

# Researchers explore secret origin of déjà vu

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(Medical Xpress) -- Most people have been in a situation that suddenly feels strangely familiar, while also realizing that they have never been in that specific place before. These experiences are called 'déjà vu' and the phenomenon has inspired countless books, songs and movies.

What is remarkable about déjà vu, says Western University graduate student Chris Martin, is that the impression of familiarity is accompanied by a sense that the current environment or situation should in fact feel new. But how can it be that a scene or an experience evokes a sense of familiarity but at the same time a feeling that this familiarity is wrong?

Despite the curiosity and excitement about déjà vu in popular culture, these subjective experiences remain poorly understood in scientific terms. Studying déjà vu has proven difficult due to the fleeting nature of these obscure occurrences, and due to the lack of experimental procedures to elicit them in the psychological laboratory.

In an article published online by *Neuropsychologia*, "Déjà Vu in Unilateral Temporal-Lobe Epilepsy is Associated with Selective Familiarity Impairments on Experimental Tasks of Recognition Memory," Martin and psychology professor Stefan Köhler were able to shed light on this fascinating phenomenon by examining a rare group of neurological patients that experience déjà vu as an early sign of advancing seizures.

Due to lasting underlying brain pathology, most patients with temporal

lobe epilepsy exhibit subtle impairments in memory even at times when no seizures are present. Köhler and his team built on this link by seeking behavioural markers of déjà vu on specific memory tasks that were designed to probe feelings of familiarity. The researchers discovered a pattern of performance that clearly distinguished patients with déjà vu from those without.

Specifically, familiarity was selectively impaired only in individuals with déjà vu in their seizure profile. In an experiment that placed different types of memories in conflict, patients with déjà vu were still able to counteract inappropriate feelings of [familiarity](#) with their ability to recollect pertinent information about previous actual events.

These findings, say Köhler and Martin, open a new window towards understanding the psychological and neural mechanisms that give rise to fleeting, subjective feelings of déjà vu. Köhler says they remind us that even when lasting for just a split second, memory [experiences](#) reflect the interplay of many different, sometimes competing processes. On another level, these findings are also of clinical relevance in the surgical treatment of temporal lobe epilepsy.

The study was conducted at Western's Brain and Mind Institute, in collaboration with clinical scientists at the London Health Sciences Centre and McGill University.

Provided by University of Western Ontario

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