

EDITORIAL REVIEW

On automatism

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‘Entre le crime et l’insanité, il existe une zone neutre; sur une de ses bords, on n’observe qu’un peu de folie et beaucoup de perversité; à la limite opposée la perversité est moindre et la folie domine.’ [1]

‘Between crime and insanity there is a neutral zone; at one side of that zone one finds some craziness and a lot of perversity, whereas at the other side, perversity is less and craziness dominates.’

Introduction

To the general public, the term ‘automatism’ signifies ‘automaton-like behaviour’, or ‘the state or quality of being automatic; mechanical or involuntary action’ [2], during which an individual is apparently unable to exercise voluntary control over his conduct. Such a loss of voluntary control is understood as having resulted from serious disturbances of the personality caused by physiological changes, as opposed to ‘loss of control’ in a moment of passion or rage.

In medicine, ‘automatism’ relates to a set of behaviours that occur outside of the conscious control of the patient, and it connotes the meaning that something medically serious and threatening to the health or life of the individual has taken place, outside of the awareness of consciousness and independent from the individual’s will. Automatic states are serious disease events that require prompt and concerted intervention.

Legally, ‘automatism’ implies a complex concept inextricably tied to a defence against a criminal charge. Automatism as a defence does not deny that an unlawful act has been committed, but rather that the accused could not exercise voluntary controls to prevent committing the act, because, at the time, such controls were not operating because of medical problems. Automatism is a

total defence in the sense that, on proving that a crime was committed while in a state of sane automatism (*vide infra*), the accused simply walks out of the courtroom as a free person. Such an outcome conjures images of criminals being free after committing serious, often repugnant, crimes. Automatism in law, therefore, is fraught with deep social and political implications, let alone scientific controversies about its existence outside of a narrow range of neurological and psychiatric conditions. Important as this concept is, specially in the Anglo-Saxon legal system, it is strange to notice the paucity of related publications in the psychiatric or forensic literature. A review of several data sets, yielded only eight papers since 1997, the most important of which, three of them, appeared in legal journals. The other five were about neurological conditions.

This paper is divided into three sections. First, medical conditions that could lead to a state of automatism will be highlighted. Second, elements in medicine and law that form the foundation of the concept of automatism will be reviewed. Finally, a review on how automatism applies in law is presented. Throughout, legal cases will be referred to in order to help the reader find the connections between the medical and the legal understanding of automatism. In deference to the space allotment for a paper of this nature, however, details will have to be spared.

Automatisms in neurology and psychiatry

Gruhle [3] coined the term ‘paralysis of the ego’ to denote a discontinuation in the psychic life caused by a cessation in the flow of a sense of consciousness. Delgado [4] opined that in schizophrenia, paralysis of the ego or morbid automatism occurs when there is a loss of mastering over the interior environment, leading to ‘the loss of a sentiment of one’s own activity and of the feeling of autonomy’. Pacheco e Silva [5] described automatisms as ‘todo pensamento, todo ato que tem lugar espontaneamente, independente de ação da vontade, podendo mesmo, em alguns casos, escapar à esfera da consciência’ (thoughts or acts that happen spontaneously, independent of the will, and which on occasions may even escape conscious registration). This author differentiated true ‘mental automatisms’ [6] from subconscious acts resulting from habit, custom, or the mechanization of conscious acts that are repetitive and learned (walking, gesturing, riding a bike, driving, etc.).

In true automatism the individual suffers from a discontinuation of the history of psychic life [7], during which he may perform simple or complex actions in a more or less uncoordinated fashion without having full awareness of what he is doing [8]. Afterwards, there may be a confused memory of the act, or total amnesia for the whole episode. Automatism is thus an activity performed without conscious knowledge on the part of the subject, and is usually followed by partial or complete amnesia [9].

