

## LITERATURE REVIEW:

**Déjà Vu**" describes the uncanny sensation that you've already experienced something, even when you know you never have. The expression is derived from the French, meaning "already seen." There's no conclusive evidence on how common it actually is, but varying estimates suggest anywhere between **60 and 80 percent** of the population experience this phenomenon.

### Possible Causes/ Theories:

1. Divided Perception:

This happens when our brain processes a situation in a quick and shallow manner before it becomes fully aware of the situation and we get a sudden jolt of having experienced it before.

2. Dual Processing:

Signals like smell, visuals, sound enter the temporal lobe from both hemispheres of the brain and the time lag between processing in these two areas may register different aspects of the scene as separate events. Therefore, the later event plays over the former event and it feels like Déjà Vu.

3. Hologram Theory:

A familiar visual aspect is connected to an old memory, without the surrounding details, so you're stuck in the current event with a feeling of familiarity but no facts in your brain to back that up. This is called the hologram theory because like in holograms, only one fragment gives us the entire picture (supposedly).

Other types of Déjà Vu experiences include Déjà Entendu (Heard Before), Déjà Pense (Thought Before), Déjà Voulu (Wanted Before), Déjà Gouté (Eaten Before), Déjà Lu (Read before), Déjà Rencontre (Met Before).

**TEMPORAL LOBE** - Memory is stored in a part of your brain called the temporal lobe. Long-term memories, events, and facts are all pushed right to that area of the brain. Specific parts of the temporal lobe also play a role in recognizing something as familiar. And while it's not completely proven that déjà vu is connected to the temporal lobe there have been some clues that lead scientists to make this connection. Stress and fatigue can also cloud short and long-term memory. If your memory is impacted, this happens in the temporal lobe, which might lead to a feeling of déjà vu.

Déjà vu is sometimes a sign of a seizure, specifically an epileptic seizure. About 60 percent of people with epilepsy have something called a focal seizure, which is in just one part of the brain and these can be hard to recognize as seizures because they are short and you remain conscious throughout. A person having one may look like they are having a staring spell or daydreaming.

### **Déjà Vu and Premonitions:**

While experiencing Déjà vu, we always feel like we know what is going to happen next. However, in most cases, we actually can't. The only reason for this feeling is the intense predictive sense going off in our head, which provides a sense of familiarity throughout the event, but not actually recalling any of it.

### **Experiments to Study Déjà Vu:**

The unpredictability of this phenomenon poses a challenge to researchers as we cannot simply wait around for it to happen. Still, scientists have created some experiments based on what we think Déjà vu might be. With the use of virtual reality or computer simulations or games, similar layouts, the Déjà vu feeling and predictive tendencies is studied.

### **Metamemory Phenomenon:**

Déjà vu and the "tip of the tongue" feeling both fall under this category. Simply put, it is the disconnect between conscious and subconscious memory, where the brain recognizes something but can't place it.

## EXPERIMENT

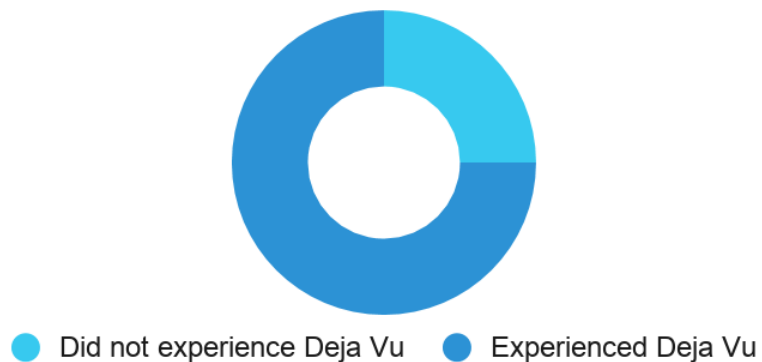
We conducted a survey to understand more about what people think about this fascinating concept and to try and categorize and explain this occurrence with certain variables like stress, travel experience, neurological issues and age.

We posed different questions based on different theories and understandings of this phenomenon, hoping to confirm our thoughts on the matter.

