

The attention orienting function of domain-final rises and the role of individual variability: Evidence from pupillometry

Maria Lialiou, University of Cologne

mlialiou@uni-koeln.de

In this talk, I will present how intonational events, particularly domain-final rises and falls, influence auditory attention and thus prominence perception, exploring the role of individual cognitive variability. Using pupil dilation response (PDR) as a proxy for attention orienting, 60 native German listeners (54f; 6m) were presented with sequences of seriatim ascending numbers (*standards*; e.g., 21 22 23 24 25 26 27 28...) with occasional out-of-the-sequence numbers (*deviants*; e.g., 25 in 21 22 23 25 26 27 28...) featuring different intonational patterns (neutral, rising, or falling). Rising intonation was predicted to evoke the strongest PDR due to its known prominence-cueing function. Cognitive variability among participants was assessed through tasks measuring processing speed, inhibitory ability, and working memory capacity. While these measures showed weak overall correlations, inhibitory ability significantly interacted with PDR patterns. Participants with stronger inhibitory skills showed sustained attention responses to rising intonation, differentiating it from both neutral and falling patterns ([rise] > [fall = neutral]). In contrast, participants with weaker inhibitory skills exhibited similar responses to both rising and falling intonation, with both patterns eliciting greater attention than the baseline neutral condition ([rise = fall > neutral]). The findings highlight individual differences in the allocation of attentional resources and suggest that rising intonation effectively captures attention across cognitive profiles. This supports the view that rises at the edges of constituents can serve as attention-orienting devices, with implications for understanding auditory processing and prosodic prominence in language.