Among neurological conditions, epilepsy comes the closest to this understanding of automatism, the quintessential form of which being complex partial seizures. These epileptic (Gr. *epilambanein*, to attack or to seize) seizures usually begin with a motionless stare, abrupt interruption of previous behaviour and, within seconds, 'stereotyped non-purposeful movements, known as automatisms, such as swallowing, lip-smacking, chewing, pacing, repetitive or fumbling hand movements, humming, or mumbling' [10]. During this phase of the seizure, which lasts 1 min or so, the patient is unaware of the environment and will not remember the event afterwards. Feelings of depersonalization and derealization may accompany the entire complex. The supposedly criminogenic nature of epilepsy and its potential for violent behaviour could be credited for the original development of case law on automatism. In 1927, East [11] commented that 'if the jury accepts the suggestion that a crime has been committed during the condition of epileptic automatism, *the irresponsibility of the accused is acknowledged*' (emphasis added). Often, however, homicidal epileptics are not just epileptic individuals, but usually they are also either mentally ill or developmentally disabled [12]. Traumatic brain damage, such as contusions, lacerations, and in particular concussion associated with a violent movement of the brain inside the skull and defined as temporary paralysis of nervous functions leading to a state of dazed unconsciousness, could cause automatic behaviour. In *Bleta v. the Queen* [13], a case of post-traumatic automatism, the court recognized that the accused was in an automatic state of mind after a severe blow to the head suffered during a fight with the victim. Bleta was acquitted on a charge of non-capital murder. Space does not allow a full review of organic brain conditions that could be associated with automatic behaviours. The reader is referred to a still valuable overview on these matters compiled by Rose [14] in 1970 and is reminded of Davenport's dictum [10], also valid to this date: '... in general, the more rapid the metabolite change, either from normality or back toward normality, the more likely seizure is to occur.'

In psychiatry, schizophrenic automatisms are well known and are related to echolalia, echopraxia, and *flexibilitas*

cereae as well as command automatism, or the automatic following of suggestions. The literature in this area includes one paper on command automatism to television [15]. Unlikely as it might be, there is also one reported case of post-hypnotic automatism that went all the way to the European Court of Human Rights [16]. Apart from the automatisms that might be seen to be associated with schizophrenia, there are three situations in which automatic behaviour has been advanced as a defence against serious criminal charges. Needless to say, the controversy in relation to automatism defence clearly swirls around these three conditions.

The first is dissociative reaction, which is based on the concept of dissociation as articulated by Janet [17] among hysterical patients at La Salpêtrière. Dissociation implies a splitting off, or independent functioning of a group of processes from the integrative overall activity of the mind, and underlies every symptom of hysterical neurosis up to double or multiple personalities, but it can also be inferred in out-of-body experiences in individuals who have suffered a cardiac arrest, as well as in mystical experiences underlying religious phenomena. Dissociated states include possessions, voodoo ceremonies, and the experiences of mediums in séances. It could lead to autoscopy, or the external doubling of the individual who sees himself as in a mirror image outside of the self [18]. The use of dissociation as a defence against a criminal charge, however, is a more recent development and signals a shift towards a redefinition of automatism from serious physiological states to psychological and emotional conditions within the personality, not necessarily of a hysterical nature.

The second condition relates to a psychological blow produced by severe, unexpected, and sudden emotional shock and acute stress, which in the absence of any physical factors causes an individual to act like an 'automaton'. This defence, close to 'provocation' [19], is based on the premise that any individual, even one with the best personality structure, who had never had any mental condition or emotional problems, could be so overcome by devastating news and dissociate. *R. v. K.* [20] is, possibly, the best example of this defence. Mr K., a devoted father and husband, killed his wife after hearing from a friend over the telephone that she was leaving him. Mr K., in a dazed condition, embraced her and begged her to stay. Some 15 min later he emerged from a 'dreamlike' state to find her asphyxiated by his forceful and extended embrace. He vaguely remembered placing his arms around her, and then, next, seeing her on the ground. The defence asserted that he had suffered 'an emotional blow, as forceful as any external blow to the head' during which his mind 'registered little', so that he 'did not know what was happening, his mind no longer being in control of his

