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Medico-legal evaluation of sleep-related automatism

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Automatism

Lord Denning defines legal automatism in Bratty v A-G for Northern Ireland as:

> . . . an act which is done by the muscles without any control by the mind, such as a spasm, a reflex action, or a convulsion; or an act done by a person who is not conscious of what he is doing, such as an act done while suffering from concussion or while sleepwalking.[1]

Fenwick provides a comprehensive medico-legal definition of automatism:

> An automatism is an involuntary piece of behaviour over which an individual has no control. The behaviour is usually inappropriate to the circumstances, and may be out of character for the individual. It can be complex, co-ordinated and apparently purposeful and directed, though lacking in judgment. Afterwards the individual may have no recollection or only a partial and confused memory for his actions. In organic automatisms there must be some disturbance of brain function sufficient to give rise to the above features.[2]

The role of the sleep expert

The discipline of forensic sleep medicine is at an embryonic stage. The majority of the literature is in the form of small case series and case reports. The methodological and ethical difficulties in obtaining highly valid prospective data are generally acknowledged. To provide an expert opinion, the expert must have detailed knowledge of the current developments in medicine, neuropsychology and neuroscience that explain how behaviours may occur without complete awareness, as well as an understanding of the limitations and controversies surrounding the legal demands made by prosecutors and/or defence attorneys. It is thus important that experts providing evidence for apparent sleep-related forensic cases be acutely aware of and follow guidelines laid down by their respective professional and regulatory bodies in their particular jurisdictions.

Expert evidence

The Criminal Procedure Rules (CPR) set out the specific roles and duties of expert witnesses in criminal courts in England and Wales under Part 33. Part 33.2(1) states:

> An expert must help the court to achieve the overriding objective by giving objective, unbiased opinion on matters within his expertise.

Experts must not regard themselves as advocates whose function is to promote the case of the instructing party. Whether they have been instructed by the prosecution or the defence, the expert's duty is to the Court and not to the party that instructed them. Furthermore, it is encouraged by the courts that experts provide a *single joint report* outlining all the facts of the case.

This overriding duty to the court, the principle of impartiality and independence from the engaging party was demonstrated in the sleep-related violence case of R v Lowe[3] where the court requested a single joint report from the experts (which included the first author, IE). More importantly, in the single joint report, *all possible scenarios* were provided including:

1. the actions were conscious and motivated (i.e. that the defendant was lying or malingering);
2. the actions were due to alcohol intoxication;
3. the actions were part of an automatism arising from a confusional arousal/sleepwalking episode;
4. the actions were part of an automatism arising from an epileptic episode; or
5. a combination of the above.

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The experts listed the factors for and against each possibility and left the decision on weighting each possibility to the judge and jury based purely on the facts presented and behaviours described. This avoided venturing into hypothetical issues of psychology or intent and encouraged a serious, factually based debate focussed on educating the court and delivering justice.

Over the past decade, Australia, New Zealand, South Africa and Canada have also instituted similar rules to the CPR of England and Wales. In the USA, Daubert[4] provides the judge in federal cases with the responsibility of determining the legitimacy of scientific evidence and expertise before admitting expert testimony. This gatekeeping function is intended to exclude evidence based solely upon subjective belief or unsupported speculation.

Canadian courts have gone a step further and cited Daubert favourably, thus increasing judicial gatekeeping in assessing the validity of expert evidence. The Canadian Supreme Court has set four criteria for admissibility of expert testimony: relevance necessity, absence of an exclusionary rule and proper qualifications of the expert.[5]

A recently published method to help experts maintain independence and provide unbiased testimony – the CHESS method for forensic opinion formulation – contains five steps:

C – formulating the Claim (preliminary opinion);
H – establishing a Hierarchy of supporting evidence;
E – Examining the evidence for exposure;
S – Studying the evidence; and
S – Synthesising a revised opinion.

