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Role of auditory timing experience on the perception and the estimation of spatial dimensions

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This research hypothesizes the influence of the rhythmic experience on perception and evaluation of spatial distances. In our experiment, the rhythmic experience is elicited by listening to different acoustical tempos produced by a metronome. For the evaluation of the spatial distance three independent groups of 60 males and females were formed by undergraduates psychology student. The three groups were differentiated on the basis of the evaluation of spatial distances. The evaluation of spatial distances was made asking subjects to reproduce by means of the distances between their own hands the estimated distances of the stimuli. The experimenter measured in cm the distance between the hands of each subject. The real evaluable distances were respectively of 30-60-90 cm. The speed frequencies were 66, 144, 192. Subject listened to each of the three frequencies, randomly presented for 15 min. At the end of each rhythmic acoustical experience, subjects were asked to evaluate the spatial distance of two vertical rods placed in a frontal plane at a distance of 1.50 from the subject. Results confirmed the hypothesis. For each stimulus situation, subjects showed a strong contraction of the evaluated distances, in relation to the increasing of the listened metronomic frequencies.