Getting the rhythm for infant language learning

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Young infants are very sensitive to the melody and rhythm of speech (Nazzi et al. 1998). These prosodic cues help to identify lexical and syntactic units in language, and might thereby serve to bootstrap language learning (Morgan 1986). Prosodic cues are often exaggerated in child-directed speech and in songs. I will discuss possible neural mechanisms through which infants can so effectively use prosodic cues for early language learning. I will first describe two infant EEG studies addressing whether word segmentation is easier from a rhythmic stimulus (in song, and in rhythmic compared to arrhythmic speech). Then, I will present a study that looks at the importance of neuronal entrainment in infants for word segmentation. Neurons in the brain process information in a rhythmical way, and can take over the speech rhythm to focus on salient aspects of the input (Lakatos et al. 2008). I will present results of a study in which infants' neuronal sensitivity to rhythm was assessed at 7.5 months in an EEG experiment (N=108). I will discuss individual differences in infant neuronal entrainment and relate those to speech segmentation ability at 9 months and vocabulary scores at 18 and 24 months. My results will shed light on how children use the music of language for language acquisition.

References: • Lakatos, P., G. Karmos, A. D. Mehta, I. Ulbert & C. E. Schroeder. 2008. Entrainment of neuronal oscillations as a mechanism of attentional selection. *Science* 320(5872). 110–113. • Morgan, J.L. 1986. *From simple input to complex grammar*. Cambridge, MA: MIT Press. • Nazzi T., J. Bertoncini & J. Mehler. 1998. Language discrimination by newborns: Toward an understanding of the role of rhythm. *J. Exp. Psychol. Hum. Percept. Perform*. 24(3). 756–766.