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A Mind to Blame: New Views on Involuntary Acts[†]

Deborah W. Denno, J.D., Ph.D.*

This article examines the legal implications linked to recent scientific research on human consciousness. The article contends that groundbreaking revelations about consciousness expose the frailties of the criminal law's traditional dual dichotomies of conscious versus unconscious thought processes and voluntary versus involuntary acts. These binary doctrines have no valid scientific foundation and clash with other key criminal law defenses, primarily insanity. As a result, courts may adjudicate like individuals very differently based upon their (often unclear) understanding of these doctrines and the science that underlies them. This article proposes a compromise approach by recommending that the criminal law's concept of voluntariness consist of three parts: (i) voluntary acts, (ii) involuntary acts, and (iii) semi-voluntary acts. The semi-voluntary acts category, which is new, incorporates modern ideas of consciousness and also advances the law. Using some actual criminal cases, this article applies this new three-part grouping and demonstrates how it enhances a more just outcome for defendants, victims, and society. Copyright © 2003 John Wiley & Sons, Ltd.

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In May, 1987, 23 year-old Kenneth Parks fell asleep on his couch while watching an episode of "Saturday Night Live." Typically, such an event would not be considered unusual, but Parks's next acts were. At some point during the night, Parks arose, got into his car, and drove 14 miles across town to his in-laws' house. There, he stabbed and beat his mother-in-law to death and attacked and nearly killed his father-in-law. It was what happened after this tragedy, however, that made legal headlines. Immediately, Parks went to the police and gave himself up. He did not deny what he had done. But his lawyers, marshaling a team of experts, presented an ambitious defense. They claimed the events that took place that evening occurred during an episode of sleepwalking and were therefore involuntary. In a stunning legal victory, Parks was acquitted of all charges, including unpremeditated homicide and attempted homicide (Broughton et al., 1994; *Regina v. Parks*, 1990, 1992).

Parks's attorneys contended that Parks had not only acted unconsciously, but he was also highly unlikely to be dangerous again: (i) Both of Parks's attacks seemed entirely motiveless and Parks turned himself into the police. (ii) Over one-third of Parks's extended family had a history of sleepwalking, night terrors, or nocturnal enuresis. (iii) Evidence showed that Parks suffered various sleep disturbances consistent with somnambulism based on overnight stays in an Ottawa sleep laboratory, where he was observed. (iv) Two of Parks's prison cell mates described incidents where Parks sat up in bed and talked in his sleep. (v) Research revealed no documented cases of repeated violent somnambulism among other individuals, so the probability that Parks would have another violent episode of sleepwalking was very low. (vi) According to expert testimony, Parks's sleepwalking was a rare episode triggered by a combination of precipitating factors, sleep deprivation and high stress, that were unlikely to recur together. (vii) Avoidance of this stress combination, in addition to sleep hygienic measures and drug treatment, would likely prevent future sleepwalking. Indeed, after his acquittal, Parks was put on medication and his sleepwalking episodes ceased (Broughton et al., 1994; *Regina v. Parks*, 1992).

Parks's acquittal is consistent with much of the current law in Canada and the United States (Dressler, 2001; Packer, 1968), accepting the court's determination that Parks was actually sleepwalking and therefore unconscious. For example, the criminal law assumes that most human behavior is voluntary and that individuals are consciously aware of their acts (Denno, 1988; Lacey & Wells, 1998; Packer, 1968). In the United States, some individuals who act unconsciously, such as sleepwalkers, are viewed as not acting at all. They can be acquitted even if their behavior resulted in a serious harm (Dressler, 2001; Packer, 1968). However, this legal perspective is not uniform, either within or across countries. For example, in the United States, courts are split on whether to classify acts of unconsciousness, such as sleepwalking, as sane behaviors eligible for acquittal or as insane behaviors warranting institutionalization (Denno, 2002). While the Supreme Court of Canada has continued to endorse the approach in *Parks* (1990, 1992), it has also imposed more rigid standards for finding involuntariness in comparable kinds of situations (*Regina v. Stone*, 1999). In turn, the English Court of Appeal refused to follow *Parks* (1990) in *Regina v. Burgess* (1991), holding that sleepwalking is a form of insane automatism. While this article focuses on American law, the legal conflicts and debates in other countries concerning the voluntary act requirement are clearly relevant and have provided much of the foundation for American doctrine.

In sharp contrast to the law, some neuroscientific research has revealed a far more fluid and dynamic relationship between conscious and unconscious processes (Denno, 2002). If this is so, most human behavior is not conscious or voluntary in the “either/or” way that the voluntary act presumes. Rather, consciousness exists in degrees depending in part upon how much our awareness is retrievable from memory (Bargh & Chartrand, 1992; Denno, 2002; Hodgson, 1998, 2000). Of course, this finding goes to the heart of one of the most fundamental features of the criminal law.