The authors suggest that this method provides a framework for formulating, revising and identifying limitations of opinions, which will allow experts to maintain neutrality in their expert evidence.[6]

The assessment of sleep-related violence

The assessment of a person accused of a violent act that may have arisen from sleep requires a systematic and thorough evaluation of all possible diagnoses. The core clinical presentation in purported sleep-related violence is one of amnesia for a violent act. The assessment of apparent sleep-related violence should therefore include consideration of all possible causes of amnesic violence.

The common conditions implicated in apparent sleep-related violence are: the parasomnias (see below), epilepsy, alcohol- or substance-related violence, dissociation or malingering.

Parasomnias are sleep-related states defined as 'unpleasant or undesirable behavioural or experiential phenomena that occur predominantly or exclusively during the sleep period'[7] or 'a group of sleep disorders broadly defined as undesirable physical or experiential events that occur within entry into sleep, within sleep, or during arousals from sleep'.[8] The parasomnias most frequently associated with forensic consequences are the disorders of arousal (DOA): confusional arousals, sleepwalking/sleep terrors and their variant sexsomnia, and parasomnia due to drug or substance use.

The other important forensic parasomnia is rapid eye movement (REM) sleep behaviour disorder (RBD).

These conditions come to the attention of the courts generally because of a violent act resulting in injury, disability or death for which the accused claims amnesia. The violence may take the form of physical or sexual assaults, or omissions that involve endangerment due to lack of control, for example dangerous driving or reckless endangerment.

Violent behaviours during sleep are reported by about 2% of the adult population.[9] The first systematic literature review on sleepwalking violence by Bonkalo detailed 50 historical reports of adult sleepwalking violence, 20 cases of murder and 30 related to other criminal acts.[10] There were several common characteristics of this group: a predominance of men, younger age range, a strong childhood and/or family history of sleepwalking, nocturnal enuresis, nightmares and agitation on awakening.

Bonkalo proposed guidelines for the clinical and forensic evaluation of these cases.[10] Fenwick[11] and Mahowald and Schenck[12] have also published guidelines for assessment of forensic sleep disorders. In the past three decades, there a significant medical literature has emerged on the relationship between violence and sleepwalking. Severe violence is less common, but there have been a number of cases in which attacks of extreme ferocity have been recorded resulting in death. In the Canadian case of Parks, the accused exhibited a complex and prolonged episode of violence.[13,14] Whether this was a sleepwalking episode is disputed. The case of Lowe (2003) demonstrated the degree of force possible through sleep-related violence. Complex cases such as these are rare occurrences, and approximately 100 cases of sleep-related killing have been reported in the literature.[15]

It is important in the assessment of a person charged with violence that may be sleep related or who is claiming amnesia for the episode to investigate systematically all these possibilities and always to bear a high index of suspicion for malingering. Particular behaviour related to sleep may be a presenting symptom of one of several possible diagnoses. Physical violence, sexual violence, dangerous driving and self-injury may all occur from a single diagnosis, for example sleepwalking or epilepsy, rarely from multiple causes, and there may be several possible explanations for a single type of behaviour.

Non–rapid eye movement parasomnias or DOA

For the diagnosis of non–rapid eye movement (NREM) parasomnias in the forensic assessment of sleep-related violence, the following additional guidelines are useful:[11,12]

1. There should be *disorientation on awakening*. A straight arousal into clear consciousness is unlikely to occur on awakening from a somnambulistic automatism.
2. *Confusional behaviour* should occur. Any witness to the entire event should report inappropriate automatic behaviour, preferably with an element of confusion.
3. There is usually complete *amnesia* for the event. Memories are poorly recorded during stage N3 sleep and equally poorly recalled. It is, however, possible for fragments of distorted memory to be retained.
4. There should be a *trigger* or *precipitating factors*. The presence of an *internal* factor such as sleep-disordered breathing (SDB) and periodic limb movements (PLMs) is important for management purposes. The presence of *external* factors such as noise or physical contact or touch due to proximity may also trigger sleepwalking, and are important legally. Alcohol, sleep deprivation and use of drugs (prescribed and others) are regarded as *external triggers*. A recent case-control study identifies the following triggers for sleepwalking reported by patients and their prevalence: stress (52%), strong emotions (42%), sleep deprivation (27%), alcohol (12%) and intense physical activity (5%).[16] Sleepwalking usually occurs due to something 'going bump in the night', and hence the victim is frequently someone who just happened to be present and who may have been the stimulus through touch, pressure or noise for the violent episode.
5. There should be no attempt at *concealment*. Attempts to conceal the incident suggest the presence of consciousness and intent.
6. The behaviour is almost always *out of character* for the individual. Thus, sleep-related violence in a sleepwalker usually occurs in individuals who have never or rarely previously shown violent behaviour during wakefulness and are usually 'of good character'.
7. There should be an *absence of any factors suggesting intent*. Evidence of pre-planning, motivation and behaviours reported during the event that suggest conscious motivation all point to a non-sleep-related cause of the violence.