actions'. Not surprisingly, assessing the reliability of these claims is a matter of concern to the court. In *R. v. Rabey* [21] the court asserted that 'automatism as a defence is easily feigned', and in *R. v. Bartlett* [22] it noted that in proper cases automatism may be the only defence open to an honest man, but it may just as readily be the last refuge of a scoundrel. Therefore, before accepting this defence, the courts have to consider whether the nature of the emotional shock was overwhelming and extraordinary, not the ordinary stresses and disappointments of life, that the personality make-up of the accused is 'normal', and that there was no pre-existing mental or emotional condition. If a pre-existing mental illness can be proved the verdict will most likely be 'not criminally responsible because of mental disorder' [23], which is the difference between sane and insane automatism [24]. This result was obtained in the case of *R. v. Joudrie* [25], in which the defence claimed that she had acted in an automatic state of mind at the time she shot her husband five times, seriously injuring him, as they were about to receive the decree nisi on their divorce. The emotional shock produced by the final realization of the dissolution of their marriage would have been of the nature required to produce a psychological blow amounting to 'sane automatism'. The Crown contended, however, that although she had indeed been affected by automatism, her mind was unbalanced as a result of a brittle and inadequate personality make-up, and a history of depression, panic attacks and alcoholism, amounting to disease of the mind, hence her automatism was 'insane automatism'. She was found to be not criminally responsible because of mental disorder and transferred to a mental hospital for treatment.

Finally, the third condition, somnambulism, has been described as a 'normal' form of automatism and defined as 'a state of dissociation in which, with the usual personality asleep, some fragment of the personality directs the person into the performance of some complicated act' [26]. Podolski [27] equated automatism with a dissociative reaction, defined as 'coordinated physical activity that has been split off or dissociated from the normal stream of consciously directed and purposeful activity'. Already in 1889, in *R. v. Tolson* [28], it was decided that somnambulism demands an absolute acquittal of an otherwise 'sane person'. Similar reasoning, that contrary to other situations in which automatism develops when the individual was fully conscious moments before the event, whereas in somnambulism it originates from a previous state of unconsciousness (sleep) may have led the court in *R. v. Parks* [29] to rule that, as a defence against a criminal charge, somnambulism exists in the 'middle ground between criminal responsibility and legal insanity'. The nature of this middle ground is, obviously, a legal black

hole, but by so deciding, the court precariously perched a clear medical defect between automatism caused by psychological problems and clear cases of 'disease of the mind'. This finding has been highly controversial. In the event, Mr Parks drove 23 km from his home to his parents-in-law's house, where he stabbed his mother-in-law to death and seriously injured her husband. The complicated set of skills required for these actions, the duration of the spell, and the seriousness of the criminal act indicative of internal personality pathology, cast many doubts about the finding. However, in the absence of rebuttal evidence, the court believed the defence when it stated that: first, sleepwalking was not the result of, or part of, mental illness, therefore, is not a disease of the mind, and second, that there was no medical treatment for sleepwalking other than good health practices. In truth, however, whereas sleepwalking is a fairly common phenomenon, brutally violent acts are not, and whether committed in full conscience or not, they should be seen as springing from internal psychological forces that are not entirely 'normal'. These notions were clearly articulated in *R. v. Burgess* [30], which maintained that sleepwalking was caused by internal factors, it was likely to recur, and it was due to an abnormality of brain functioning. The difference of opinion among experts has been highlighted by Ridgway [31] on the case of *R. v. Falconer*.

Finally, although not clearly associated with a defence of automatism, alcohol intoxication is a form of automatism [32], whose legal effect is neither sane nor insane automatism, but to reduce the seriousness of the offence and to decrease the amount of punishment. Drug-induced conditions, specifically alcohol, cause metabolic changes in the brain so that an intoxicated individual, although not unconscious, may behave without conscious control, and may fail to register the behaviour. Alcohol causes changes in the memory centres of the brain, blackouts, but it is not known whether these changes affect the registration of events or their recall. Neither is it definitely known whether blackouts are cases of anterograde or retrograde amnesia. Goodwin [33] insisted it was anterograde, but selection bias among his subjects cast a major doubt on his findings, and the lack of an objective and clearly discernible sentinel event during an episode of drinking makes it impossible to determine otherwise. Withdrawal syndromes have also been described as being capable of producing automatic behaviour and are used in criminal defences. In *R. v. Abel* [34], for example, defence experts explained that an unusual automatic reaction had been caused by one drink of alcohol in combination with a withdrawal syndrome to paroxetine (a selective serotonin re-uptake inhibitor; antidepressant), which Ms Abel had stopped one week before the events. Arguably, she had no recollection of further heavy drinking, driving under the

influence (170 mg%) in the wrong direction on a busy highway, colliding head on with an oncoming vehicle, and causing the instant death of the other driver. She was found guilty as charged. Unfortunately, a full review of blackouts and withdrawal syndromes is well beyond the space allotted to this paper, so the reader is referred to another publication on this issue [35].