This article attempts to confront this clash between legal and scientific perspectives by focusing on how new psychological research on consciousness can enlighten criminal law doctrine on voluntary acts (Denno, 2002). Within the context of this modern framework, this article defines the term “consciousness” as the sum of a person’s thoughts and feelings and sensations, as well as the everyday circumstances and culture in which those thoughts and feelings and sensations are formed (Denno, 2002). Given this definition, the typical legal dichotomies (Campbell, 1974) of “conscious” versus “unconscious” and “voluntary” versus “involuntary” are dated and confusing. In other words, the law’s attempt to shoehorn voluntariness into all-or-nothing concepts is based on the science and philosophy of a bygone era.

This article first notes that the “modern” criminal law’s binary voluntary act provision was strikingly progressive and creative at the time it was introduced by the drafters of the American Model Penal Code in the 1950s and 1960s. However, the Model Penal Code’s voluntary act provision no longer reflects the drafters’ original goal of incorporating new interdisciplinary science. Current research also shows that there appears to be no valid scientific basis for a voluntary act dichotomy because consciousness and unconsciousness are a matter of degree, existing in terms of “more or less” rather than “either, or” (Denno, 2002).

There are serious consequences to having a key criminal law doctrine rely on antiquated science. For example, the voluntary act requirement, interpreted by courts primarily through the defenses of automatism and unconsciousness, conflicts conceptually with other criminal law defenses, primarily insanity. The significance of this conflict is substantial: individuals who successfully argue defenses of automatism or unconsciousness can be acquitted whereas individuals who plead insanity can be committed for long periods of time. Individuals who are unsuccessful at either approach can receive long term incarceration or even the death penalty in the United States. Courts treat factually similar cases in vastly different ways because the doctrines and defenses are not distinct.

In light of such difficulties, this article proposes that the voluntary act requirement should be simplified and consist of three parts: (i) *voluntary acts*, (ii) *involuntary acts*, and (iii) *semi-voluntary acts*. The new category of semi-voluntary acts maintains the integrity of the purpose behind the different criminal law defenses. However, this compromise category also provides mechanisms for dealing with people who act involuntarily and with the potential for future dangerousness—the very group of individuals who have most concerned the courts and most fueled the substantive muddle.

THE CRIMINAL LAW’S VOLUNTARY ACT REQUIREMENT

All criminal liability depends on one key principle: A defendant’s guilt must be based on conduct and that conduct must include a “voluntary act,” or an omission

to engage in a voluntary act that the defendant is physically capable of performing (Model Penal Code and Commentaries § 2.01, 1985). This bedrock principle has existed for over three centuries, based on the maxim that civilized societies cannot criminally punish individuals for their thoughts alone. In essence, the criminal law recognizes that we cannot identify anyone's thoughts or predict whether antisocial behavior will result from them (Goldstein, 1959).

In the United States, the criminal law's voluntary act requirement, while rooted in English history (Goldstein, 1959), has been particularly shaped by the American Law Institute's Model Penal Code. Many American law professors view the Model Penal Code as the "principal text" in teaching criminal law because the Code's impact on American law has been so pervasive (Dressler, 2001).

The Structure of the Model Penal Code's Voluntary Act Provision

Before the 1950s, state criminal codes were notoriously inconsistent, archaic, and unprincipled. Then, in 1952, the American Law Institute came to the rescue. The Institute's membership of judges, practicing lawyers, and academics, began to draft a model penal code to inspire state legislatures to reform their laws. In 1962, after many drafts and explanatory commentaries, the Institute published a final Official Draft of the Model Penal Code. That final draft contained provisions pertaining to the general principles of criminal responsibility as well as the definitions of specific offenses. And, of course, the Model Penal Code also incorporated a version of the voluntary act requirement (Dressler, 2001).

The Model Penal Code's voluntary act provision, which is specified in section 2.01, was a wonderfully progressive doctrine that attempted to reflect the science of the era when the Model Penal Code was developed—the 1950s and 1960s—and when the Model Penal Code Commentaries were updated—the 1970s. Unfortunately, the failure to further revise the Model Penal Code has resulted in an outmoded standard that has created a great deal of confusion among courts. Science moves on but in this case, the law has not.

How did this happen? To answer that question, it is necessary to look at what the Model Penal Code says and what may have swayed the individuals who created it. A few examples can illustrate. First, a perplexing feature of the Model Penal Code's voluntary act requirement is that it never specifically defines the term "voluntary." Instead, it provides four examples of acts that are not voluntary: (i) "a reflex or convulsion;" (ii) "a bodily movement during unconsciousness or sleep;" (iii) "conduct during hypnosis or resulting from hypnotic suggestion;" and (iv) "a bodily movement that is otherwise not a product of the effort or determination of the actor, either conscious or habitual" (Model Penal Code and Commentaries § 2.01, 1985, pp. 212–213). The Commentaries explain that these examples emphasize "conduct that is not within the control of the actor" (Model Penal Code and Commentaries § 2.01, 1985, p. 215). However, the Commentaries are otherwise vague about offering any more guidance for interpreting the voluntary act provision.

