

# Déjà vu

**Déjà vu** (/ˌdɛɪʒɑː ˈvuː, - ˈvjuː/ ( listen)<sup>[1][2]</sup> *DAY-zhah-VOO*, -*VEW*; French: [deʒa vy]) is the feeling that one has lived through the present situation before.<sup>[3][4][5][6]</sup> This is a French phrase translating literally to "already seen". Although some interpret *déjà vu* in a paranormal context,<sup>[7]</sup> mainstream scientific approaches reject the explanation of *déjà vu* as "precognition" or "prophecy".<sup>[3][4][5][6]</sup> It is an anomaly of memory whereby, despite the strong sense of recollection, the time, place, and practical context of the "previous" experience are uncertain or believed to be impossible.<sup>[8][9][10]</sup> Two types of *déjà vu* are recognized: the pathological *déjà vu* usually associated with epilepsy or that which, when unusually prolonged or frequent, or associated with other symptoms such as hallucinations, may be an indicator of neurological or psychiatric illness,<sup>[11]</sup> and the non-pathological type characteristic of healthy people, about two-thirds of whom have had *déjà vu* experiences.<sup>[12][13][14][15][16]</sup> People who travel often or frequently watch films are more likely to experience *déjà vu* than others.<sup>[17]</sup> Furthermore, people also tend to experience *déjà vu* more in fragile conditions or under high pressure, and research shows that the experience of *déjà vu* also decreases with age.<sup>[18]</sup>

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## Medical disorders

*Déjà vu* is associated with temporal lobe epilepsy.<sup>[19][20]</sup> This experience is a neurological anomaly related to epileptic electrical discharge in the brain, creating a strong sensation that an event or experience currently being experienced has already been experienced in the past.

Migraines with aura are also associated with *deja vu*.<sup>[21]</sup>

Early researchers tried to establish a link between *déjà vu* and mental disorders such as anxiety, dissociative identity disorder and schizophrenia but failed to find correlations of any diagnostic value.<sup>[22]</sup> No special association has been found between *déjà vu* and schizophrenia.<sup>[23][24]</sup> A 2008 study found that *déjà vu* experiences are unlikely to be pathological dissociative experiences.<sup>[25]</sup>

Some research has looked into genetics when considering *déjà vu*. Although there is not currently a gene associated with *déjà vu*, the LGII gene on chromosome 10 is being studied for a possible link. Certain forms of the gene are associated with a mild form of epilepsy, and, though by no means a certainty, *déjà vu*, along with *jamaïs vu*, occurs often enough during seizures (such as simple partial seizures) that researchers have reason to suspect a link.<sup>[26]</sup>

## Pharmacology

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Certain drugs increase the chances of *déjà vu* occurring in the user, resulting in a strong sensation that an event or experience currently being experienced has already been experienced in the past. Some pharmaceutical drugs, when taken together, have also been implicated in the cause of *déjà vu*. Taiminen and Jääskeläinen (2001)<sup>[27]</sup> reported the case of an otherwise healthy male who started experiencing intense and recurrent sensations of *déjà vu* upon taking the drugs amantadine and phenylpropanolamine together to relieve flu symptoms. He found the experience so interesting that he completed the full course of his treatment and reported it to the psychologists to write up as a case study. Because of the dopaminergic action of the drugs and previous findings from electrode stimulation of the brain (e.g. Bancaud, Brunet-Bourgin, Chauvel, & Halgren, 1994),<sup>[28]</sup> Tamminen and Jääskeläinen speculate that *déjà vu* occurs as a result of hyperdopaminergic action in the medial temporal areas of the brain.

## Explanations

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### Split perception explanation

*Déjà vu* may happen if a person experienced the current sensory experience twice successively. The first input experience is brief, degraded, occluded, or distracted. Immediately following that, the second perception might be familiar because the person naturally related it to the first input. One possibility behind this mechanism is that the first input experience involves shallow processing, which means that only some superficial physical attributes are extracted from the stimulus.<sup>[29]</sup>

### Memory-based explanation

#### Implicit memory

Research has associated *déjà vu* experiences with good memory functions.<sup>[30]</sup> Recognition memory enables people to realize the event or activity that they are experiencing has happened before. When people experience *déjà vu*, they may have their recognition memory triggered by certain situations which they have never encountered.<sup>[17]</sup>

The similarity between a *déjà-vu*-eliciting stimulus and an existing, or non-existing but different, memory trace may lead to the sensation that an event or experience currently being experienced has already been experienced in the past.<sup>[22][31]</sup> Thus, encountering something that evokes the implicit associations of an experience or sensation that "cannot be remembered" may lead to *déjà vu*. In an effort to reproduce the sensation experimentally, Banister and Zangwill (1941)<sup>[32][33]</sup> used hypnosis to give participants

posthypnotic amnesia for material they had already seen. When this was later re-encountered, the restricted activation caused thereafter by the posthypnotic amnesia resulted in 3 of the 10 participants reporting what the authors termed "paramnesias".

