

## Dreamy states

Dreamy states are well known as brief aberrations of awareness and of altered thought and cognition that are a commonplace normal experience. But they also occur in a variety of psychological states and as Hughlings Jackson described, in epileptic attacks deriving from the temporal lobes. Jackson's many papers contain unparalleled richness of clinical description, now seldom cited. This account provides no original material, but seeks to reproduce some of his most important observations, including the unique wealth of personal experiences from one particular doctor-patient.

The Arabian physician and surgeon Abulquasim who served the Caliph of Cordova during the tenth century, recorded examples of hallucinations experienced by epileptics<sup>1</sup>. One patient described was a boy,

*"... suffering from the same disease who told me that it seemed to him that a black woman came towards him having over herself a small leather garment and when she approached him he immediately fell down."*

Antonius Guainerius<sup>2</sup> of the University of Pavia from 1412-1413 wrote,

*"I myself have seen a certain choleric youth who said that in his paroxysms he always saw wonderful things, which he most ardently desired to set down in writing."*

### Intellectual Aura

It was not until the latter part of the nineteenth century, that Hughlings Jackson recognised such strange symptoms as elements of the epileptic attack.

*"It is not very uncommon," he wrote<sup>3</sup> "for epileptics to have vague and yet exceedingly elaborate mental states at the onset of epileptic seizures... The elaborate mental state, or so-called intellectual aura, is always the same, or essentially the same, in each case. 'Old scenes revert.' 'I feel in some strange place.' 'A dreamy state.'"*

Jackson reported two varieties (ref 3, p.295)<sup>4</sup>:

1. *dreamy states without actions, the dream remembered, and*
2. *actions more or less elaborate, but no mental state during his actions, nor does he remember what he has done."*

The French physicians J Falret, A Voisin, Armand Trousseau and Th Herpin were familiar with these dreamy states, but they described them as intellectual auras, a term Jackson disliked.

*"dreamy states consisting of scenes or experiences remembered from the past. A 37-year-old man had attacks that began with an olfactory sensation. He said that he began to think of things years gone by, — 'things from boyhood's days.'"*

Jackson recognised that in focal attacks post mortem disclosed "coarse" diseases of the brain, glioma, syphiloma, abscess, and that the site of such lesions could be inferred from the onset of the fit. This was an important step in rational cerebral localisation deduced from clinical signs. His lucid and minute descriptions embraced the diverse intellectual, psychic, dreamy states, sensory, motor, and

aphasic contents of various types of seizures, as well as the several post-epileptic states<sup>5</sup>.

A second patient also had attacks that started with an olfactory sensation, then visual hallucinosis:

*"The next thing was his 'dreamy state.' He seemed to actually see large buildings, which he had once seen; it might be that he seemed near a church, close to its wall. In the last attack, he 'saw' certain alms houses, all in a moment 'saw' that building and could actually see the clock. The things he 'saw' seemed of a natural colour."*

Jackson described<sup>6</sup> the sense of strangeness, unreality, *jamais vu*, a dreamy state, and *déjà vu*. He observed a sense of fear and panic and in some, strange unpleasant smells and tastes that he thought derived from the uncus of the temporal lobe. He recorded visual hallucinations, often well formed, so that the subject could recount complex scenes<sup>3</sup>. An initial rising sense of warmth or discomfort in the stomach constituted the epigastric aura. Importantly Jackson said that the aura is itself the initial symptom of the seizure.

Gower's<sup>7</sup> too, described several cases with elaborate visual and auditory "warnings". Among them was a patient who saw "beautiful places, large rooms, etc.," and heard at the same time "beautiful music."

### Jackson's dreamy states and intellectual auras

The comprehensive account of epilepsy with "dreamy state" was published<sup>8</sup> in 1888. Case 5, Jackson introduces as, "a very important case. It is of a highly educated medical man, who reports it himself..."