Another troublesome feature of the voluntary act requirement is that it can apply either to the defendant's mental state or to the defendant's acts. In other words, it can apply to either the *mens rea* or the *actus reus* elements of a crime. Generally,

courts have adopted the term *unconsciousness* to refer to the defendant's claim that she lacked the mental state to have committed the crime and the term *automatism* to refer to the defendant's claim that she did not engage in a voluntary bodily movement. Therefore, the defense of *unconsciousness* can be distinct from the defense of *automatism* even though both are defenses to the assertion that the defendant acted voluntarily. For example, individuals who suffer from a disorder called Limbic Psychotic Trigger Reaction insist that they are totally conscious and aware when they commit motiveless acts of violence against other individuals but they have no control over their bodily movements and they are extremely remorseful afterwards (Pontius, 1993). They could have the defense of *automatism* but not the defense of *unconsciousness*. In contrast, individuals who commit acts of violence while in the throes of an epileptic seizure do not have any control over their bodily movements either, but they are unconscious as well. They could have the defense of *automatism* and the defense of *unconsciousness* (Denno, 2002).

Unfortunately, all these doctrinal roadmaps can collide with the insanity defense. For example, some courts have held that automatism and unconsciousness are defenses that are distinct from the insanity defense, while other courts have held that automatism and unconsciousness are a species of the insanity defense. This conflict can arise in, for illustration, cases involving sleepwalking or epilepsy. Some courts will say sleepwalkers and epileptics were sane but acting involuntarily when they committed their acts. Other courts will say they were insane.

While American courts are nearly split on this issue (Denno, 2002), the difference between the potential outcomes is critical. Unlike defendants who are determined to be insane, defendants with automatism or unconsciousness do not face the possibility of being institutionalized and they can receive an unqualified acquittal. For whatever reason, courts do not appear to conflate as frequently automatism and unconsciousness with diminished capacity, a defense applicable to defendants suffering from abnormal mental conditions that do not reach the level of insanity. Regardless, there are few conceptually clear lines distinguishing diminished capacity from unconsciousness and automatism—or from insanity.

These definitional problems are all the more serious because assessing voluntariness is a critical first step to establishing *mens rea* under the common law and the Model Penal Code—specifically, the narrower culpability requirements of purpose, knowledge, recklessness, or negligence (Model Penal Code and Commentaries §§ 2.02(1)–(2), 1985). According to the Model Penal Code Commentaries, for example, “the demand that an act or omission be voluntary can be viewed as a preliminary requirement of culpability” (Model Penal Code and Commentaries § 2.01, 1985, p. 216).

Influences on the Voluntary Act Requirement's All-or-Nothing Approach

The Model Penal Codes' voluntary act requirement prompts particular difficulties with the troublesome dualities of “voluntary” versus “involuntary” and “conscious” versus “unconscious.” The provision's all-or-nothing approach contrasts with other criminal law doctrines, such as *mens rea*, which consists of hierarchical levels of culpability that reflect the variances in human thought and behavior (Model Penal Code and Commentaries §§ 2.02(1)–(2), 1985).

The serious consequences of such binary slots are highlighted in those cases where the penalty can range from total acquittal to a death sentence depending on a jury's acceptance or denial of whether, for example, a defendant was truly sleepwalking at the time a crime occurred. Conceptually, it is the difference between not acting at all or acting voluntarily with an intentional, premeditated, state of mind. For these reasons, experts who provide critical testimony in voluntary act cases feel particular pressure because their testimony is shoved into extremes. For example, Mark Mahowald, director of the Minnesota Regional Sleep Disorders Clinic at the Hennepin County Medical Center in Minneapolis, and one of the country's foremost experts on sleepwalking violence, refuses to become involved in criminal cases. He claims the adversarial nature of a trial necessitates a dichotomous determination in cases where facts and circumstances typically reflect shades of gray (Stryker, 1999).

In light of these difficulties, a key question becomes, what are the origins of this split, voluntary versus involuntary, format? As would be expected, case law and statutes stemming from as early as the mid-1800s excepted from criminal liability individuals who were not conscious (Denno, 2002). This all-or-nothing approach is consistent with models explaining the ways legal thought differs from sociological thought, most particularly, the "tendency" for legal thought to dichotomize the nature and resolution of disputes (Campbell, 1974, p. 20).

