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Localization-based segregation of acoustic sources: advantages and limitations

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It has been suggested [Divenyi, P., & Oliver, S.K., (1989), JASA 85, 2042-2052] that segregation of simultaneous pairs of sounds in the horizontal plane requires both resolution of the azimuthal separation between the sources, and correct assignment of each signal to the correct source. In fact, contrary to our a priori expectations, localization did not emerge as the dominant dimension underlying segregation of source pairs: its importance often fell behind that of segregation based on differences of spectral or temporal envelope structure, except for some listeners. Nevertheless, the possibility remains that these limitations can be attributed to localization dominance by one of the sources or both. The dual requirement of localization and signal-to-source assignment, in addition to reverberation, may represent a limiting factor for the role of localization in the cocktail-party effect.