Clinical considerations

Space allows only for a brief review of four factors that lie at the intersect of medicine and law in relation to an automatism defence: the nature of memory; amnesia; whether the automatism was caused by an internal or external factor to the individual; and the likelihood of repetition.

With regard to memory, any of the three memory functions, registration, retention, or recall may be affected during automatic behaviour. Although it would be tempting to compare human memory to that of a computer, human memory is much more complex because recall is never an exact duplicate of what was registered. Registration, retention, and recall could be affected by conscious decisions such as a deliberate lack of attention, by organic factors such as brain damage or intoxication, by unconscious mechanisms related to hysterical forgetting, or simply by lying and denying any memory of a particular event.

Memory could be procedural or declarative [36,37]. Procedural memory is automatic and consists of instinctual skills such as recoiling from fire, and learned cognitive skills such as walking or driving. Declarative memory pertains to events witnessed or experienced. Past events are episodic and are stored sequentially, or are semantic, which is the storage of organized information, concepts, vocabulary, and other general knowledge without regard to sequencing. It is in declarative memories in which humans differ from computers; for unlike a computer, human memory tends to reconstruct events according to life experiences and the emotional and unconscious needs at the time of recall. The emotional need to reconstruct events plays tricks on the individual because reconstruction distorts reality to the point that memories could be denied or developed when no events had taken place, as in *pseudologia fantastica*, implanted memories through suggestions, or in the confabulations of chronic alcoholics.

For its part, amnesia is crucial to an understanding of automatism, because whereas there is no automatism without amnesia, not every case of amnesia amounts to automatism. Plain forgetting is as much a function of memory as is remembering. But the term amnesia does not refer to plain forgetting, it has been reserved to indicate that a pathological process has taken place that

interferes with normal memory functions. Amnesia could present *en bloc* with a sharp beginning and end, as seen in fugues caused by hysteria or by psychomotor epilepsy or in alcoholic blackouts and grand mal attacks, although the end in these conditions might be fuzzy on account of the individual lapsing into sleep because of drunkenness or because of gradual recovery from the post-ictal effects. More frequently observed are lapses of memory, with fuzzy beginning and end, or lacunar memory loss in which the individual realizes that pieces of events are missing, usually after intoxication such as caused by prolonged bouts of drinking.

Determining the cause of amnesia and whether it is caused by organic factors, functional problems, a conscious attempt at distorting the facts, or plain lying is essential to understand a claim to automatism. Overwork, acute emotional states, or psychotic states may cause failures of registration as a result of inattention, but an organic amnesia caused by epilepsy, head trauma, metabolic disturbances, or intoxication could also result in registration failures, as these conditions affect levels of consciousness leading to mood and personality disturbances, disorientation, and varying degrees of unconsciousness, from obfuscation to coma. Obviously, failures of retention could happen if the memory centres are damaged, so that memories could not be stored even if they have been registered. Materials that have not been registered or retained cannot be retrieved, so the loss is permanent [38]. On the contrary, a failure to recall memories that have already been registered and retained is usually caused by a functional amnesia that is probably psychogenic in nature, often hysterical, with the material remaining in the unconscious mind. By definition, if the memory has been registered and is in storage (retained), then it can be accessed. However, although appropriate for clinical purposes, memory retrieval techniques such as visualizing, hypnosis, or drugs, are controversial in law, and are often ruled inadmissible. A conscious effort not to remember painful events, suppression, should not be mistaken as amnesia because of a failure to recall, and should be differentiated from malingering, which could be consciously undertaken or be psychogenic and related to hysterical forgetting. Both suppression and psychogenic malingering are different from obvious attempts to deceive or lying about not remembering.

