

Sound localization at cocktail parties is easier for men

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Differences in male and female behaviour are often subject to study. Women are known to be more verbally fluent, have better manual dexterity and are better at noticing things (like a new haircut). Men on the other hand often take less time parking their cars and have less trouble than women in navigating in a new city. The latter capacities, in which men tend to excel, are known as visuo-spatial abilities. A new study has demonstrated that men have a similar advantage in their hearing. The findings are published in the June 2011 issue of *Cortex*.

Ida Zündorf from the Center of Neurology at Tübingen University, together with Prof. Hans-Otto Karnath and Dr. Jörg Lewald, investigated the audio-spatial abilities in healthy men and women by means of a sound-localization task. Participants were asked to listen to sounds and determine the location of the sound source, either by pointing towards it or by naming the exact position (e.g. 45 degrees left). At first, sounds were presented one at a time and both men and women accomplished the task with great accuracy. Later, several sounds were presented simultaneously and participants had to focus on and localize only one sound. This is known as the cocktail party phenomenon – the human capacity to detect and focus on one particular sound source in a noisy environment. Interestingly, women found the second task much more difficult, compared to men, to the extent that in some cases they even thought the sounds were coming from the opposite direction.

These results suggest that men are not only better at visuo-spatial tasks, but also in auditory-spatial tasks. Since this male advantage was only

found in the cocktail party situation, i.e. [women](#) performed equally well when sounds were presented one at a time, this indicates that the difference is related to a "high attentional mechanism" in the brain specifically involved in extracting spatial information of one particular sound source in a noisy environment. It has been speculated that [men](#) have developed these [spatial abilities](#) as the result of natural and sexual selection throughout human evolution.

More information: The article is "Male advantage in sound localization at cocktail parties" by Ida C. Zündorf, Hans-Otto Karnath and Jörg Lewald, and appears in Cortex, Volume 47, Issue 6 (June 2011). www.sciencedirect.com/science/journal/00109452

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