

Case Report

Déjà Vécu: When *Groundhog Day* Gets Real

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Abstract

Déjà vécu is an extremely rare type of identifying paramnesia characterised by the ongoing sensation of having experienced things before. Having the delusional conviction that this sensation is true, patients frequently exhibit recollective confabulation. We here describe an 84-year-old woman with idiopathic, partial déjà vécu, where her symptoms were limited to people and events. An extensive psychiatric and somatic work-up ruled out cerebrovascular disease, epilepsy, dementia, psychosis, or intoxication as a potential underlying cause.

Proposed to be a functional disturbance of the limbic system with the involvement of a network that comprises at least the hippocampus and entorhinal cortex, the pathophysiology of déjà vécu is in need of further elucidation. Our patient *and* her family were offered psychoeducation, which led to acceptance and improved coping. During the two-year follow-up, the déjà vécu sensations continued unaltered, but all involved were less bothered by them, with the patient's functioning improving both personally and socially.

Keywords: Déjà vu; Entorhinal Cortex; Epilepsy; Hippocampus; Identifying Paramnesia; Recollective Confabulation

Abbreviations: EEG: Electroencephalogram; MRI: Magnetic Resonance Imaging

1. Introduction

The French term *déjà vécu* can best be translated as ‘already lived through’ [1]. It is used for protracted cases of *déjà vu*, the sensation of having seen something before. Most of us have experienced such fleeting sensations of familiarity that are mostly quickly forgotten and do not tend to disrupt our everyday lives. *Déjà vécu*, however, does turn one’s life upside down since now it concerns a chronic, ongoing sensation that events are repetitions of the past, even up to the point that one becomes convinced that one has lived one’s whole life before. The sensation was immortalised in the film *Groundhog Day*, where a cynical TV weatherman (played by Bill Murray) gets trapped in a time loop, reliving the same day over and over until he finally finds a way out of his misanthropic state and, with it, manages to break the cycle of eternal return. Contrary to *Groundhog Day* though, *déjà vécu* does not tend to have a happy ending. The condition is typically complicated by the development of recollective confabulation, i.e. the tendency of making up stories to furnish one’s predicament (i.e. the delusional conviction that one has actually lived one’s life before) with seemingly logical explanations [2]. Ensuing conflicts with one’s social environment and a failure to fulfil professional, social, and domestic demands may yield secondary pathology such as a depressive disorder or psychosis. To add to the budding literature on this intriguing phenomenon, we here present the case of an elderly woman with a partial form of *déjà vécu* whom we were able to help manage her condition successfully through psychological intervention.

2. Method

We describe a patient having been referred for treatment to the Neurology Outpatient Department of our Amsterdam teaching hospital. Both the patient and close relatives provided their informed consent for publication of the present report.

3. Results

3.1 Case report

When we first saw this 84-year-old widow at our outpatient clinic, she presented with complaints of repeatedly reliving past events. For several weeks now, she was convinced, for instance, that TV shows and even live broadcasts of football matches were replays. She also approached random people in the street or in the supermarket because she took them to be acquaintances. When her children queried her about this, she always offered a seemingly plausible account of who the people she had accosted were. When shown an article in a local newspaper about a newly-opened exhibition, she told her daughter that she had already seen it on the day that she had visited her neurologist. These were all evidently untrue statements. Her children wondered whether these peculiar convictions might be caused by epilepsy, because in her forties their mother had suffered from tonic-clonic seizures as well as minor spells characterised by ‘strange thoughts’. At the time, the EEG had shown sharp waves in the temporal region, after which our patient was prescribed phenobarbital, carbamazepine, and phenytoin, which were tapered off after she had remained seizure-free for several years. The seizures had not returned. The remainder of her medical history was non-contributory. At neurological examination, she showed no focal abnormalities, blood

tests were unremarkable, and both a standard and a 24-hour EEG showed no traces of epilepsy, even while experiencing ongoing déjà phenomena. A head MRI showed global brain atrophy and subtle vascular white-matter abnormalities compatible with her age.

3.1.1 Neuropsychological evaluation

Our patient was eager to participate in the neuropsychological tests, although she did frequently express her frustration when she performed poorly on specific cognitive tasks. She was well-oriented, but the storage and recall of new information was disturbed in both the verbal-auditory and the visual domain, with a substantial number of false positives. Since false negative responses were rare, we concluded that new stimuli were apparently easily confused with those already stored in memory. Also long-term memory, executive functioning, mental flexibility, organization, and planning were impaired. Perception and visuoconstructive skills were in the age-appropriate range. Our patient had no marked mood problems, even though she did report mild feelings of depression (which she attributed to her current situation) and more pronounced feelings of anxiety, especially in crowded conditions with their numerous triggers of overidentification. Since neither spaces nor objects evoked any depressive or anxious feelings, she was not avoidant and managed to keep up her daily routines. Finally, our patient also spoke of mental exhaustion, which she attributed to the recurring conflicts with her children, the constant need to sort out what was new and what was not, and the great effort of suppressing the sensations of familiarity or refraining from addressing people who might turn out to be strangers after all. In all, we concluded that our patient suffered from identifying paramnesia with a partial form of overidentification, as well as distinct cognitive and mood problems that were, however, too mild to justify a diagnosis of either dementia or depressive disorder.

