

## **Absolute and Relative Localization Strategies in Expectation of a Distractor Sound**

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A series of studies of horizontal sound localization with a preceding distractor showed that localization responses can be biased away from the distractor location by up to 10°, even on the interleaved baseline trials on which the target was preceded by no distractor [Kopco et al., JASA, 121, 420-432, 2007; Tomoriová et al., ARO Abstract #1019, 2009; Proc. Forum Acusticum 2697-2702; 2011].

Here performance obtained in several experiments was analyzed with the goal of examining whether the observed biases might be related to a change in listener's localization strategy. In the experiments, subjects localized 2-ms frozen noise bursts presented either in the left (-11° to -79°) or the right (11° to 79°) hemifield of the frontal horizontal plane. A distractor preceded the target by 25 to 400 ms on some trials. Distractor's location was fixed throughout a run, either ahead or on the side of the listener, and its frequency of occurrence was parametrically varied.

Since the distractor always came from a known location, the listeners could use it as an anchor for computing a relative position of the following target. Therefore, the observed biases might be a consequence of listeners' switching between an absolute localization strategy, used when no distractor is presented, and a relative strategy, used when the distractor information can be used. To assess this hypothesis, three response measures were analyzed, separately for the responses in the runs with and without the distractors: standard deviations, correlation coefficients, and temporal drifts in response biases. Improvements in some of the measures were observed on the distractor runs. This result suggests that the distractor can provide additional relative information for target localization, and that listeners change their strategies to benefit from this information.

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