Google Form Link: <https://forms.gle/oBuTDThWMvzRc2o2A>

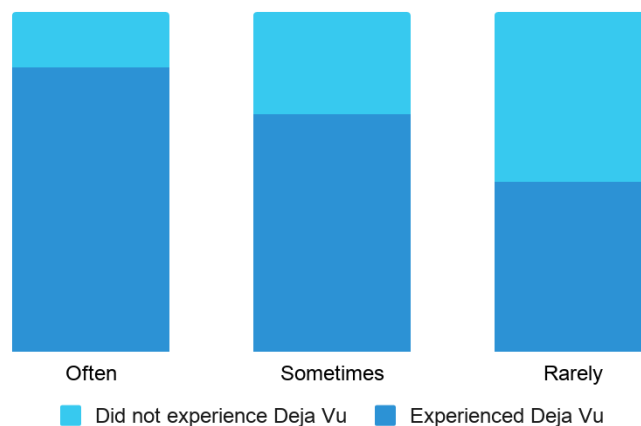
### Analysis

#### People with neurological disorders

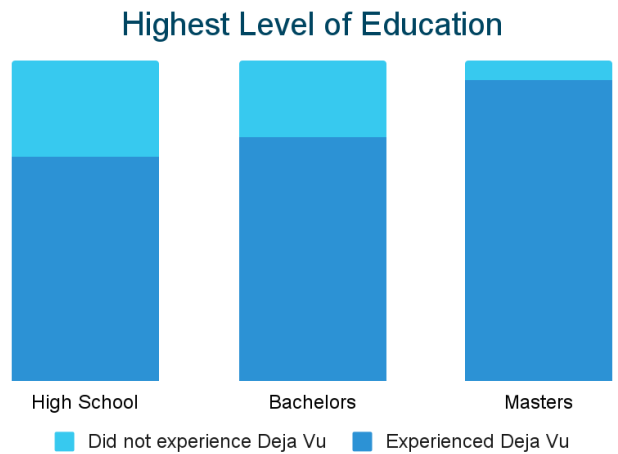


Data collected from people with neurological disorders states that 25% of them have never experienced Déjà vu, 50% of them experience Déjà Vu rarely, and the remaining 25% experience Déjà Vu often. Therefore, we inferred that not all people with neurological issues experience Déjà Vu, rather it depends on which part of the brain has been affected and whether it impacts the memory or not.

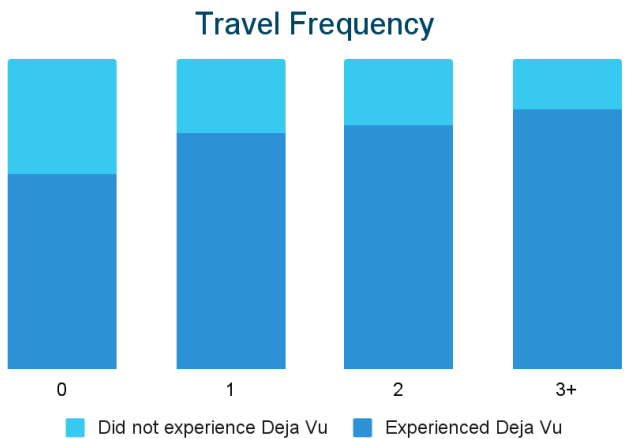
#### Frequency of Stress



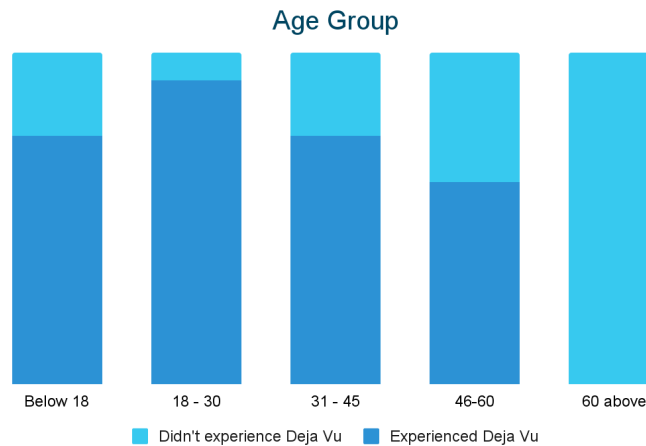
From the set of people who experienced stress often, we found that 84% of them experienced Déjà Vu whereas 70% of people who experienced stress sometimes experienced Déjà Vu. Of the people who experienced stress rarely, 50% experienced Déjà Vu. Our observations aligned with our hypothesis that stress induces Déjà Vu due to the many subconscious thoughts at once.