Amnesia could occur for details and actions that took place before or after an event. For clinical and legal reasons, and in particular, for purposes of litigation, it is very important to determine, as closely as possible, how far before and how far after a sentinel event or trauma does the amnesia extend. The duration of loss of consciousness could be used as an indicator of the severity of the injury. Pre-traumatic or retrograde

amnesia is the 'interval preceding the injury, of which the patient has no recollection' [39]. Retrograde amnesia is shorter than amnesia after the event, usually less than 30 min in most cases. Longer periods, especially those extending into days and weeks, may signal hysterical manifestation. On the contrary, post-traumatic or anterograde amnesia is usually much longer and, in cases of coma, may last for days and even years after the trauma. For purposes of a defence of automatism, retrograde amnesia is of no assistance, because the act in question is supposed to have happened before the trauma, and it could be argued that the individual does not remember simply because of subsequent trauma. Therefore, only anterograde amnesia counts for automatism.

In *R. v. Chhoa* [40], the accused claimed total amnesia for events that took place after he was seriously hit on the head and kicked about during a scuffle. He was not intoxicated. The period of amnesia extended backwards from the time Mr Chhoa found himself in a hospital with serious head injuries and a broken neck to the moment of the fight. His most severe injuries, however, had resulted from a motor vehicle accident in which two of his friends died, and he and two others suffered serious injuries when they hit the pavement on being ejected from a fast-moving vehicle. Although this could not be proved completely, it appeared that Mr Chhoa was the driver; he was the owner of the vehicle and the designated driver for the group. He would have taken off at full speed after the fight and driven recklessly and dangerously for a few seconds until he smashed his vehicle against a bridge abutment. He was found unconscious at the scene. In this case, two incidents of head trauma occurred in quick succession, being beaten on the head during the fight, and hitting the pavement at collision time, both potentially leading to a traumatically altered state of consciousness. On assessment, either Mr Chhoa experienced anterograde amnesia from the moment he was beaten on the head during the fight to the moment of the accident and beyond, in which case, the assumption could be made that he would have driven in an automatic state of mind. Or he experienced retrograde amnesia from the moment of the accident to the moment of the fight and anterograde amnesia after the accident, in which case he would have been fully functional up to the moment of the accident. The inability to determine which one applied introduced enough of a 'reasonable doubt' and was one of the reasons why Mr Chhoa was acquitted.

R. v. Quick [41] introduced the doctrine that the causes of automatism should be dichotomized between internal and external factors. This was further elaborated in *R. v. Rabey* [21]: 'In general, the distinction to be drawn is between a malfunctioning mind arising from some cause that is primarily internal to the accused, having its source

in his psychological or emotional make-up, or in some organic pathology, as opposed to a malfunctioning of the mind that is the transient effect produced by some specific external factor, such as, for example, concussion. Any malfunctioning of the mind, or mental disorder having its source primarily in some subjective condition or weakness internal to the accused (whether fully understood or not) may be a 'disease of the mind' if it prevents the accused from knowing what he is doing, but transient disturbances of consciousness as a result of certain specific external factors do not fall within the concept of disease of the mind.'

The internal/external test establishes the basis on which to decide whether an automatic act should be classified as sane or insane automatism. The dichotomy, however, has produced some unusual results. In *R. v. Hennessy* [42] hyperglycaemia was construed as 'internal' and hence a 'disease of the mind', but hypoglycaemia, as in *R. v. Quick* [41], was considered to have been induced by too much insulin and was, therefore, classified as 'external'. Hennessy's was judged insane automatism, whereas Quick's became a case of sane automatism. The law will have to reverse itself in rare conditions in which the body manufactures too much insulin, which might lead to 'internally' caused hypoglycaemia [43]. The recent case of Padmore [44], acquitted for murdering his friend while seized unexpectedly and without prodromal symptoms by an attack of hypoglycaemia, seems to expand the possibilities of this defence, but it is too early to comment on its legal implications. Although acknowledging that the internal/external test is a 'double fiction', Healy [45] asserted that it is required for prudent and protective reasons of social policy and 'to erect a screen against spurious claims of sane automatism'.

The preoccupation among the public that mental illness causes repetitive and unpredictable violent behaviour underlies the need to determine whether an automatic act was caused by sane or insane automatism. Supposedly external factors (physical blow to the head, or even psychological blow) are unlikely to repeat, but internal ones (mental illness) might endanger public safety. Brudner [46] argued that the fear of future dangerousness is an unacceptable reason to confine claims of automatism, and proposed, as a way to manage the dichotomy, redefining 'disease of the mind' as any mental disorder that renders the individual generally incapable of appreciating the reasonably foreseeable consequences of his actions or of understanding information relevant to executing his conception of well-being.