In the forensic context, sleep laboratory studies (polysomnography [PSG]) will add value by excluding or identifying possible internal trigger factors or other organic causes for the behaviour, for example SDB and PLMs. It is also useful to assess the individual's response to external triggers, for example alcohol or sleep deprivation. In addition, the PSG is essential to diagnose RBD and epilepsy.

It must be emphasised that as in the diagnosis of any medical condition, the diagnosis does not rest purely on the results of investigations, but rather on the analysis of all data, including the history, physical examination mental state, cognitive state, collateral information from family and professionals and the results of tests and investigations. It is essential for the expert witness to be a clinician who regularly sees patients with parasomnias (or other relevant conditions causing automatism). The layperson or non-specialist clinician will have no appreciation of the complexity of behaviour that is compatible with parasomnias, where the behaviour is believed to arise from the central pattern generators (CPGs).[17] Cosmo Hallstrom, Fellow of the Royal College of Psychiatrists, stated

> People do sleepwalk and they do strange things in their sleep, but it usually is no more complex than grinding the teeth or smacking the lips – at most they may get up and make a cup of tea. I would think it was extremely difficult to perform such a complex manoeuvre as having sexual intercourse while asleep – especially if the other person is unwilling.[18]

They need to establish corroboration of any pre-existing disorder, and order and analyse sleep studies. Although a normal sleep study does not rule out sleepwalking, it may reveal sleep apnoea, nocturnal epilepsy, confusional arousals or RBD. There are markers for sleepwalking on polysomnography:

- a higher proportion of slow wave sleep (SWS), especially when very fragmented;
- increased arousal index (arousals per hour);
- increased relative power of low delta activity;
- hypersynchronous delta activity; and
- increased cyclic alternation pattern.[19]

The facts of the case and the behaviour during the 'event' are the most important data, all of which must fit that of a DOA. A normal PSG does *not* exclude the diagnosis of sleepwalking, nor can sleep studies provide confirmation or exclusion that a person was sleepwalking at the time of the alleged crime. They can only point to the likelihood of the diagnosis in combination with a substantiated clinical history and thorough clinical evaluation of the individual.

之前暴力實施夢的病史、夢的回憶、床伴的病史以及PSG上快速眼動失調的發現將證實診斷。

RBD

Rapid eye movement (REM) sleep behavior disorder (RBD) is a sleep disorder that causes people to act out their dreams

The prior history of violent enactment of dreams, recall of the dreams, the history from the bed partner and the finding of the loss of REM atonia on the PSG will confirm the diagnosis. Where there are secondary

causes such as medication, the medical history and sequence of symptoms will usually make clear the temporal relationship between symptoms and commencement of the precipitating substance.

The secondary causes of RBD that may be of relevance to the forensic context are alcohol withdrawal, stimulant abuse, psychotropic medication and the association with major stressful events. The most important factors in the medico-legal arena will be those that predict the future risk of harmful behaviour. Idiopathic RBD is well controlled with medication, and the risk of further neurological disease well documented. The courts should be advised to recommend ongoing medical surveillance.