*"I first noticed symptoms which I subsequently learnt to describe as petit-mal when living at one of our universities, 1871. .... I was waiting at the foot of a College staircase, in the open air, for a friend who was coming down to join me. I was carelessly looking round me, watching people passing, etc., when my attention was suddenly absorbed in my own mental state, of which I know no more than that it seemed to me to be a vivid and unexpected 'recollection' — of what, I do not know. My friend found me a minute or two later, leaning my back against the wall, looking rather pale, and feeling puzzled and stupid for the moment. In another minute or two I felt quite normal again, ... I could give no distinct account of what had happened, or what I had 'recollected'."*

*"During the next two years a few similar but slighter attacks occurred, involving mental states which struck me as like to the first and to each other..."*

*"In 1874 I first had a haut-mal, preceded by the mental condition I had felt in petits-maux, ... I will attempt to describe the features which I think were common to all, or nearly all."*

**"Mental condition"** — *In a large majority of cases the central feature has been mental and has been a feeling of Recollection, i.e. of realising that what is occupying the attention is what has occupied it before, and indeed has been familiar, but has been for a time forgotten, and now is recovered with a slight sense of satisfaction as if it had been sought for. .... The recollection is always started by another person's voice, or by my own verbalised thought, or by what I am reading and mentally verbalise; and I think that during*



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the abnormal state I generally verbalise some such phrase of simple recognition as, 'Oh yes — I see', 'Of course — I remember', etc., but a minute or two later I can recollect neither the words nor the verbalised thought which gave rise to the recognition. I only feel strongly that they resemble what I have felt before under similar abnormal conditions. I re-enter the current of normal life, as a rule, quickly — sometimes, as far as I can judge from my own movements or other people's evidence, within ten or fifteen seconds; .... I have found myself just after a petit-mal at a London Railway Booking Office, meaning to go to K — , and asking without hesitation for 'Second return to — to — that school, don't you know — ' (or some such words) and being a good deal startled at my forgetfulness.

"A petit-mal has two or three times come on when I have been reading poetry aloud — the line I am reading or just going to read seems somehow familiar, or just what I was trying to recollect, though I may have seen or heard it before. I recognise my morbid condition and stop, though I have generally sense enough to finish the line or even sentence, and remain silent for a minute or so; .... I have made several rude attempts to go on writing, and have kept four or five specimens of what I have written. ... My impression at the time that I was writing was that the words and sense were quite reasonable, and that I had kept within very familiar and prudent limits of expression. I had found, I thought, just the words I was seeking for. A minute or two later I could see that some of the words were grotesquely mal à propos, though I think the grammatical forms of sentence were always preserved. I could not trace any undercurrent of thought or recollection from which the irrelevant words had come.

" **Physical conditions.** —...At the onset I can rarely notice any physical change in myself, my attention being chiefly occupied with my mental condition; but once or twice when I have been standing near a mirror I have noticed pallor of the face, and I have learnt from others that this is common, and that my eyes have a somewhat staring vacant look as if they were not directed to anything near me, or indeed taking notice of anything particular. In this condition I am told, and in fact occasionally remember, that I often say 'yes', with an air of complete assent to any remark made to me, whether it is a pertinent answer or not; and further, that I occasionally make a slight half-vocalised sound, whether addressed or not. This latter, I have been told, is somewhat like a modified and indistinct smacking of the tongue like a tasting movement, and is generally accompanied by a motion of the lower jaw, and sometimes by some twitching of the muscles round one or both corners of the mouth or of the cheeks, but by no sense of taste in my recollection.... I also never notice myself, but learn from others, that sometimes, specially if sitting, I give one or two light stamps on the floor with one foot; and in the only cases where this has been accurately observed it has been with the right foot.

"With the returning normal consciousness I generally feel some superficial flush over the skin, especially over the face, and a slightly quickened and more thumping heart-beat which does not go beyond causing me very slight malaise ...

" The petits-maux have not been accompanied or followed by hallucinatory sensations of sight, sound, taste, smell, or feeling. There has been, I think, no loss of balance. I well recollect in 1878 running across a Swiss glacier, and jumping across many small crevasses when the initial stage of 'aura' came on, and a reflection shot through my mind, that if ever I was likely to pay dearly for the imprudence of going on, it would be then. But I had insufficient control to stop myself and felt no fear, but only a slight interest in what would happen. I went through the familiar sensations of petit-mal with such attention as I had to give concentrated on them, and not on the ice, and after a few minutes regained my normal condition without any injury. I looked back with surprise at the long slope of broken ice I had run over unhurt, picking my way, I know not how, over ground that would normally have been difficult to me. In the same way a petit-mal when I was playing lawn tennis did not in the opinion of my adversary make my strokes or judgment of pace and position of balls to be struck any worse than normal. I had no recollection of the strokes during a minute or two....