A less direct influence appears to have been the key psychological theories of human behavior of the times, particularly during the drafting of the Model Penal Code in the 1950s and 1960s. There is no evidence to suggest that the Model Code drafters were enamored with any one psychological school or theory, yet the binary nature of the voluntary act requirement seems guided in part by Freudian psychoanalytic theory. This psychoanalytic leaning was in contrast to the major (and competing) behaviorist theories (Bargh & Chartrand, 1999; Bruner, 1992; Denno, 2002).

Early behaviorists believed that all mental processes such as the conscious and unconscious were far too subjective to be studied scientifically. In contrast, psychiatrists and a substantial part of the psychiatric community (as well as the public), were involved with Freud's psychoanalytic concepts (Hale, 1971). The interpretations of these concepts emphasized the dual aspect of conscious and unconscious influences (Erdelyi, 1985), as did Freud's predecessors (Lewin, 1966; Whyte, 1960). Psychoanalytic ideas also appeared to have impacted on early legal theories and explanations about crime (Denno, 1998), and they continue to be examined today in connection with legal doctrine (Moore, 1997, 1980).

Further evidence that the Model Penal Code was significantly swayed by Freudian theory comes from the writings and positions of some of those who were advisory committee members for the Model Penal Code when the Code was created. Four advisory committee members stand out in particular because of their fervent embrace of Freud's beliefs. Lionel Trilling, one of the most prominent literary critics of the century and an author of numerous works on Freud (Lask, 1975; *Trilling, Lionel*, 2002), asserted, for example, that "Freud's influence . . . [was] so pervasive that its extent is scarcely to be determined" (Trilling, 1940, p. 156). Winfred Overholser, Superintendent at St. Elizabeth's Hospital and one of the country's leading medical professionals in pioneering humane treatment for the mentally ill (Candee, 1954; *New York Times*, 1964), claimed that Freud was "fully

as great," if not greater, "an innovator than Copernicus or Darwin" (Overholser, 1951, p. 249). Overholser also emphasized that the unconscious is "so hidden and disguised" that to downplay its influence "may give rise to serious injustices and misunderstandings" (Overholser, 1953, p. 23). Manfred Guttmacher, who was most responsible for spearheading interest in forensic psychiatry in the early 1950s (*New York Times*, 1966), described Freud as "the greatest figure in modern psychiatry" (Guttmacher & Weihofen, 1952, p. 20). Sheldon Glueck, a Harvard University Law School professor and author of numerous significant studies of criminal behavior and correctional treatment (*New Encyclopaedia Britannica*, 1994; *New York Times*, 1980), claimed that the psychoanalytic presence was not sufficiently strong in the law (Glueck, 1936). In particular, Glueck thought the law ignored, "[w]hat role unconscious motivation may have played in formulating or biasing the 'criminal intent'" (Glueck, 1936, p. 98), and he urged psychoanalytic treatment for "psychoneurotic offenders" (Glueck, 1936, pp. 243–244).

Psychoanalytic writings were also cited throughout the Model Penal Code's Commentaries on the voluntary act requirement (Denno, 2002). For example, Robert White's (1948) renowned textbook, *The abnormal personality*, was referenced in the Commentaries' discussion of the word "voluntary" as it is used in Model Penal Code section 2.01 (Model Penal Code and Commentaries § 2.01, 1985). According to White, "the main developments in psychopathology during the first thirty or thirty-five years of the [20th] century represent a combination of criticism and expansion of Freud's basic discoveries" (White, 1948, pp. 43–44). White particularly emphasized Freud's contributions concerning the significance of unconscious thoughts (White, 1948). Other references in the Model Penal Code Commentaries mirror this view, thereby accentuating their reliance on Freud's theories and their offshoots (Denno, 2002).

The Model Penal Code in no way captures the complexity of the psychoanalytic theories of Freud or his predecessors. However, the Code does present the commonly held view of a theoretical dichotomy between conscious and unconscious thought processes. This perspective was also adopted by other legal scholars, doctrines, and statutes that affected the Model Penal Code's development—particularly cases from Australia, Canada, England, Scotland, Ireland, and New Zealand (Denno, 2002).

Of course, the "conscious" versus "unconscious" duality has a procedural appeal irrespective of whatever psychological theory may be behind it, because no country accepted Freud with more zeal than the United States (Hale, 1995). Presumably, a binary statute can protect courts from the cumbersome need of having to distinguish among a range of mental states of consciousness. Regardless, there is no viable psychological support for this framework. While Freudian psychoanalytic theory is still influential, it has weakened over time (Brooks & Woloch, 2000). New and groundbreaking research supports the existence of degrees of conscious and unconscious thought processes, without the psychoanalytic and psychodynamic theories accompanying them (Taylor, 1999). Rather confusingly, the terms "conscious" and "unconscious" are still used in this new science, but the ideas behind these terms have changed fundamentally.

