

A Longitudinal Study of Speech Rate Development between 24 to 36 Months

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In typical development, one might hypothesize that speech rate increases gradually from when speech first emerges until adolescence. However, several studies have shown an absence of change in speech rate leading investigators to suggest that speech rate development does not follow a linear trajectory. The current study followed speech rate at four time points between 24-36 months. We hypothesized that 1) speech rate would increase significantly at 36 months compared to 24 months; 2) speech rate would increase in a linear pattern. Speech rate growth functions were estimated at 4 time points (24, 30, 33 and 36 months) in 12 typically developing children. Each child produced ten active declarative sentences. The duration of each ADS was determined independently by two native English speakers. Speech rate in syllables per second was calculated as the number of syllables per ADS divided by duration. Growth curve analysis was used to model the shape of rate change across the 4 time points. Across the children, speech rate increased significantly from 24 to 36 months as reflected by an increase of 0.7 syllables per second. The results further indicate that the speech rate growth function for each child during the critical 12-month period was linear and increasing, although the slope of the functions varied considerably across children. Speech rate generally increases with age but nevertheless shows considerable variation. Current speech production models and normative data do not account for early speech rate development. This study extends the window of speech rate studies to a younger population that is important for understanding typical development.