He recalls four fascinating episodes in detail; I quote the first and fourth:

"(1) In October 1887 I was travelling along the Metropolitan Railway, meaning to get out at the fourth station and walk to a house half a mile off. I remember reaching the second station, and I then recollect indistinctly the onset of an 'aura', in which the conversation of two strangers in the same carriage seemed to be the repetition of something I had previously known — a recollection, in fact. The next thing of which I have any memory was that I was walking up the steps of the house (about half a mile from the fourth station), feeling in my pocket for a latch-key. I remembered almost at once that I had had a petit-mal coming on at the second station, and was surprised to find myself where I was. I recollected that I had meant to reach the house not later than 12.45, and had been rather doubtful in the train whether I should be in time. I looked at my watch and found it within a minute or two of 12.45... I had no memory of anything since the second station some ten or twelve minutes previously. I imagine that I had carried out my intention automatically and without memory.

... "(4) A fourth occasion is perhaps worth record. I was attending a young patient whom his mother had brought me with some history of lung symptoms. I wished to examine the chest, and asked him to undress on a couch. I thought he looked ill, but have no recollection of any intention to recommend him to take to his bed at once, or of any diagnosis. Whilst he was undressing I felt the onset of a petit-mal. I remember taking out my stethoscope and turning away a little to avoid conversation. The next thing I recollect is that I was sitting at a writing-table in the same room, speaking to another person, and as my consciousness became more complete, recollected my patient, but saw he was not in the room. I was interested to ascertain what had happened, and had an opportunity an hour later of seeing him in bed, with the note of a diagnosis I had made of 'pneumonia of the left base.' I gathered indirectly from conversation

*that I had made a physical examination, written these words, and advised him to take to bed at once. I re-examined him with some curiosity, and found that my conscious diagnosis was the same as my unconscious — or perhaps I should say, unremembered diagnosis had been. I was a good deal surprised, but not so unpleasantly as I should have thought probable."*

Jackson's descriptive analysis<sup>8</sup> of the mental state during attacks described by this patient is remarkable. The patient recognised his "recollections" as different from normal memories, being much more vivid and more "satisfactory," but, at the same time, was dimly aware of their fictitious character, indicating some preservation of consciousness, thus resulting in the "mental diplopia" characteristic of the dreamy state. The persistence, during attacks, of performances such as finding his way in a perilous path on a Swiss glacier or, even more surprisingly, to make a correct diagnosis by physical examination of pneumonia of the left base strongly suggests that disturbances of memory rather than of consciousness were the major components of the ictal automatism. Jackson suggested that some of the apparent lack of awareness was the result of concentration of attention on inner feelings. This emphasises that assessment of awareness and responsiveness are not sufficient to characterise the state of consciousness. The tongue smacking and twitching of perioral muscles indicate involvement of the temporal lobes in the epileptic discharge.

#### Uncinate Epilepsy

In Jackson's case 5., the patient's use of the terms *petit mal* and *haut mal* would not be accepted as temporal lobe or uncinata attacks in modern epileptology, but they plainly reflect his complex partial and major generalised fits. Importantly, Jackson believed that the dreamy state was not an aura but an integral part of the attack.

*"Of the patient's slight seizures we may learn much, of the severe ones without warning, very little that is definite... there may be a defect of consciousness only; and there may be 'over-consciousness' ('dreamy state')."*

By 1888 he had seen about 50 such cases, some of which had come to autopsy study. He was impressed by the lesions often seen in the uncus and therefore adopted the term uncinata epilepsy. In *Neurological Fragments*<sup>11</sup> he describes the now familiar hallucinations of taste and smell, the epigastric aura and lip smacking:

*"I have several times drawn attention to what I will now call a group of cases of epilepsy— cases in which there is at the onset of the paroxysms a crude sensation of smell or of taste or in which there are movements of chewing, smacking of the lips, and sometimes spitting, etc. These movements are the indirect, the "reflex," consequences of an epileptic discharge of gustatory elements of the cortex. In some cases of this group there is a warning by what is known as the epigastric sensation..."*