In sum, the Model Penal Code's voluntary act provision was amazingly forward thinking at the time it was introduced. However, it no longer reflects the Model Penal Code's goal of promoting modern interdisciplinary science. There also appears to be

no sound scientific foundation for a voluntary act dichotomy because consciousness and unconsciousness are a matter of degree. While researchers in this area debate many aspects of consciousness and what the term means, a solid consensus shuns the kind of binary concept embedded in the criminal law (Denno, 2002).

HOW SCIENTISTS DEFINE AND RESEARCH CONSCIOUSNESS

Attempts to Define Consciousness

This section examines a range of different definitions of consciousness to provide a framework for discussing how theories and research on consciousness can be applied to criminal law doctrine. In general, researchers who choose to define consciousness describe the concept in terms of a person's subjective self-awareness—the sum of that person's thoughts and feelings, circumstances and sensations. An important component of consciousness is that it arises from, and interlinks with, two other levels of mental processes: unconscious activities (those brain states that affect an individual's actions even though that individual is not aware of them at the time) and nonconscious activities (those brain states that never directly enter an individual's awareness because they constitute the most primitive forms of thought processing, such as the mechanisms of digestion) (Taylor, 1999). Consciousness is not comprised of one entity but rather a number of interactive parts (e.g., the sense of self, the experience of emotions) (Carter, 2002; Dennett, 1987, 1991; Humphrey, 1986, 2002; Jaynes, 1990; Taylor, 1999). Therefore, this article defines the term "consciousness" as the sum of a person's thoughts and feelings and sensations, as well as the everyday circumstances and culture in which those thoughts and feelings and sensations are formed (Denno, 2002).

With some exceptions (Cowey, 1991), scientific interest in the topic is relatively recent. From about 1920 to 1960, behaviorism held the view that conscious and unconscious processes were simply not significant subjects to study; behavior could be more easily and accurately explained in terms of reflexes and conditioned responses (Jaynes, 1990). At the same time, Freudian psychoanalytic theory also was highly influential, particularly in medical schools, although it was criticized for lacking empirical validation (Brooks & Woloch, 2000). The 1970s brought a growing disenchantment with both behaviorism and Freudian psychoanalytic theory, heralding an era of cognitive science that acknowledged the reality and significance of non-Freudian conscious and unconscious processes (Taylor, 1999).

These modern, non-Freudian concepts of conscious and unconscious processes are now established in science, drawing from a wealth of empirical research on how people perceive, remember, feel, and process information. Of course, as would be expected, there is debate and disagreement about this research, but one idea stands out: The boundaries between our conscious and our unconscious are permeable, dynamic, and interactive, and there is no valid scientific support for a sharp dichotomy.

The new consciousness research suggests that much of our behavior takes place in a gray-colored world of semi-conscious impulses, automatisms, and reflexes. It seems that our brains are designed to function as much as possible at this

unconscious level, allowing our most heightened levels of consciousness to handle tasks that are either particularly difficult or new (Bargh & Chartrand, 1999; Carter, 2002; McCrone, 1999). These issues are crucial for the criminal law because the Model Penal Code's voluntary act requirement is based on a distinction between conscious and unconscious processes. The fact that these processes reflect an older science suggests that we are now faced with the challenging task of redefining these mental states for the criminal law. The new scientific work on consciousness can help with this task.

Examples of Research on Consciousness

Before describing some of the research on consciousness, it bears emphasizing that the science of consciousness is about everyone. Conscious and unconscious processes are something that we all possess, no matter who we are or how law abiding we are. This section stresses this obvious fact because one way that neuroscience investigates how the brain works is to study people who have an injury or disease that has damaged a specific part of the brain. Such damage can reveal otherwise hidden mechanisms that our brains use to register information unconsciously (Greenfield, 2000). These mechanisms are far more difficult to detect in a non-damaged conscious mind devoid of such gateways to the unconscious; however, scientists also have done much to find these passages in individuals who do not have brain damage. That said, what follows are a few examples of what these studies have revealed in both damaged and undamaged people (all examples are referenced and discussed in more detail in Denno, 2002).