3.1.2 Course

Because of her history of epilepsy, we prescribed our patient levetiracetam 500 mg twice daily, even in the absence of epileptic discharges on the EEG. Since the drug had no effect and with the 24-hour EEG failing to show any epileptic activity, the regimen was discontinued after three weeks. Instead, we then prescribed the cholinesterase inhibitor rivastigmine in a dosage of 1.5 mg twice a day. After six weeks without improvement, this too was discontinued. Based on the two ineffective pharmacological interventions and the test results, we considered the possibility of an underlying epileptic or neurodegenerative disorder highly unlikely and - in the absence of major psychiatric pathology - established a diagnosis of idiopathic déjà vécu. We discussed the diagnosis with our patient and her relatives, and the subsequent psychoeducation eventually led to acceptance of the condition. Knowing that her predicament had a name and that it had a neurological (although unobjectifiable) cause, made it easier for all to cope. A two-year follow-up at our clinic showed that the symptoms had remained unchanged, while her mild depressive symptoms had improved without further intervention and no additional cognitive symptoms had developed.

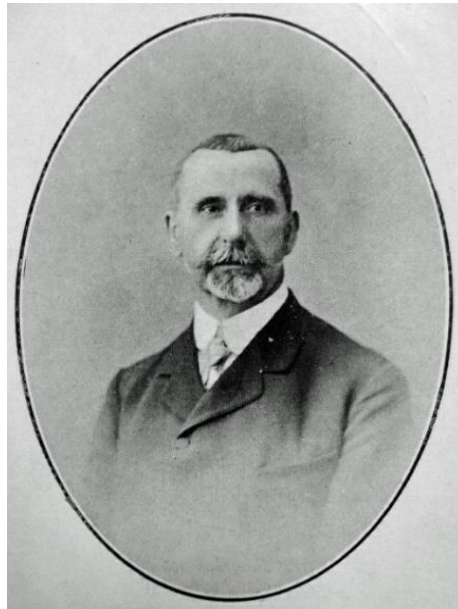


Figure 1: The French psychiatrist Léon Émile François Arnaud (1858-1927).

4. Discussion

With only 14 relevant hits in PubMed, *déjà vécu* is believed to be an extremely rare condition. It is considered a variant of *déjà vu*, which itself belongs to the larger group of *déjà* phenomena or identifying paramnesias. Neppe [1] distinguishes no less than 20 variants, some of which have been described since the days of Augustine (354-430 AD) under names such as *falsae memoriae*, paramnesia, promnesia, memory illusion, and sentiment of preexistence [3]. It was only during the 1840s that these phenomena attracted scientific attention [4]. However, the first known description of *déjà vécu* did not follow until half a century later, when the French psychiatrist François Arnaud (1858-1927; Figure 1) published the case of Louis, a young soldier with cerebral malaria who was convinced that he had experienced his entire life before [5]. Among many other certitudes, Louis held that newspapers only regurgitated old news and that his brother's wedding was a staged repetition of a previous marriage ceremony. His condition made him paranoid and agitated, and his state proved to be chronic. Arnaud presented this case at a meeting of the *Société Médico-Psychologique* in Paris, christening the phenomenon *illusion de déjà vu* [6]. He emphasised that it was a *forme grave* ('severe form') that needed to be distinguished from mundane *déjà* phenomena (which he designated as *formes légères* or 'mild forms') because of its chronic nature *and* the accompanying disturbances of judgment. As later proposed by O'Connor et al. [7], another characteristic is the delusional nature of the conviction that events are actual memories, with the actions that may ensue being prompted by this false notion. An overview of 11 cross-sectional studies indicates that *déjà vu* (i.e. the 'mild form') lasts a second to minutes at most [8] and is reported by 30-96% of the general population [3]. Brown [9] found a comparable prevalence (30-100%), with a mean of 67% in a systematic review comprising 41 studies. Arnaud's *forme grave*, though, known today as *déjà vécu*, is so rare that prevalence figures are unknown. Similar to the present report of an older woman

experiencing déjà vécu for people and events but not for objects and locations, other studies also testify of such selective variants. Thus, Ward et al. [10] described a man who confused strangers with film stars and other celebrities, while Turner et al. [11] portrayed a man whose déjà vécu was limited to news items; in both cases there was no generalisation to other life domains.