Epilepsy 癲癇

Nocturnal frontal lobe epilepsy (NFLE) is an important, though infrequent, differential diagnosis of apparent sleep-related violence. Tassinari et al. hypothesised that the paroxysmal activity in NFLE, arising from the epileptogenic area, acts as a trigger by the release of the CPGs that allow innate motor behaviours to emerge.[17] Considering the similarity between epileptic events and some parasomnias (especially somnambulism), they speculate that the activation of the CPGs also plays a role in producing parasomnic behaviour stating that

> irrespective of whether the trigger is an epileptic phenomenon or a sleep-related dysfunction, the resulting motor event is still the same and consists in the activation of repetitive motor patterns which represent innate motor behaviours.

Epilepsy and parasomnias not only share many common clinical presentations but have also been treated in a similar manner by the law. NFLE and DOA are difficult to distinguish on clinical grounds alone:

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> *Behavioural Manifestations*: The patterns are frequently similar both in terms of the timing and the nature of the behavior. Seizures may be precipitated by sleep or occur primarily in certain sleep stages. Drowsiness and NREM sleep EEG activity facilitate the propagation and synchronization of epileptiform discharges which in turn facilitate the clinical manifestation of seizures. Episodic nocturnal wanderings (ENW), a variant of NFLE, begin with a sudden awakening associated with movements followed by agitated somnambulism and violent motor behavior. This may be impossible to distinguish from a violent sleepwalking episode. A reliable description of motor events occurring during the night is often difficult to obtain. Also the available standard diagnostic criteria for nocturnal motor episodes lack reliability in the case of several parasomnias and for NFLE are still in development.[20]

Co-morbidity, coexistence and natural history of DOA and NFLE

The possible coexistence of nocturnal parasomnic attacks in epileptic patients or their families and the finding that up to a third of the patients with NFLE have a history of sleep terrors, sleepwalking, sleep talking, rhythmic movement disorder and enuresis presents further difficulties in differentiating the two conditions. Parasomnic attacks have also been shown to be more common in patients with nocturnal frontal lobe epilepsy and in their family compared to controls.[21–23] DOA can usually be distinguished from seizures by their exclusive occurrence in sleep combined with the low rate of same-night recurrence and the non-stereotypical pattern of movements. The features of NREM parasomnias that differ from NFLE are early age of onset, decrease in frequency or disappearance after puberty and rare episodes of long duration. The features of NFLE are that it typically first occurs between the ages of 10 and 20 years, often persisting into adulthood; it manifests frequently with complex and repetitive behaviour of short duration; and it has a tendency for multiple same-night recurrences that occur in a stereotyped fashion with tremor, dystonia, ballism or abnormal movements present during the attack. The recent description of a possible variant of DOA, *status parasomnicus*, may make this clinical differentiation even more difficult.[24,25]

Video-polysomnography (V-PSG) monitoring together with careful history taking may thus represent the only tool to distinguish NFLE from other non-epileptic paroxysmal motor disorders of sleep. It is recommended that V-PSG and a full bipolar EEG montage (according to the International 10–20 System) be used in all subjects with a complex motor presentation arising within the sleep period, and some authors suggest a minimum 72-hour observation period.[21,24–26]

Voluntary intoxication

Violence due to alcohol and substance use is far more common than violence due to parasomnia and epileptic violent behaviours. Violence due to alcohol and/or substance use can occur during the intoxication or withdrawal. Alcohol and other substances are accepted triggers of DOA.

Alcohol-related violence is usually the result of intoxication and less frequently due to withdrawal or seizures. Alcohol-related violence is far more prevalent than that of violence due to parasomnia or seizures, and this should be an important consideration in the assessment of a purported sleep-related crime. Appropriate emphasis to this should be provided when alcohol is a co-factor in forensic cases of apparent sleep-related violence.

Review of epilepsy not guilty by reason of insanity (NGRI) verdicts in England and Wales between 1975

and 2001 found that alcohol intoxication was a co-factor in 62% of cases and alcohol withdrawal in about 30%. In particular, only 7.3% of all NGRI verdicts over this 26-year study period were due to epileptic automatism, making the finding of an epileptic automatism a very rare occurrence.[27]

Alcoholic blackout

Alcoholic blackout is defined as 'memory loss, without accompanying loss of consciousness, for events that occur during drinking'. In the differential diagnosis of sleep-related violence, alcoholic blackouts are often difficult to distinguish from a parasomnia, since both present with complex coordinated behaviour associated with amnesia for the events of the episode.