- In one case, a woman had brain damage from carbon monoxide poisoning and was unable to recognize objects, such as a pen or a spoon. She could grasp and use these objects without difficulty, although she had no idea how she did it.
- A stroke patient who is unquestionably blind could, nonetheless, sense items unconsciously such as a bar of light when it was flashed near his blind eye. He could even say whether the bar was horizontal or vertical, even though he had no idea how he knew this. Such individuals demonstrate a phenomenon called blindsight, a rare form of brain damage in which blind stroke patients can still perceive items at an unconscious level that they are not able to "see" consciously.
- Research has found that patients with certain types of brain damage cannot consciously recognize faces of people they know and love, such as their spouses and children. Yet, when they are shown pictures of these people, their heart rate increases and they demonstrate other physiological signs, suggesting that recognition is taking place on the unconscious level.
- Studies of non-brain-damaged subjects show that, when asked, people substantially overestimate the steepness of a hill while standing at the bottom of it. What is more, in their verbal estimations, people judge hills to be even steeper if they are wearing a backpack or they are physically unfit. However, when such people are asked to indicate with their hand how steep the hill is, all of these people, no matter what their physical condition, accurately tilt their hand to match the steepness of the hill, even without looking at their hand. Therefore even the less fit among us would tilt our hand as accurately as any Olympic athlete.

- Some of the most powerful research in this area suggests that the unconscious may be in charge of how human beings make decisions about willed movements, such as choosing when to flex a wrist or bend a finger or even to fire a gun (Wegner, 2002). More specifically, the research of Benjamin Libet and his colleagues (Libet, Greenman, & Sutherland, 1999) has found that subjects' brain impulses associated with their movements began about 300 milliseconds—or about a third of a second—before the subjects reported any conscious awareness of their intention to make the movement. In other words, the motor-planning areas in their brains began to stir a third of a second prior to when the subjects became aware of the desire to act. According to Libet and others (1999), a subject's decision to move a finger or a wrist must have originated unconsciously and only appeared to that person as a conscious wish about a third of a second later. However, Libet's results also showed that the conscious mind was not totally powerless. It could still veto the unconscious mind's proposed movement during a window of about 200 milliseconds that existed between the time the individual became consciously aware of an intention to act and the actual act.

This quick overview of examples of consciousness research should not suggest that everyone agrees with it—in either an empirical or a philosophical sense, particularly the substantially cited work of Libet et al. (1999). For example, one of the strongest initial criticisms of Libet's results was that they suggested some “binary” state, where conscious awareness was suddenly “clicked on” after, say, a third of a second. The stronger and now accepted argument is that consciousness evolves gradually, starting from the unconscious and moving to pre-conscious states on the way to becoming a settled state of consciousness. In other words, what seems like two modes of processing—conscious and unconscious in Libet's experiments—is really a whole brain reaction (McCrone, 1999).

The Application of Consciousness Research to Criminal Cases

The application of consciousness research to criminal cases is exemplified by Antonio Damasio's involvement in the Herbert Weinstein second degree murder case. Damasio is chair of the Department of Neurology at the University of Iowa and a renowned neuroscientist at the forefront of consciousness research, particularly consciousness disorders among behaviorally aggressive individuals (Damasio, 1999; Damasio, Tranel, & Damasio, 1990). Relying on Damasio's expert testimony, the attorneys for Weinstein, a 64-year-old advertising executive, claimed that a brain cyst impaired Weinstein's ability to think rationally and control his emotions when he killed his wife (*People v. Weinstein*, 1992; Restak, 1996). Weinstein's attorneys emphasized Damasio's years of research on emotions (Damasio et al., 1990; Damasio, 1999) to bolster their claim that Weinstein was insane at the time the murder was committed (Restak, 1996). Presumably, Weinstein's organic brain defects reduced his ability to make appropriate judgments when confronted with a stressful situation, such as arguing with this wife (Restak, 1996).

For various reasons, Weinstein's insanity defense yielded a successful plea to manslaughter (*People v. Weinstein*, 1992). Weinstein's stronger defense, however, may well have been the claim that he really did not act at all—that his overwhelming rage indicated a dissociative state of automatism (Morse, 1996; Restak, 1996). For

example, “blind rage” is a state of mind in which emotion takes over consciousness, presumably to such an extent that individuals may be capable of murder even though they may not consciously experience their emotional memory of the act (Taylor, 1999). If this proposition had been accepted, Weinstein could have been acquitted under an involuntary act defense. However, this all-or-nothing approach and the likelihood of acquittal could be controversial for someone like Weinstein, whom the public may fear or resent. Such a forced binary view of a defendant’s behavior has also created some of the conceptual difficulties that the criminal law has faced throughout the decades.

The Confusion between the Criminal Law’s Involuntary Act and Insanity Defenses

Historically, the drafters of the Model Penal Code recognized the potential conflicts between the insanity and involuntary act defenses on a range of different levels. For example, according to the drafters, an individual’s state of “unconsciousness” is clearly involuntary when, “it implies collapse or coma, as perhaps it does in the ordinary usage of the term” (Model Penal Code and Commentaries § 2.01, 1985, p. 219). However, the drafters believed it to be a “difficult issue” to assess when certain acts should be “assimilated to coma” for the “legal purpose” of finding involuntariness when cases concern more ambiguous “states of physical activity” (Model Penal Code and Commentaries § 2.01, 1985, p. 219). These states exist when, “self awareness is grossly impaired or even absent, as in epileptic fugue, amnesia, extreme confusion and equivalent conditions” (Model Penal Code and Commentaries § 2.01, 1985, p. 219).

