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TITLE: Streaming and sound localization with a preceding distractor

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ABSTRACT BODY:

A previous study of sound localization with a preceding distractor showed that 1) the distractor affects response bias and response variance for distractor-target inter-stimulus-intervals of up to 400 ms, and that 2) localization responses are biased away from the distractor even on interleaved control trials in which the target is presented alone [Kopco et al., JASA, 121, 420-432, 2007]. Neural mechanisms operating on time scales of milliseconds to tens of seconds are likely to cause to these effects. The current study examined how perceptual organization affects target localization performance. Sound localization was examined for 2-ms click target stimuli. On 80% of trials the target was preceded by a distractor, designed either to be grouped with the target (distractor was an identical 2-ms click) or to be perceived in a separate stream (an isochronous train of 8 clicks whose inter-click-interval was different from the distractor-target inter-stimulus-interval). As hypothesized, the single-click distractor affected target localization more than the 8-click distractor. On the other hand, the biases in the control trials were greater for the 8-click distractor. These results indicate that performance is influenced by both top-down mechanisms like streaming and bottom-up mechanisms like stimulus distribution-based adaptation.

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