

ACOUSTICS2008/1093
Individual differences in auditory localization of real sources in the horizontal plane

Sophie Savel
CNRS-LMA, 31, chemin Joseph Aiguier, 13402 Marseille, France

Recent studies on spatial hearing showed that individual variability is greater with virtual sources than with real ones, but that sensorial feedback provides an efficacious and rapid learning procedure. This study evaluated the degree of inter-individual variability with real sound sources in the absence of feedback. Fifty normal-hearing listeners, aged 18-62, either left- or right handed, participated. The experiment was conducted in an anechoic room. One of twelve loudspeakers placed in the frontal horizontal plane and hidden by a curtain emitted a train of low-pass pulses. Listeners had to indicate the estimated direction of that source by placing a pointer on a screen. No feedback was given to them. Each listener completed 480-720 trials. Results indicated that variability between individual was great in both resolution in bias. Precisely, individuals differed (1) in the size of their maximum error, (2) in the azimuthal region in which this maximum error occurred, and (3) in the spatial symmetry of their performance. Indeed, 25% of the listeners showed significant left-right differences in their performance, these differences always favoring the left side of space. Such asymmetries have been noticed earlier but attributed to greater front-back confusions on the right, which cannot explain the present results.