4.1 Pathophysiology

Biomedical explanatory models for déjà vécu can be divided into neurocognitive paradigms (dual processing, whereby novel sensory input appears to the person to have already been stored in memory) and neurological ones (involving epileptic activity or problems in neurotransmission). In both cases the hippocampus and entorhinal cortex are believed to be involved [12, 13]. The entorhinal cortex, located in the medial temporal lobe, connects the temporal cortex and hippocampus, which both play an important role in memory. The question whether pathological changes in either area induce faulty memories or elicit an erroneous sense of familiarity is as yet unanswered [13, 14]. For decades, the involvement of both areas was considered irrefutable because of the work of Wilder Penfield (1891-1976), the Canadian neurosurgeon whose cortical probing experiments had yielded numerous data on déjà expériences [15]. Later stimulation studies with comparable methods were less successful, although Bartolomei et al. [16] likewise found an association with the entorhinal cortex in particular. However, a functional MRI study among 18 persons with previous déjà experiences and 15 healthy controls suggests that the network involved is substantially bigger, comprising, among other regions, the insula, thalamus, and prefrontal cortex [17]. Of note, a limitation of the latter study is that none of the participants experienced déjà phenomena during scanning, implying that the MRI captured differences in trait rather than state. Since individuals experiencing déjà vécu have never been investigated in such a systematic manner, the pathophysiology of this much rarer condition is even less clear, although the above-referenced studies suggest that the hippocampus and entorhinal cortex may here, too, be constituent parts of the network involved. The finding that déjà vécu may be specific for certain life domains raises the question whether parts of this network can be selectively switched on and off, an issue that is in need of further study.

4.2 Etiology

The differential diagnosis for conditions underlying déjà vécu is quite extensive. Similar to other déjà phenomena, secondary types may occur in temporal-lobe epilepsy [18, 19], whether or not in the context of neoplasms or limbic encephalitis [20]. In psychiatry, manifestations are sporadically described in mood disorders, anxiety disorders, and schizophrenia spectrum disorders [21]. Pharmacologically, déjà vécu is associated with the use of 5-hydroxytryptophan [22], amantadine, and phenylpropanolamine [23], and probably also with the use of amphetamines, alcohol, and hallucinogens [8]. Ward et al. [10] reported on déjà vécu in multiple sclerosis, while as early as in 1927 Dawson [24] described a 41-year-old man with neurosyphilis who suffered from a depressed mood and hypochondria, and went on to develop a euphoric mood after malaria treatment (which was the state-of-the-art treatment at the time). As Dawson's patient recounted,

I seem to have been shown things that I have seen, read about, or discussed years ago. I recollect whole experiences which have occurred to me and which seem to be repeated to-day. The number of Punch which I was looking at yesterday seemed a replica of one I had read years ago although it bore a recent date. I feel that I have dreamed years ago about the conversations which I hear daily, and about the experiences of the other patients here. I begin to realize that the whole of my experiences here are the fulfilment of a dream, or a series of dreams, even down to the most minute details of daily life. Most of them, I now remember, appeared to me, at the time or times, as a sort of cinema film. I now know that lots of good things are coming my way . . . you who read this will readily understand my hesitation in such a matter as it really amounts to prophecy or prevision . . . the full revelation of the glorious knowledge that has just commenced and is not yet complete.

In this case recollective confabulation (also displayed by our patient) took the form of a delusion of grandeur with metaphysical overtones, compatible with neurosyphilis, although perhaps also with malaria, as we saw in the somewhat similar case description of Arnaud's patient with cerebral malaria [5]. Finally, déjà vécu can also occur in the absence of any identifiable causes, whether they be of a neurologic, psychiatric, toxicological, or other nature, as was the case in our 84-year-old patient. As indicated by Wells et al. [25] in their report of an otherwise healthy 23-year-old man, the condition can also develop at a relatively young age.

4.3 Diagnosis and treatment

The diagnosis of déjà vécu hinges on proper history-taking, preferably supplemented by a heteroanamnesis. A psychiatric and neurological work-up are mandatory, as are adjuvant tests including blood work, an EEG, a head MRI, and - if indicated - a lumbar puncture, neuropsychological assessment, toxicology, and/or a medication review (all to exclude secondary forms of déjà vécu). In the absence of a substantial literature on déjà vécu, evidence-based treatment protocols are non-existent. Practice-based treatments like the one we initially offered then aim to alleviate the underlying cause - or at least the *suspected* underlying cause. As our patient had suffered from epilepsy in the past and also showed mild cognitive impairment, we originally treated her with antiepileptics and cholinesterase inhibitors. In migrainous cases migraine prophylaxis, propranolol or antiepileptics are indicated, while encephalitic cases (depending on the pathogen) call for antiviral medications, steroids, or immunoglobulins, psychotic cases for antipsychotics, etcetera. In addition, providing the patient, family, and caregivers with a proper explanation in combination with psychoeducation is indispensable. After all, the film *Groundhog Day* may be a blast, the actual sensation of being stuck in an endless repetition of events must be a nightmare for all involved.

5. Conclusion

Déjà vécu, or persistent déjà vu, is an extremely rare type of identifying paramnesia characterised by the delusional conviction that one is continuously reexperiencing past events, with the condition often being complicated by recollective confabulation. In the absence of an objectifiable cause, arguably, the underlying mechanism is a functional disturbance of the memory network that (at least) includes the hippocampus and entorhinal cortex.

Practice-based treatment is aimed at the underlying cause (if known) and should also involve thorough explanation and psychoeducation for the patient, his/her relatives, and caregivers.

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Conflicts of Interest

The authors declare that there is no conflict of interest.

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