Blackouts are divided into two categories: en bloc blackouts and fragmentary blackouts. En bloc blackouts are classified by the inability to recall any memories from the intoxicated period, even when prompted. Fragmentary blackouts are characterised by the ability to recall certain events from an intoxicated period, yet to be unaware that other memories are missing until reminded of the existence of these 'gaps' in memory. Research indicates that fragmentary blackouts are far more common than en bloc blackouts.

Recent studies have shown a surprisingly high prevalence of alcoholic blackouts in the adolescent and university age groups, associated with a higher than expected degree of risk-taking behaviours, including sexual activity, vandalism and fighting. A recent study comparing the risk of violence with alcohol found a 13.2-fold increase of risk of criminal violence within 24 hours of alcohol consumption. Furthermore, the prevalence of alcoholic blackouts is much more common among social drinkers than previously assumed. It is noteworthy that large amounts of alcohol – particularly if consumed rapidly – can produce either fragmentary or en bloc blackouts. It is now thought that the rate of increase of blood alcohol concentration (BAC) levels is more significant than the absolute BAC level in the genesis of an alcoholic blackout.[28–33]

Alcohol and NREM parasomnia

Alcohol at all doses and levels has consistently been shown to increase SWS in the first half of sleep, when NREM parasomnias are most likely to occur. At high doses, alcohol increases the all-night SWS percentage. The prevalence of alcohol as a reported trigger for NREM parasomnias (DOA) is confirmed by several studies, and is in the region of 12–26%. In the forensic context, several authors have described this relationship in surveys and clinical case reports.

Hartmann first studied the effects of alcohol on an individual monitored by polysomnography.[34] His patient, P.H., consumed two typical cocktails on nights 2–4 of four non-consecutive nights of polysomnography with the following result:

> On Night 2, 1½ hours after sleep onset, he began talking and cursing in his sleep, disconnected himself from the electrodes, got up, and wandered down the hall; he looked confused and could not be awakened for a time by the technician. This episode was very similar to some of P.H.'s milder sleepwalking episodes as described by his wife.

Abstinence from alcohol led to full resolution of his nocturnal wandering.

A further example exists in the English case of Lowe, a subject with a long history of alcohol-associated nocturnal wandering, where alcohol provocation, prior to PSG recorded sleep, potentiated a confusional arousal fulfilling the ICSD-2 criteria. In this case, the subject had an additional trigger factor for sleepwalking – SDB.[3] In the case of Bilton, another subject with a documented history of nocturnal wandering associated with alcohol intake, the diagnostic assessments confirmed the presence of two internal trigger factors: SDB and PLMs. New forensic categories for disposal of defendants were mooted by Schenck and Mahowald following a case of sexsomnia potentiated by alcohol abuse. In the original description of the entity of sexsomnia, 4 of the 11 patients had an alcohol correlation.[35]

Lopez et al. found that 12% of patients reported alcohol as a trigger for sleepwalking.[16] It is accepted in sleep medicine that factors that increase SWS and/or factors that increase sleep fragmentation (such as SDB) can potentiate and/or trigger NREM parasomnias. Previous case reports and case series have demonstrated the triggering of NREM parasomnia by SDB and/or the treatment of obstructive sleep apnoea (OSA). Alcohol can cause OSA in asymptomatic snorers and is known to worsen sleep apnoea in patients with pre-existing OSA. This effect on breathing and oxygenation occurs predominantly in the first part of the night when NREM parasomnias most commonly occur.

Both the historical and current sleep-medicine literature strongly supports the premise that alcohol ingestion and alcohol abuse potentiate and/or trigger NREM parasomnia and nocturnal wandering. Further research on the impact of alcohol in subjects with NREM parasomnias, with and without the presence of SDB, is needed to clarify the pathway(s) involved in the triggering of sleepwalking and nocturnal wandering.