Legal considerations

'I ... am the murderer... Alyona Ivanovna and her sister Lizaveta Ivanovna, I ... killed ... with an axe. Darkness came over me' [47].

A defence of automatism negates 'the requisite mental state of voluntariness for commission of a crime' [48] and assumes that without voluntary control there should be no guilt. The US Model Penal Code articulates this concept in section 2.01 (1): 'A person is not guilty of an offence unless his liability is based on conduct which includes a voluntary act or the omission to perform an act which it was physically possible to perform' [49].

'Automatism is a term used to describe unconscious, involuntary behaviour, the state of an individual who, although capable of action, is not conscious of what he is doing. It means an unconscious, involuntary act, in which the mind does not go with what is being done' (R. v. K [20]).

Automatism, therefore, is a complete defence. Proof that the crime has been committed during a state of sane automatism leads to a full acquittal, but it has to be proved that the act was both unconscious and involuntary.

An unconscious individual does not possess a functioning mind, is unaware of his acts, and is incapable of performing or experiencing any controlled functions. The term 'unconscious', however, could be confusing because, in psychiatry, unconscious acts are understood in two ways: acts stemming from deep structures of the psychic apparatus, as in the psychoanalytic concepts of id and superego, or acts that occur when an individual's brain has stopped reacting to outside stimuli. In psychoanalytic theory, some elements of the id and the superego remain in the 'unconscious', the repository of our deepest secrets, desires, and complexes; these elements are regularly inaccessible to the individual. Occasionally, deeply repressed issues might surface spontaneously; innocuously, as in Freudian slips, or savagely, as in certain brutal acts. These bursts-through of the unconscious are open windows that allow for the observation of somebody else's soul. Psychoanalytic 'unconscious' acts, however, take place when the individual is fully conscious and is capable of registering and retaining the memory for the event; he knows the what, but fails to grasp the why. For legal purposes, psychoanalytic 'unconscious acts' do not qualify as automatisms. On the other hand, acts could happen while the individual was unconscious and unaware that the act was taking place. Internal medical conditions, external physical force, or serious emotional or mental disturbances may cause an individual to lose the thread of psychic life, so that these interruptions are experienced as 'gaps' that cannot be accounted for. Whatever the disability, it causes the brain not to engage so that it does not register the event, hence the 'gap', signalled by a period of amnesia, in the flow of existence. For legal purposes, acts that take place

during an interruption in the psychic life of the individual qualify as automatisms.

The law requires that to have legal meaning, an act, *actus reus*, has to be voluntary. Although voluntariness and guilt are intertwined, the criminal intention (*mens rea*) or knowledge that the act was wrong, covers only the guilty element in a crime. '*Mens rea* refers to the guilty mind, the wrongful intention, of the accused. Its function in criminal law is to prevent the conviction of the morally innocent; those who do not understand or intend the consequences of their acts. Typically, *mens rea* is concerned with the consequences of the *actus reus*' (R. v. Deviault) [50].

If the act was automatic, that is, unconscious and involuntary, *mens rea* is of no consequence. Lord Denning explained this in *Bratty v. Attorney General for Northern Ireland* [24]: 'No act is punishable if it is done involuntarily; and an involuntary act in this context – some people nowadays prefer to speak of it as 'automatism' – means an act which is done by the muscles without any control by the mind such as a spasm, a reflex action or a concussion; or an act done by a person who is not conscious of what he is doing whilst suffering from concussion or whilst sleep walking.'

Automatism as a defence, therefore, relies on the absence of the voluntary element in a criminal act, not on the element of guilt. Voluntariness as a requisite for a crime has its limitations, for example, in cases of strict liability. As in tort law, in which manufacturers and merchants are liable for any and all defective or hazardous products that unduly threaten the personal safety of consumers, in criminal law, offences of strict liability require no intention of wrongdoing. For as long as an individual is fully conscious, offences such as driving in the night without the lights on even when the driver did not realize the lights were off, or inadvertently not stopping at a stop sign or at a red light, need no proof of intention or lack thereof; the law is not concerned if the action was involuntary; the act itself is sufficient for a finding of guilt. On the other hand, the law recognizes types of involuntary actions that although not taking place while the individual was unconscious could bring exculpation if so proved. These include acts committed under duress, compulsion, or threat (holding a gun to the head), for which the offender is deemed not to have acted voluntarily. Similarly, the law blinks in circumstances when somebody reacts instinctively with a reflexive action, involuntarily, out of personal control and without time to consider any consequences. Examples include if, when sneezing, an individual flails his arms, knocks off a candle and starts a fire, or if a motorcyclist drives erratically while being stung by a swarm of bees. If proved, the former individual will not

