

Word perception errors of children and adults in noise and quiet

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Accurate speech perception is vital for spoken language comprehension and effective communication. Especially for children, spoken word recognition is crucial for vocabulary, language, and knowledge acquisition in general. However, listening conditions in the classroom are often adverse, as classroom acoustics standards are not met and various types of noise hinder speech perception. Previous research has shown that children are more susceptible to auditory masking than adults. Although quantitative measures, such as percent correct word or phoneme scores, are commonly employed to explore differences in child vs adult performance, a qualitative analysis of the types of errors children make in comparison with those made by adults would help more accurately define the difficulties faced when recognizing speech in adverse conditions.

This study examines the quantity and quality of word errors made by children and adults in quiet and noise. Ten children and ten adults with normal hearing were asked to repeat words which were randomly extracted from a database containing 500 Modern Greek words of the form CVCV. The database was carefully assembled on the basis of word familiarity. The words, produced in a carrier phrase by a female speaker, were presented to the listeners in audio in two-talker noise and, subsequently, in quiet. Word errors were analysed both quantitatively and qualitatively. Participant performance was examined in relation to age (child vs adult), gender (male vs female), listening condition (noise vs quiet) and word familiarity (familiar vs non-familiar). In addition, error type was investigated through various qualitative measures. Percentage of phonemic alteration of the recognised as compared to the target word was calculated; place of phonemic alteration in the word was also computed. Moreover, we examined whether phonemic alteration was accompanied by semantic alteration and/or alteration in familiarity of the recognised vs the target word.

Preliminary results on general performance show that children achieve lower recognition scores than adults, in line with the literature. The error analysis is expected to reveal further differences in misconception quantity and quality between the two age groups according to the aforementioned factors.