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Title: Psychological effects in the context of environmental noise perception

Author: André Fiebig, HEAD acoustics GmbH

Abstract:
There is a rich tradition of psychophysical research, but there is still a need for enhanced models of human perception of sound. Thereby, it is most likely that a fixed relation between the physical stimulus, the sound pressure signal at the ear canals, and the perception does not exist. Perception of sound depends highly on the context. In general, it is widely known that not only the physical stimulus, but numerous aspects are involved in sound perception. For example, cognitive biases could occur, which influence the way how sound is perceived and judged. However, such biases should not be understood as perceptual errors, but these effects reveal the design of the human mind. In particular, when it comes to reactions to complex environmental noises, resulting in a certain level of noise annoyance, many psychological effects can be observed. For example, adding a pleasant sound to a given noise scenario can result in lower perceived loudness. Moreover, in complex environmental noise situations, the overall appreciation depends on the individual source focus of a test subject, even if the subject is requested to assess the entire noise scenario. The paper illustrates different psychological effects, which were observed in the context of experiments investigating the perception and assessment of environmental noise.