The Commentaries note that some case law supports associating these more amorphous states of awareness with coma and therefore involuntariness. However, another set of case law offers an alternative analysis. It treats such nondistinct states of awareness as indicative of the kind of mental disease and defect necessary to exclude responsibility under an insanity defense (Model Penal Code and Commentaries § 2.01, 1985). The benefit of an insanity defense is that, “it may facilitate commitment when the individual is dangerous to the community because the condition is recurrent” (Model Penal Code and Commentaries § 2.01, 1985, pp. 219–220). However, the Commentaries emphasize the punitive aspects of the choice of insanity: “[I]t bears harshly on the individual whose condition is nonrecurrent, as in the case where an extraordinary reaction follows the administration of a therapeutic drug” (Model Penal Code and Commentaries § 2.01, 1985, p. 220). In addition, these gray-area cases may not mesh well within the purview of the insanity provision: “[T]here may be some difficulty in regarding some of these conditions as a ‘mental disease or defect’ within the meaning of [the Model Penal Code insanity defense provision] or other tests, although cognition is sufficiently impaired to satisfy that aspect of the test” (Model Penal Code and Commentaries § 2.01, 1985, p. 220).

Unwittingly, the Model Penal Code encourages this kind of confusion between doctrines. While the voluntariness provision was designed to be vague to allow for maneuvering, the Commentaries acknowledge that this flexibility naturally conflicts with other provisions in addition to insanity—such as those cases involving

self-induced intoxication or narcosis (Model Penal Code and Commentaries § 2.01, 1985). Heavily intoxicated individuals can commit acts of violence even though they are unconscious at the time (Dressler, 2001). Regardless, the Model Penal Code has put severe constraints on the ability of intoxicated individuals to receive mitigated liability (Model Penal Code and Commentaries § 2.08, 1985). Most particularly, the drafters' concerns about dangerousness and recurrence reinforce this substantive overlap among provisions. Even individuals who are clearly unconscious may not be considered as acting involuntarily if there is evidence that they are a threat to the community. Wrongly, those persons may be rendered insane or treated as acting intentionally if the criminal justice system is sufficiently worried about their future behavior.

The Model Penal Code drafters were right to be concerned over such unclear doctrinal distinctions. There is a substantial post-Model Penal Code case law demonstrating how the voluntary act requirement, interpreted by courts primarily through the defenses of automatism and unconsciousness, conflicts substantively with other key criminal law defenses, primarily insanity (Denno, 2002). The significance of this conceptual disorder highlights the serious reality that individuals who plead insanity can be institutionalized for long periods of time. In *McClain v. State* (1997), for example, the court emphasized that automatism should not be regarded by courts as a species of insanity because merging the two defenses, "could result in confinement, at least temporarily, not of the insane but of the sane," with the resulting loss in liberty grossly unfair (*McClain v. State*, 1997, p. 109). Individuals who are unsuccessful at either approach can receive long term incarceration or even the death penalty in the United States (Denno, 2002).

These variations are particularly problematic because courts may adjudicate like individuals differently based upon the courts' (often muddled) understanding of these defenses and the science that underlies them. Science also shows us that there is an enormous diversity in the ways that people can be unconscious—epileptic seizures, somnambulism, concussion, physical trauma, hypnotism, and emotional trauma, just to name a few (Denno, 2002). However, the majority of authorities who do draw a distinction between automatism and insanity emphasize that automatism/unconsciousness at the time of the act does not need to be the result of a mental disease or defect (which is one of the requirements for insanity) (*State v. Fulcher*, 1981).

In sum, modern scientific research on consciousness confirms that there appears to be no acceptable scientific support for the Model Penal Code's dichotomies between voluntary and involuntary acts and conscious and unconscious behavior. The issue of consciousness is far more complex and subjective than the criminal law treats it as. An awareness of such complexity is not to suggest that each defendant be examined on a standardless case-by-case procedure based on a continuous flux of mental states. This article does not advocate such an approach. The question is, where should we draw the lines the criminal law needs for proper guidance?

PROPOSED SOLUTIONS TO THE INVOLUNTARY ACT DILEMMA

There are a variety of possible solutions to this predicament concerning voluntariness. Suggestions range from the total abolition of an explicit statement of the

voluntary act requirement to an act requirement based on degrees of consciousness rather than a duality. This article proposes a compromise that lies between these two extremes but retains the requirement's bedrock status in the criminal law.

