Insights into the development of perceptual-motor linkages for speech: A new view from data on pre-babbling infants' processing of infant speech

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To learn to produce speech, infants must effectively monitor and assess the auditory feedback generated by their own vocalizations, which entails perceiving speech produced by an infant speaker. Yet very little is known about *how* young infants process infant-produced speech. For decades, developmental research has focused almost exclusively on infant perception of speech produced by adults, while studies using infant speech stimuli are virtually non-existent. New studies are exploring infants' perception of infant speech, and how it changes with perceptual and babbling experience to support speech and language development. Several factors may impact this developmental process. First, infant vocalizations have a unique acoustic signature due to the smaller size and distinct morphology of the infant vocal tract. Second, most infants will have little to no prior exposure to infant speech until they begin to babble. Interestingly, new data show that pre-babbling infants prefer listening to infant speech over adult speech. Moreover, infants who are highly attentive to infant speech perform better at tracking phonetic categories across speaker differences. This perceptual bias may motivate infants to vocalize more (and/or produce more speech-like sounds) and facilitate processing of their own emerging vocal production patterns. One study is underway to examine whether infants produce exploratory motor gestures that are qualitatively different in response to infant speech versus adult speech. Infants' vocal behavior will be assessed, for the first time, using ultrasound recordings of covert tongue movements, while they are presented with infant vowels versus adult vowels. A second study is tracking infants' vowel listening preferences, discrimination and production patterns longitudinally in the same infants to investigate whether perceptual biases for listening to infant speech relate to the emergence of production abilities. No studies to date employ a longitudinal design to examine the development of perceptual-motor links for speech in the same infants.