Two approaches are used by researchers to study feelings of previous experience, with the process of recollection and familiarity. Recollection-based recognition refers to an ostensible realization that the current situation has occurred before. Familiarity-based recognition refers to the feeling of familiarity with the current situation without being able to identify any specific memory or previous event that could be associated with the sensation.<sup>[34]</sup>

In 2010, O'Connor, Moulin, and Conway developed another laboratory analog of *déjà vu* based on two contrast groups of carefully selected participants, a group under posthypnotic amnesia condition (PHA) and a group under posthypnotic familiarity condition (PHF). The idea of PHA group was based on the work done by Banister and Zangwill (1941), and the PHF group was built on the research results of O'Connor, Moulin, and Conway (2007).<sup>[35]</sup> They applied the same puzzle game for both groups, "Railroad Rush Hour", a game in which one aims to slide a red car through the exit by rearranging and shifting other blocking trucks and cars on the road. After completing the puzzle, each participant in the PHA group received a posthypnotic amnesia suggestion to forget the game in the hypnosis. Then, each participant in the PHF group was not given the puzzle but received a posthypnotic familiarity suggestion that they would feel familiar with this game during the hypnosis. After the hypnosis, all participants were asked to play the puzzle (the second time for PHA group) and reported the feelings of playing.

In the PHA condition, if a participant reported no memory of completing the puzzle game during hypnosis, researchers scored the participant as passing the suggestion. In the PHF condition, if participants reported that the puzzle game felt familiar, researchers scored the participant as passing the suggestion. It turned out that, both in the PHA and PHF conditions, five participants passed the suggestion and one did not, which is 83.33% of the total sample.<sup>[36]</sup> More participants in PHF group felt a strong sense of familiarity, for instance, comments like "I think I have done this several years ago." Furthermore, more participants in PHF group experienced a strong *déjà vu*, for example, "I think I have done the exact puzzle before." Three out of six participants in the PHA group felt a sense of *déjà vu*, and none of them experienced a strong sense of it. These figures are consistent with Banister and Zangwill's findings. Some participants in PHA group related the familiarity when completing the puzzle with an exact event that happened before, which is more likely to be a phenomenon of source amnesia. Other participants started to realize that they may have completed the puzzle game during hypnosis, which is more akin to the phenomenon of breaching. In contrast, participants in the PHF group reported that they felt confused about the strong familiarity of this puzzle, with the feeling of playing it just sliding across their minds. Overall, the experiences of participants in the PHF group is more likely to be the *déjà vu* in life, while the experiences of participants in the PHA group is unlikely to be real *déjà vu*.

A 2012 study in the journal *Consciousness and Cognition*, that used virtual reality technology to study reported *déjà vu* experiences, supported this idea. This virtual reality investigation suggested that similarity between a new scene's spatial layout and the layout of a previously experienced scene in memory (but which fails to be recalled) may contribute to the *déjà vu* experience.<sup>[37]</sup> When the previously experienced scene fails to come to mind in response to viewing the new scene, that previously experienced scene in memory can still exert an effect—that effect may be a feeling of familiarity with the new scene that is subjectively experienced as a feeling that an event or experience currently being experienced has already been experienced in the past, or of having been there before despite knowing otherwise.

