range, F0 values at the vowel midpoints, pitch contour shape, pitch peak alignment, duration and speech rate. The research examines the intonational and prosodic characteristics of spontaneous speech produced by long-term residents of two major urban centres in Kerala: Thrissur (TCR) and Palakkad (PKD). Speakers aged 50–60 years, who had resided in the heart of these cities for approximately 50 years and reported having no speech or hearing impairments, were recruited as representatives of each dialect variety. Spontaneous speech data were elicited using thematic domains that include daily routine, festivals, occupational activities, food practices, educational experiences, and leisure hobbies. These domains ensured topical variety, naturalness, and the production of connected spontaneous utterances rather than monitored or formal. Both these adjacent districts present a distinct sociolinguistic and geographical context and exhibit perceptually distinct speech varieties. Thrissur, regarded as the cultural capital of Kerala, is located centrally in the state; Palakkad, situated next to Thrissur, has been historically shaped by contact with Tamil and related varieties.

The acoustic analysis reveals systematic intonational differences between regions and states that TCR speakers operate at a higher mean pitch register compared to PKD speakers, and demonstrate a wider F0 range, indicating greater melodic expansiveness in Thrissur intonation. PKD contours are predominantly falling, while TCR speakers exhibit greater contour variability, including both falling and rising patterns. TCR speakers also produce speech at a faster rate and reach lower minimum F0 values, further contributing to the wider observed pitch range. Together, these findings demonstrate that intonation constitutes a reliable, multi-parametric acoustic marker of dialectal identity in Malayalam. The research contributes to a deeper understanding of the acoustic cues of spoken Malayalam dialects and underscores the noticeable patterns of intonation. By integrating acoustic phonetics, the study aims to contribute to dialect classification and support the digital preservation of regional speech varieties in Kerala that are essential for the expansion of dialect identification systems and speech-based artificial intelligence.