#### Normal or physiological dreamy states

Many notable, literary figures have written of their own comparable experiences. It is unlikely that these are all examples of uncinata epilepsy. But the border is often hazy between epilepsy and these strange psychogenic reminiscences, associative feelings, apprehensions of remote and

mystic experience - dreamy states. In an engaging if Ciceronian essay, Crichton-Browne expounded on many examples of autobiographical descriptions. They are, he states,

*"rents in conscious life through which glimpses of the supraconscious may be obtained. The description given is that they are indescribable. Exceedingly diverse in character,...concerned with those ultimate idea — space, time, matter, motion or relativity — which are beyond the domain of certain knowledge and, according to Herbert Spencer, unthinkable."*

He compares them to the "nebulous and voluminous thoughts" provoked by nitrous oxide inhalation, but these, he says, "have never in them any tinge of fear or alarm". Indeed, he relates that dreamy states when mingled with fear have ultimately merged into epilepsy. We now recognise dreamy states with vivid distortions of sound and vision in hypnagogic hallucinations, psychoses and drug-induced states. For example, dopaminergic medications frequently induce vivid dreams. Crichton-Browne concluded that dreamy states "tarnish for a time the brightness of the brain and reduce the powers of resistance of those who suffer from them..."

He cited Tennyson's Early Sonnets:

*"As when with downcast eyes we muse and brood,  
And ebb into a former life or seem,  
To lapse far back in some confused dream  
To states of mystical similitude;..."*

Tennyson was probably epileptic and Crichton-Browne gives his history. But were these musings physiological daydreams, imaginative reminiscences, or the consequence of seizure activity, as Crichton-Browne believed?

Another famous case was a medical man seen by Jackson (ref 3, pp. 388-9) under the pseudonym of Quaerens (the seeker). He reported similar minor altered consciousness with 'bemazement' in himself. Quaerens quoted Tennyson, Coleridge and Dickens in relation to his own *déjà vu* experiences.

Hughlings Jackson also quotes from David Copperfield: "We have all some experience of a feeling which comes over us occasionally, of what we are saying and doing having been said or done before, in a remote time — of our having been surrounded, dim ages ago, by the same faces, objects, and circumstances — of our knowing perfectly what will be said next, as if we suddenly remembered it."

#### Experimental dreamy states

In the 1940s and '50s, Wilder Penfield, at the Montreal Neurological Institute, artificially elicited "dreamy states" by cortically stimulating the lateral temporal neocortex, the anterior hippocampus or the amygdala in conscious epileptic patients before their surgical resections. During these experiments, the patients experienced "experiential illusions." These illusions involved an alteration, sometimes subtle, of the person's relationship to his or her environment, as well as emotional response. In contrast to psychotics, they remained aware that their altered interpretation was an illusion. A friend's voice may sound remote, or a well-known living room may appear unfamiliar, but the meaning is preserved, the voice does not become depersonalised, nor does the living room lose its identity. Penfield observed that even those patients describing feelings of unreality state that they know at the same time what reality is. Mullan and Penfield<sup>16</sup> classified these illusions into four groups:

1. Auditory illusions accompanied by the perception that sounds were louder or clearer, fainter or more distinct, nearer or farther away;
2. Visual illusions where things seemed clearer or blurred, nearer or farther away, larger or smaller; fatter or thinner;
3. Illusions of recognition where present experience seemed familiar, strange, altered or unreal; and
4. Illusions of emotion consisting of feelings of fear, loneliness, sorrow or disgust.

Many patients experienced the emotion as part of the seizure described as dread or a feeling of impending doom; in others, the emotion may, as Dostoyevsky described, be pleasant or euphoric. Déjà vu and forced, vivid memories, embarrassment, alterations of behaviour, and sexual automatisms may all accompany various dreamy states in temporal lobe epilepsy. A schizophrenic type psychosis complicates a significant minority of patients, but is beyond the remit of this discussion. Structural abnormalities are now being revealed in epilepsy with increasing frequency by modern static and dynamic brain imaging techniques.

### Conclusion

Dreamy states arise in normal subjects, those with intense phobic anxiety and in a variety of psychoses and drug induced states. The diagnosis of the cause rests more on the temporal evolution, and associated neurological feature than with the actual content of the experience.

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