

Fast and slow listening: how speech rate shapes perception

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Abstract

Words rarely occur in isolation. Rather, they are produced in rich acoustic contexts including the preceding sentence, speech from other talkers, our own speech, background noise, etc. The temporal properties of the acoustic context (e.g., speech rate) have long been known to influence the perception of subsequent words. For instance, the perception of a Dutch vowel ambiguous between short /a/ and long /a:/ may be biased towards long /a:/ if the vowel is preceded by a precursor with a fast speech rate. Many studies in the literature have investigated this process known as rate normalization, showing that rate normalization is a general auditory phenomenon that occurs early in speech perception. However, few studies have come up with an explanatory mechanism that specifies *how* rate normalization takes place. In this talk, I will present several studies that support the view of rate normalization as an early general auditory process. Furthermore, I will propose a neural mechanism behind rate normalization, involving entrainment of endogenous neural oscillations to the rhythm of the speech signal. Behavioral and neuroimaging (MEG) experiments will be presented in support of this proposal.