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# Spatial Aspects of Contextual Plasticity in Sound Localization

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A previous study examining the effect of a preceding distractor on sound localization (Kopco et al., JASA, 121, 420-432, 2007) found that responses were biased even in control trials on which no distractor was presented. These shifts in baseline responses are referred to as ”contextual plasticity”.
In current study we examine the spatial aspects of the contextual effect by varying the spatial arrangement of the context. Subjects' task in the experiment was to localize a 2-ms noise burst presented from one of the seven target locations spaced symmetrically relative to medial plane or interaural axis. Target was in 75% of trials preceded by an identical distractor presented from the center of the target locations range 25 ms before the target. Trials with distractor were restricted to be presented in one of the three spatial configurations fixed within a block of trials (either in the left or right half of the positions range, or using the full range). To estimate the effect of the context, the responses were compared to a baseline block consisting of no-distractor trials only.
Contextual biases away from the distractor were found for both distractor locations. The biases depended on configuration of distractor trials. The half- range configurations elicited biases in the corresponding part of the range while no biases were observed for the other half. These results suggest that the representations of auditory space can be altered by the spatial specifics of the context in which a task is performed.
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