Early processing measures in mono- and multilingual infants and their link to later language skills

Katrin Skoruppa, Letizia Volpin, Salomé Schwob & Amandine Ballestraz

Institut des sciences logopédiques, Maison des sciences du langage et de la communication, Université de Neuchâtel

Decades of research have uncovered how infants' perception and processing abilities bootstrap language acquisition and correlate with later language skills, both in children with typical development and language disorders (see systematic review by Cristia et al. 2014). However, the clinical potential of infant language processing measures is far from being fully exploited, as most correlations and comparisons hold only on the level of groups, not individuals (Cristia et al. 2014). Furthermore, to our knowledge, such correlations between infant processing and later language outcomes have not been studied extensively in multilingual populations. As part of a larger project following mono- and multilingual children longitudinally during their first three years, we adapted three seminal processing tasks to visual fixation via automated eye-tracking, and tested 69 infants at 8-9 months of age (37 French monolinguals, 32 multilinguals exposed to French and one or two additional languages). We used an adapted habituation-to-criterion procedure with a test phase (12 trials) optimized for interpretation on an individual level (following Houston et al. 2007). We selected one non-linguistic, low-level auditory processing task (frequency modulation detection, Chodhoury & Benasich, 2011) and two rather subtle phonological perception tasks, one on specific phonetic categories (discrimination of /sa/-/ʃa/, Nittrouer 2001), and one on a more universal phonological phenomenon (consonant invariance, Hochmann et al. 2014). We are currently monitoring children's vocabulary through cross-linguistic parental CDIs at 12, 18 and 24 months, as well as grammar and phonology at 24 months. Interestingly, only the auditory processing task elicited a robust discrimination response, regardless of language status (see details of mixed model analyses for all three tasks in Table 1). By the time of the conference, we will have finished data collection and present and discuss analyses showing correlations with earlier processing abilities, and contrast them with other early measures (pragmatics and gesture development).