

## PSYCHIATRY

### The origin of hallucinations

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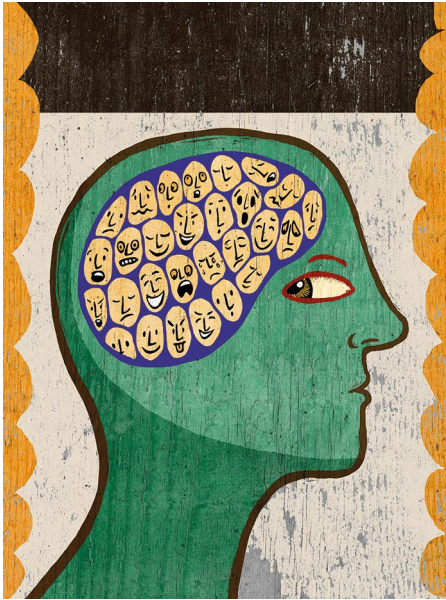


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Hearing voices is a phenomenon that doesn't only occur in people with schizophrenia. But why do some people hallucinate voices, and what are the neural foundations of these hallucinations?

Combining behavioural measures, brain imaging and computational modelling, Albert Powers of Yale University, USA,

and colleagues show that participants who hallucinate hearing voices in everyday life rely too much on their expectations, rather than auditory input. The authors used a task in which tones and images initially appear together, and tested whether participants hallucinate tones when images were later presented without tones.

Voice-hearing participants — both healthy and psychotic — were more likely to mistakenly report tones. Auditory brain areas were activated when participants mistakenly reported tones, suggesting that hallucinations involved actual perception. Computational analysis of behaviour and brain activity showed that those hearing voices in daily life were more influenced by beliefs about the presence of tones and connection to images. In addition, patients with schizophrenia had trouble updating their beliefs.

This study advances our understanding of why some people experience hallucinations, and how people requiring treatment for schizophrenia differ from others. It remains to be seen whether this translates to better diagnosis and treatment.

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