

Comparing Children's and Adults' Intentional Switching of Auditory Selective Attention in Spatial and Noisy Acoustic Environments

Karin Loh¹, Edina Fintor², Sophie Nolden^{2,3}, Janina Fels³

¹ *Institute for Hearing Technology and Acoustics, RWTH Aachen University*

² *Institute of Psychology, RWTH Aachen University*

³ *Department of Psychology, LISCO Lab, Developmental Psychology, Goethe-University Frankfurt am Main*

Corresponding author email: karin.loh@akustik.rwth-aachen.de

Abstract

Auditory selective attention is a valuable tool to orient oneself in highly complex acoustic scenes, including spatially distributed target speakers and background noises. Among others, it includes processes of intentional attention control in spatial situations and suppression of irrelevant incoming information. This contribution provides an overview of a recent study to examine children's intentional switching of auditory selective attention compared to adults. A child-appropriate paradigm was developed to investigate effects in noisy and spatial sound environments using a virtual acoustic environment presented via headphones. A listening experiment was conducted with 24 children (6 to 10 years old) and 24 young adults (18 to 26 years old), all recruited in Germany. Results revealed a higher sensitivity to noise in children than adults and led to a faster reaction of children in the noisy condition though taking more errors into account. Nevertheless, the auditory attention flexibility was comparable between children and adults. Furthermore, it was observed that adults benefited to a greater extent than children from spatial cues regarding relevant information selection.