The results we got from the survey reflect that 70% of people whose highest education level is high school experienced Déjà Vu, while 76% of people with a Bachelor's Degree experienced Déjà Vu. About 94% of subjects who've pursued Master's Degree experienced Déjà Vu. Again, our observations aligned with our hypothesis that highly educated people experience Déjà Vu more because of more visualisations that trigger the experience.

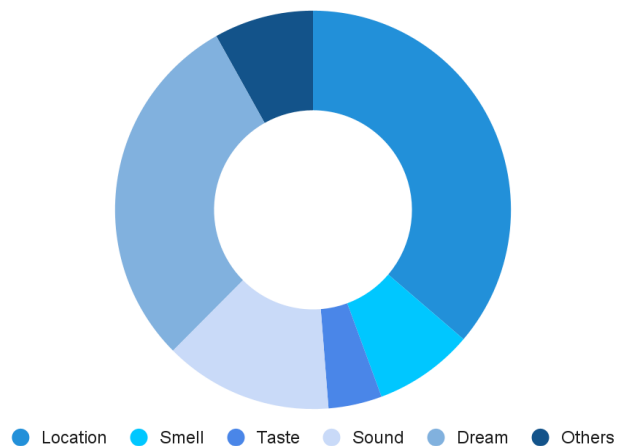


Data received for travel experiences suggests that 62.5% of subjects who did not travel even once a year experienced Déjà Vu, while 75.75% of subjects who travelled once a year experienced it. 78.2% of subjects who travelled twice a year experienced Déjà Vu, while 83.34% of subjects who travelled thrice or more experienced it. Our observations align with our hypothesis that people who travel more, tend to experience Déjà Vu more.



Data collected from people reflected that 75% of subjects below the age of 18 experienced Déjà Vu whereas 91.8% of subjects aged between 18-30 experienced it. 75% of them between 31-45 went through Déjà Vu while 60.8% of those aged 46-60 experienced it. Our observations aligned with our hypothesis that as age increases, people tend to experience Déjà Vu less.

What triggered Deja Vu?



This chart accounts for all the factors that triggered the experience of Déjà Vu for our subjects. These factors mainly include location, dream, taste, smell, sound while other constituting factors include familiar people, similar events, similar actions done by the subject, similar dialogues, similar thoughts, similar visuals, etc.

**The subjects shared many thoughts they had about the Déjà vu phenomenon. many of them mentioned various reasons they believed cause it:**

- Some believe that Déjà vu proves the presence of paranormal activity, that ghosts unexplainable factors have something to do with this temporary glitch in our brain.
- Many believe that past experiences are the major cause of this phenomenon, where the brain is fact checking and fills in certain details from memories. To add more weight to this theory, one person mentioned that visits to their hometown causes frequent bouts of Déjà vu.
- People also connect the occurrence of Déjà vu to their perception of life, and how correct/wrong the situation around them is. Overthinking and replaying and recreating scenarios in your head creates a feeling of “I have thought of this happening before” for which the official term would be Déjà pense.
- Another potential reason for Déjà vu according to our subjects is the brain subconsciously combining the inputs from various senses in a particular situation and interpreting it as a memory that’s happening again.
- We’ve heard of stress-induced hallucinations, now we’re hearing about stress-induced and hallucination-induced Déjà vu! People believe that higher stress levels make the brain less attentive and mixes up the active conscious and subconscious i.e the memory pool and the part of the brain dealing with the present.
- Some don’t believe in Déjà vu at all. They believe that the feeling is just a moment in which their brain is pranking them.
- A couple of people experienced anxiety and discomfort after experiencing déjà vu. This may be because they might already be experiencing some anxiety which in turn causes neurons to misfire and triggers déjà vu, which leads to even more anxiety and this vicious cycle continues.
- One or two people even reported a feeling of extreme confusion and sleepiness after experiencing Déjà vu which indicates that they might’ve had a temporal lobe seizure.
- Someone told us that he felt “trapped in a time loop”. He had Déjà vu of the Déjà vu. He couldn’t think of anything else. For minutes, and sometimes even longer, he would feel that he was reliving experiences.
- Some people believe that their dreams might be triggering their Déjà vu which can be true as a study actually says that the dreams that we don’t remember might be the ones that appear as Déjà Vu.

- Many loved the Déjà vu experience and felt it was something really interesting and pleasant.
- A few of them have never actually experienced Déjà vu but think that it might be scary which is understandable as the confusion and mystery surrounding this feeling only makes it skin-crawling.