Hallucinations in the flash of an eye

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Dominic H. ffytche at the Institute of Psychiatry in London reviews what we do know and moves the field forward, by introducing a new experimental approach to studying hallucinations as they occur.

Ever seen or heard something that wasn't there? For most of us such experiences - termed hallucinations - are a normal, fleeting, brain glitch; yet for a few they are persistent, distressing and associated with a range of psychiatric, neurological and eye conditions.

In the September Issue of *Cortex* (http://www.sciencedirect.com/science/journal/00109452) Dominic H. ffytche at the Institute of Psychiatry in London reviews what we do know and moves the field forward, by introducing a new experimental approach to studying hallucinations as they occur.

Surprisingly little is known about brain changes that occur during hallucinations because of their brief, unpredictable nature. One cannot anticipate when a hallucination will occur, so the chances of capturing one during a brain scanning experiment are small. It has long been recognized that flashes of light at particular frequencies produce hallucinations of intricate patterns and vivid colours. Using a combination of brain imaging methods in normal subjects, the author harnesses the technique to examine localized changes in brain activity and changes in brain connections during hallucinations.

"We observed increases in activity in visual brain regions", says ffytche, "Increases in visual connection strength and an alteration in relationship

between visual relay and receiving stations, together suggesting that hallucinations were caused by a transient form of 'blindness'".

The work highlights the need to consider the hallucinating brain from a wider perspective than previously thought. Changes in both localized brain activity and in connections between brain areas occur during hallucinations, raising further questions as to how these changes interact with pre-existing abnormalities in patients susceptible to hallucinations.

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