PREVERBAL INFANTS' SOUND-SHAPE ASSOCIATION WITH SINGLE-SYLLABLES

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Sound-shape correspondence (e.g. 'kiki' corresponds to spiky shapes and 'bubu' to curvy shapes) is demonstrated on adults and infants with two-syllable pseudo words (e.g. 'kiki') as audio stimuli. It is unclear whether this correspondence is at a word-object level or a perceptual feature level. We investigated this topic by testing single-syllables (e.g. 'ki') and shapes on 8-10-month-old infants in Hong Kong.

We adopted 12 syllables ('di', 'de', 'gi', 'ge', 'ki', 'ke', 'pi', 'pe', 'mo', 'mu', 'lo', 'lu') and 8 shapes (4 curvy and 4 spiky) from previous studies (Ozturk et al., 2012, Peña et al., 2011, Kirkland & Nielsen, 2009) and let 30 Chinese-speaking (Mandarin and Cantonese) adults validate the best-matched shapes (spiky or curvy) associated to the 12 selected syllables. Only those received 70% adult agreement would be used on infant testing later; 4 sharp sounds ('di', 'gi', 'ki', 'pi') and 4 round sounds ('lo', 'lu', 'mo', 'mu') passed this criterion.

For infant testing, we displayed a spiky and a curvy shape side-by-side on the screen when a selected syllable from adult rating was played. Infants' gazes were recorded by a Tobii T120 eye-tracker. We found that infants looked significantly longer to congruent pairs (spiky shape with sharp sound) 'pi', 'di' and 'gi'. They also looked longer to the incongruent pairs (according to adult rating) - spiky shape with round sound 'mu' and round shape with sharp sound 'ki'. However, there was no significant looking time difference between shapes when syllables 'lo', 'lu' and 'mo' were played.

The result suggested lip-shapes producing single-syllable stimuli may be critical for Chinese infants' sound-shape association. Our tested infants reacted less to combinations with consonants that could be produced without salient (e.g. protruding) lip-shape (/l/, /m/) to trigger sound-shape association. Future studies should take note of it when selecting appropriate stimuli.