be found guilty of arson, and the latter will be exonerated on a charge of dangerous driving. However, although these acts are involuntary, the individual was conscious and remembers them, therefore, they do not qualify as automatism. Only unconscious and involuntary acts qualify for a defence of automatism.

The consequences of an outright acquittal on the basis of automatism of an individual who has committed a serious offence have raised many legal concerns. Apart from the impact on legal theory regarding the limits of criminal responsibility, two other issues have to be weighed: whether an internal or an external factor caused the automatism and the likelihood of recurrence. As noted above, those cases of automatism that have been caused by internal factors, with the exception of sleepwalking and hypoglycaemia, and could be expected to repeat, are adjudged insane automatism, to which insanity dispositions would apply including compulsory treatment, but cases that the law believes are caused by external factors such as psychological blow or physical force, and that are unlikely to repeat, are ruled out as sane automatism. These individuals are acquitted and walk free of further legal encumbrances. In the case of psychological blow automatism, however, the courts have been careful to indicate that ordinary stresses and disappointments of life do not qualify.

Finally, the relationship between automatism and intoxication, and somnambulism needs further exploration. Although intoxication is an external cause and could be considered to be non-insane automatism, it is also self-induced, i.e. voluntary. Social policy dictates that intoxication should not be considered sane automatism, but under the separate defence of drunkenness the accused could claim lack of the requisite specific intent to commit the offence. In *R. v. Devault* [50], however, extreme intoxication was introduced as a complete defence akin to automatism, and placed the burden of proof on the accused who had to establish it on a balance of probabilities. It was expected that these cases would be rare, but the defence proved popular and caused a public outcry, necessitating curtailing its scope in a way that effectively prevented its use (section 33.1 of the Criminal Code of Canada, *supra*). This section declares that individuals are ‘criminally at fault’ if self-induced intoxication rendered them ‘unaware of, or incapable of consciously controlling, their behaviour’, and they voluntarily or involuntarily interfere or threaten to interfere with the bodily integrity of another individual. In the case of somnambulism, *R. v. Parks* [29] remains an anomaly given that somnambulism cannot medically be considered an external factor, but an abnormality of sleep patterns described as a rapid-eye-movement sleep behaviour disorder [51], which, in addition, has all the potential for recurrence so that it

should be more properly subsumed under insane automatism. In Canada, where it has been left to the courts to decide sane automatism on a case-by-case basis [52], *R. v. Parks* [29] remains a potential defence, but a legal fiction that states that whereas somnambulism is obviously an automatism, it should not be considered as such in law. The court managed to square the proverbial round hole by declaring that automatism exists in a special niche between sane automatism caused by external forces and insane automatism caused by internal factors.

The accused who raises the defence of automatism has the burden of proof, but unsupported evidence that the offence was committed during an automatic state of mind is not sufficient. Therefore, in *R. v. Stone* [53], the court ruled that there has to be ‘an air of reality’ to the events before the court leaves the defence with the jury, and in *R. v. Rabey* [21] the court stipulated that the test for psychological blow was objective; the court has to be satisfied with the gravity and severity of the psychological trauma in the absence of previous mental or personality difficulties, otherwise the court will find for insane automatism. Once the judge decides whether the threshold of ‘air of reality’ has been met, the Crown bears the burden of disproving the defence. Except when an accused recklessly or negligently embarked on a course of conduct that he knew was likely to bring about the occurrence of automatism [54], any reasonable doubt that the accused did not have the requisite volition at the time of the act should lead to acquittal. An acquittal on a finding of sane automatism, therefore, would have to follow an algorithm that includes unconsciousness, a lack of voluntary controls, anterograde amnesia, an air of reality, an external factor, and an expectation that the act is unlikely to recur.

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