ACOUSTICS2008/3420
Is there a sensitive period for representation of phoneme sequences?

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A key issue in development of speech perception and production concerns the possible existence of an early sensitive period that facilitates language acquisition. Spoken language acquisition entails representation of grammatical sequences of phonemes. In a two-phase experiment, 120 participants in three age groups (pre-adolescents, adolescents, young adults) were presented with 64 words, 16 each of English, English pronounceable non-words, Spanish, and Mandarin. The task was to determine if the word was English. All age groups performed well, indicating that the words had been attended. A subsequent surprise recognition phase presented 64 words again, one half of which were old and one half new. Participants judged whether each word had previously been presented. Here performance overall was poorest for Spanish and Mandarin, and children performed relatively more poorly on English non-words as compared to the older groups, but showed no age-relative disadvantage for Chinese. Arguing that evidence for a sensitive period arises if children perform relatively better than older participants on foreign words as compared to English words or English non-words, the recognition results are consistent with the proposal of a sensitive period for phoneme sequence representation. The paradigm provides a new way of examining the sensitive period hypothesis. (supported by NSERC)