

How does the brain perceive fragmented sound?

The brain's ability to reconstruct fragmented sounds allows us to successfully carry on a conversation in a noisy room. Now, a new Dutch study throws up interesting insights into how the brain allows us to perceive a physically interrupted sound as being continuous.

'In our day-to-day lives, sounds we wish to pay attention to may be distorted or masked by background noise, which means that some of the information gets lost,' explains senior study author, Lars Riecke of cognitive neuroscience at Maastricht University.

'In spite of this, our brains manage to fill in the information gaps, giving us an overall 'image' of the sound,' adds Riecke.

Riecke and colleagues were interested in unravelling neural (nerve cell related) mechanisms associated with sound continuity illusion, where a physically interrupted sound is heard as continuing through background noise.

Researchers investigated the timing of processes associated with the encoding of physically interrupted sounds and their auditory restoration, respectively, says a Maastricht University release.

Interestingly, slow brain waves called theta oscillations, which are involved in encoding boundaries of sounds, were suppressed during an interruption in a sound when that sound was illusorily restored.

Taken together, the findings reveal a novel mechanism that enhances our understanding of the constructive nature of human hearing.

These findings were published in the Wednesday issue of Neuron.

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