ACOUSTICS2008/2142
Effects of modality-dependent cuing and eye movements on sound localization

Beáta Tomoriová, Rudolf Andoga and Norbert Kopčo
Laboratory of Perception and Cognition, Technical University of Košice, Letná 9, 042 00 Košice, Slovakia

A previous study of visual and auditory hemispheric cuing in horizontal sound localization found modality-dependent effects of cuing resulting in biases in responses [Kopco, Tomoriova, Andoga, J. Acoust. Soc. Am. 121, 3094, 2007]. The previous study also suggested that some of the effects might be due to eye movements as eye fixation was not controlled. The goal of the current study was to isolate the attentional effects from the eye movement effects. An experiment identical to the previous one was performed, with the exception that the subjects were fixating the center of the audiovisual display. Localization performance was measured for transient auditory stimuli originating in the frontal horizontal plane. In most runs, a cue preceded the stimulus and indicated (correctly or incorrectly) the hemisphere (left vs. right) from which the subsequent target arrived. The cues differed by modality and the cue-to-target onset asynchrony. The listeners were instructed to focus their attention to the cued side. Compared to the previous study, a reduction in some effects was observed. However, modality-dependent biases in performance persisted, confirming that auditory spatial attentional control is modality dependent and operating on time scale of seconds. [Supported by the Slovak Science Grant Agency.]