

The psychology of déjà vu

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All of us have experienced being in a new place and feeling certain that we have been there before. This mysterious feeling, commonly known as déjà vu, occurs when we feel that a new situation is familiar, even if there is evidence that the situation could not have occurred previously. For a long time, this eerie sensation has been attributed to everything from paranormal disturbances to neurological disorders. However, in recent years, as more scientists began studying this phenomenon, a number of theories about déjà vu have emerged, suggesting that it is not merely a glitch in our brain's memory system.

A new report by Colorado State University psychologist Anne M. Cleary, published in *Current Directions in Psychological Science*, a journal of the Association for Psychological Science, describes recent findings about déjà vu, including the many similarities that exist between déjà vu and our understanding of human recognition memory.

Recognition memory is the type of memory that allows us to realize that what we are currently experiencing has already been experienced before, such as when we recognize a friend on the street or hear a familiar song on the radio. The brain fluctuates between two different types of recognition memory: recollection and familiarity. Recollection-based recognition occurs when we can pinpoint an instance when a current situation has previously occurred. For example, seeing a familiar man at a store and realizing that we've seen him before on the bus. On the other hand, familiarity-based recognition occurs when our current situation feels familiar, but we don't remember when it has happened before. For example, we see that familiar man in the store, but we just can't

remember where we know him from. Déjà vu is believed to be an example of familiarity-based recognition—during déjà vu, we are convinced that we recognize the situation, but we are not sure why.

Cleary conducted experiments testing familiarity-based recognition in which participants were given a list of celebrity names. Later on, they were shown a collection of celebrity photographs; some photographs corresponded to the names on the list, other photographs did not. The volunteers were told to identify the celebrities in the photographs and indicate how likely it was the celebrity's names were on the list they had seen previously. The findings were surprising. Even when the volunteers were unable to identify a celebrity by photo, they had a sense of which names they had studied earlier and which they had not. That is, they couldn't identify the source of their familiarity with the celebrity, but they knew the celebrity was familiar to them. Cleary repeated the experiment substituting famous places (such as Stonehenge and the Taj Majal) for celebrities and got similar results. These findings indicate that the participants stored a little bit of the memory, but it was hazy, so they were not able to connect it to the new experience.

Cleary also ran experiments to figure out what features or elements of situations could trigger feelings of familiarity. She had participants study a random list of words. During a word recognition test, some of the words on the test resembled the earlier words, although only in sound (e.g. lady sounds similar to eighty), but the volunteers reported a sense of familiarity for the new words, even when they could not recall the earlier-presented, similar-sounding words that were the source of this familiarity. Previous research has also shown that people feel familiarity when shown a visual fragment containing isolated geometric shapes from an earlier experience. This suggests that familiar geometric shapes may create the sense that an entire new scene has been viewed before.

These results support the idea that events and episodes which we

experience are stored in our memory as individual elements or fragments of that event. Déjà vu may occur when specific aspects of a current situation resemble certain aspects of previously occurring situations; if there is a lot of overlap between the elements of the new and old situations, we get a strong feeling of familiarity. "Many parallels between explanations of déjà vu and theories of human recognition memory exist", Cleary concludes, "Theories of familiarity-based recognition and the laboratory methods used to study it may be especially useful for elucidating the processes underlying déjà vu experiences."

Source: Association for Psychological Science

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