## **Cryptomnesia**

Another possible explanation for the phenomenon of *déjà vu* is the occurrence of "cryptomnesia", which is where information learned is forgotten but nevertheless stored in the brain, and similar occurrences invoke the contained knowledge, leading to a feeling of familiarity because the event or experience being

experienced has already been experienced in the past, known as "*déjà vu*". Some experts suggest that memory is a process of reconstruction, rather than a recollection of fixed, established events. This reconstruction comes from stored components, involving elaborations, distortions, and omissions. Each successive recall of an event is merely a recall of the last reconstruction. The proposed sense of recognition (*déjà vu*) involves achieving a good "match" between the present experience and the stored data. This reconstruction, however, may now differ so much from the original event it is as though it had never been experienced before, even though it seems similar.<sup>[38]</sup>

## Dual neurological processing

In 1964, Robert Efron of Boston's Veterans Hospital proposed that *déjà vu* is caused by dual neurological processing caused by delayed signals. Efron found that the brain's sorting of incoming signals is done in the temporal lobe of the brain's left hemisphere. However, signals enter the temporal lobe *twice* before processing, once from each hemisphere of the brain, normally with a slight delay of milliseconds between them. Efron proposed that if the two signals were occasionally not synchronized properly, then they would be processed as two separate experiences, with the second seeming to be a re-living of the first.<sup>[39][40]</sup>

## Dream-based explanation

Dreams can also be used to explain the experience of *déjà vu*, and they are related in three different aspects. Firstly, some *déjà vu* experiences duplicate the situation in dreams instead of waking conditions, according to the survey done by Brown (2004). Twenty percent of the respondents reported their *déjà vu* experiences were from dreams and 40% of the respondents reported from both reality and dreams. Secondly, people may experience *déjà vu* because some elements in their remembered dreams were shown. Research done by Zuger (1966) supported this idea by investigating the relationship between remembered dreams and *déjà vu* experiences, and suggested that there is a strong correlation. Thirdly, people may experience *déjà vu* during a dream state, which links *déjà vu* with dream frequency.

## Related terms

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### *Jamais vu*

*Jamais vu* (from French, meaning "never seen") is any familiar situation which is not recognized by the observer.

Often described as the opposite of *déjà vu*, *jamais vu* involves a sense of eeriness and the observer's impression of seeing the situation for the first time despite rationally knowing that they have been in the situation before. *Jamais vu* is more commonly explained as when a person momentarily does not recognize a word, person or place that they already know. *Jamais vu* is sometimes associated with certain types of aphasia, amnesia, and epilepsy.

Theoretically, a *jamais vu* feeling in a sufferer of a delirious disorder or intoxication could result in a delirious explanation of it, such as in the Capgras delusion, in which the patient takes a known person for a false double or impostor.<sup>[41]</sup> If the impostor is himself, the clinical setting would be the same as the one described as depersonalization, hence *jamais vus* of oneself or of the very "reality of reality", are termed depersonalization (or surreality) feelings.

The feeling has been evoked through semantic satiation. Chris Moulin of the University of Leeds asked 95 volunteers to write the word *door* 30 times in 60 seconds. Sixty-eight per cent of the subjects reported symptoms of *jamais vu*, with some beginning to doubt that *door* was a real word.<sup>[41]</sup>

The experience has also been named "*vuja de*" and "*véjà du*".<sup>[42][43]</sup>

## ***Déjà vécu***

*Déjà vécu* (from French, meaning "already lived") is an intense, but false, feeling of having already lived through the present situation. Recently, it has been considered a pathological form of *déjà vu*. However, unlike *déjà vu*, *déjà vécu* has behavioral consequences. Because of the intense feeling of familiarity, patients experiencing *déjà vécu* may withdraw from their current events or activities. Patients may justify their feelings of familiarity with beliefs bordering on delusion.<sup>[44]</sup>

## ***Presque vu***

*Presque vu* (French pronunciation: [pʁɛsk vy], from French, meaning "almost seen") is the intense feeling of being on the very brink of a powerful epiphany, insight, or revelation, without actually achieving the revelation. The feeling is often therefore associated with a frustrating, tantalizing sense of incompleteness or near-completeness.<sup>[45]</sup>

## ***Déjà rêvé***

*Déjà rêvé* (from French, meaning "already dreamed") is the feeling of having already dreamed something that is currently being experienced.<sup>[46]</sup>

## ***Déjà entendu***

*Déjà entendu* (literally "already heard") is the experience of feeling sure about having already heard something, even though the exact details are uncertain or were perhaps imagined.<sup>[47][48]</sup>

## **See also**

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- Intuition (knowledge)
- Repression (psychology)
- Scientific skepticism
- Screen memory
- Uncanny

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## Further reading


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## External links

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- Déjà vu (<http://skepdic.com/dejavu.html>) - *The Skeptic's Dictionary*
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