The legal position in the UK is that *voluntary* intoxication with alcohol or drugs is not considered a valid defence for criminal behaviour (Majewski[36]). However, it can be a defence to crimes of specific intent. Where alcohol is a known trigger to sleepwalking, this may not be a defence on the basis of prior fault (the Scottish case of Finegan v Heywood[37]).

As Reuber and Mackay note, in the case of Pooley (unreported), HHJ Tyrer noted that voluntary intoxication did not exclude the sleepwalking case:

> Concurrent causes can allow for the defence of sane automatism to be left to the jury even if one of the concurrent causes is self-induced intoxication.[ref]

This task of dissecting out the particular cause of incapacity of the defendant also occurred in the case of Stripp,[38] where the jury had to decide whether it was alcohol or a blow to the head that caused Stripp's condition. The case of Harris[39] illustrates that diseases caused or triggered by alcohol (in this case, delirium tremens) are treated differently in law from voluntary intoxication by alcohol.

In the Canadian case of Daviault,[40] however, their Supreme Court decided to acquit the defendant based on expert testimony that linked automatism to an alcoholic blackout. There is at present some debate within the medico-legal community regarding the nature and validity of a relationship between automatism and alcoholic blackout. The nexus of the debate revolves around whether someone in an alcoholic blackout possesses the requisite mens rea and on the degree of 'voluntariness' exercised by the individual during a blackout.[41–43]

Dissociation

Dissociative episodes are an important differential diagnosis of sleepwalking. Sleep-related or nocturnal dissociative disorder is often associated with a history of childhood abuse, either sexual or physical. They are hysterical fugue episodes, and similar episodes also often occur during daytime.[44,45] Observation as an inpatient may be necessary to diagnose dissociative episodes.

Malingering

"故意产生虚假或严重夸大的物理或心理症状，其动机是外部激励措施，如逃避兵役、避免工作、获得经济补偿、逃避刑事起诉或获得毒品"

The DSM-IV-TR defines malingering as 'the intentional production of false or grossly exaggerated physical or psychological symptoms, motivated by external incentives such as avoiding military duty, avoiding work, obtaining financial compensation, evading criminal prosecution, or obtaining drugs'. An early study reported that 20% of the offenders claiming amnesia for an offence were fabricating the memory. More recently, it has been suggested that this may be much higher. The likelihood of malingered amnesia may be greater in offenders with antisocial personality disorder. In a survey of forensic practitioners, Rogers found 16% of malingerers in forensic cases and about 8% in non-forensic cases. In a further study, 15–17% of malingerers were found in forensic examinees and 7–8% in non-forensic. Pollock, using the MMPI-2 and the SIRS Interview Schedules in 60 consecutive referrals from prison to a regional secure unit, found 32% to be either fabricating or exaggerating their symptoms.[46–49]

Assessment

A thorough clinical evaluation following the basic principles of history taking, clinical examination and repeated history taking are important tools. It is also essential to study the defendant's first account, given to the police, as this often reveals a much greater knowledge of the offence than is subsequently claimed. Suspicion of malingering should be raised if the defendant claims to have sleepwalked for the first time during the offence, there is patchy recall of events or this recall changes with repeated evaluations.

An inpatient assessment with 24-hour observation by a multidisciplinary team may be necessary. In the prison or secure hospital setting, the defendant can be observed over a number of days or weeks, carefully recording all interactions and behaviours. Under these circumstances, the individual is under significant pressure to produce sleepwalking episodes to bolster his defence, and a multidisciplinary assessment of any 'sleepwalking' episode should be able to distinguish bona fide sleepwalking from bogus episodes. The exclusion of malingering is one that should take the highest priority where an expert is tasked with assessing a case of apparently sleep-related crime. Mahowald et al. report that in a small number of cases, they suspect males attending for evaluation were seeking to have their 'sleep disorder' validated in the event of criminal charges related to spousal violence or homicide.[50,51]

對任何"夢遊"發作的多學科評估都應該能夠區分真正的夢遊和虛假發作

Circumstantial factors relate to issues that make malingering or alternative causes difficult to exclude, or confirm the likelihood of an automatism: the presence of a motive for the illegal act, consumption of large amounts of alcohol or drugs or contriving the circumstances of the act. One example is a defendant who plied his victim with alcohol prior to raping her allegedly during an episode of sexsomnia, whilst showing signs of physical attraction during the evening (personal communication to J.R. from prosecution barrister). Another is the Glaswegian taxi driver, John Docherty, who had suspicions that his wife was having an affair.[52] By contrast, Kenneth Parks had an excellent relationship with his in-laws, and no motive for killing them.[13,14]

Episodic factors relate to the details of the behaviour shown by the accused: behaviour that shows executive function, whether episode consistent with the cause of automatism posited, and attempts to cover up evidence. Examples include seeking out the victim, episodes that are longer than consistent with parasomnia such as behaviour that showed physical attraction to the victim in cases of alleged sexsomnia. In the case of Stephen Davies, he allegedly called his victim a 'horny bitch'.[53] Falater had hidden his bloodstained clothing and knife in his car.[14] The length of time it would have

taken Parks to dress, drive 23 km to his in-laws' house and carry out the assaults was estimated to be *at least* 25–30 minutes,[14] which is longer than the typical sleepwalking episode (although not impossible). If the defendant alleges a loss of consciousness (due to sleep or syncope) at the wheel, then the details of the accident must be consistent with that before automatism can be considered – so there must be no evidence of braking or sudden swerving.[54]

Accused characteristics are relevant details of the accused's character and medical history that support or refute automatism. They include behaviour that is out of character for the accused, the presence of a disorder that could cause automatism that precedes the episode, or a history of antipathy between the accused and the victim. The accused's history of a disorder should predate the incident, and preferably be corroborated. The expert witness cannot rely on the accused's account of sleep-related episodes – he is not in a position to know much about them, and the expert witness cannot simply repeat the accused's account as a matter of law (this amounts to 'oath-helping'). In the case of NREM parasomnias, a family history is important, although not essential. The stronger the family history, the more dramatic the behaviour tends to be.

An example of relevant characteristics of the accused comes from the murder by Stephen Reitz of his lover on Catalina Island in 2001. During a romantic getaway, he killed her, inflicting numerous fractures, stab wounds and other injuries. Reitz was known to be violent, and family friends reported seeing bruises and bite marks on the victim in the past. On the night in question, Reitz indulged in alcohol and cocaine.[50] He did not seek to cover up the offence, going to the police when he discovered the body. The jury convicted Reitz of first-degree murder despite the evidence from sleep studies (which showed a significant and violent night terror).[55]

It can be seen that in some cases, it is impossible to be certain – the case of Parks still divides opinion among forensic sleep experts to this day, for example. Even when the defendant had a good history of a relevant medical condition, the facts about the particular episode may make automatism unlikely. Several of these issues relate to the difficulties in excluding malingering. The presence of a motive or a violent nature are not reasons to affirm or presume guilt by themselves, but given the difficulty in excluding conscious and deliberate action in these cases, they rightly make both experts and juries highly sceptical. Diagnosis of the particular cause of automatism helps the jury to determine the appropriate verdict if they acquit the accused – a plain acquittal or the special verdict.

Conclusion

The medico-legal assessment of the parasomnias embraces the areas of sleep disorders, neurology, psychiatry and forensic medicine. The forensic sleep expert needs the requisite clinical skills and qualifications to straddle all these disciplines. More importantly, he must provide an unbiased and scientifically valid viewpoint when presenting in the courtroom.

It is not the role of the sleep expert to make a case for or against a particular defence; the primary role of the expert is to provide all possible scenarios based on valid, substantiated and current medical and scientific data in the field. It is essential that he or she take a holistic, non-partisan view of the case after a thorough examination of all the information and full examination of the accused/defendant. A multidisciplinary team approach to the evaluation of the individual involved in these actions is to be recommended combined with an impartial, ethical and scientifically valid approach to expert testimony.

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