A Three-Tiered Approach

There is a way forward that involves several basic changes. The first change is to adopt a simple limiting definition of "voluntary conduct" that meshes well with the criminal law's traditional depiction of "voluntariness," but without the complicated and dated psychoanalytic baggage. This article adopts Lloyd Weinreb's suggestion: "A person does not engage in conduct voluntarily if the conduct is not subject to [that person's] control" (Weinreb, 1970). This definition is left open to accommodate new research on voluntariness, as well as to keep the main statement of criminal liability accurate, even if it is incomplete. This definition also avoids the Model Penal Code's difficult and needless distinction between the *mens rea* of unconsciousness and the *actus reus* of automatism.

However, this single sentence specifying voluntary conduct is not enough by itself. Therefore this article recommends that the voluntary act requirement constitute three parts: (i) *voluntary acts*, (ii) *involuntary acts*, and (iii) *semi-voluntary acts*. This three-tiered approach to voluntariness would rely on consciousness research as well as a layperson's assessment of how that research should be interpreted in the context of society's norms and values. In particular, the third category of semi-voluntary acts—which is new—would include individuals who were either previously shoehorned into the first two categories or wrongly given the insanity defense. For the most part, this would incorporate individuals who may be dangerous again and those who have relatively greater control over their actions.

How the Three-Tiered Approach would Operate in *Regina v. Parks*

How would this approach work with some real cases? One way to illustrate this three-tiered proposal is to return to the defendant in *Regina v. Parks* (1990, 1992), the sleepwalking case discussed in this article's introduction. Parks was acquitted, presumably because his circumstances suggested a number of convincing mitigating factors. For example, his problems with sleepwalking and his family history of sleepwalking were accepted as "real." Even the prosecution never challenged the conclusion that Parks was sleepwalking when he killed and assaulted. At the same time, however, the case scenario is troubling.

In order to better differentiate semi-voluntary acts from the two other poles of behavior (voluntary and involuntary) under this article's three-part approach, the analysis of *Parks* relies for guidance on some of the ten criteria "(a-j)" followed in "interest of justice" dismissal statutes, which exist throughout the United States. The interest of justice statutes are useful for this article's purposes because they reflect the kinds of principle-based criteria that courts use to distinguish among the various options available for disposing of cases (Buchwalter, 2001). This article relies on New York's relatively more detailed interest of justice statute (McKinney,

2001) because it has served as a nationwide model (Wirenius, 1994). The pertinent provision of New York's statute operates as follows:

1. An indictment or any count thereof may be dismissed in furtherance of justice . . . [if] such dismissal is required as a matter of judicial discretion by the existence of some compelling factor, consideration or circumstance clearly demonstrating that conviction or prosecution of the defendant upon such indictment or count would constitute or result in injustice. In determining whether such compelling factor, consideration, or circumstance exists, the court must, to the extent applicable, examine and consider, individually and collectively, the following:
 - (a) the seriousness and circumstances of the offense;
 - (b) the extent of harm caused by the offense;
 - (c) the evidence of guilt, whether admissible or inadmissible at trial;
 - (d) the history, character and condition of the defendant;
 - (e) any exceptionally serious misconduct of law enforcement personnel in the investigation, arrest and prosecution of the defendant;
 - (f) the purpose and effect of imposing upon the defendant a sentence authorized for the offense;
 - (g) the impact of a dismissal upon the confidence of the public in the criminal justice system;
 - (h) the impact of a dismissal on the safety or welfare of the community;
 - (i) where the court deems it appropriate, the attitude of the complainant or victim with respect to the motion;
 - (j) any other relevant fact indicating that a judgment of conviction would serve no useful purpose (McKinney, 2001).

Using these ten (a–j) criteria for guidance under the New York statute, an examination of the facts of the *Parks* case points to some clear concerns: (a) Parks's crimes were extremely serious (murder and attempted murder), as were the circumstances surrounding them (the brutality of the stabbing and beating); accordingly, (b) the extent of harm caused was very grave. While (d) Parks's character seemed strongly in his favor because of a lack of motive (he apparently got along well with his in-laws), his sleepwalking condition was problematic; Parks had a family history of sleepwalking and documented sleep disorders of his own. A year before the crimes, Parks also began to acquire a mass of gambling debts. To hide the heavy losses, he took funds from his family savings and started to embezzle at work. Shortly before his violent acts, Parks lost his job because he had stolen \$30,000 from his employer—a crime for which he was prosecuted. Parks said he needed the money because of expenses incurred while betting on horses. Parks was forced to put his house up for sale to cover his debts, but his gambling continued (Broughton et al., 1994; *Regina v. Parks*, 1992).

Of course, these incidences caused a great deal of stress in Parks's life at the time and exacerbated his sleep disturbances and tensions within his family. A week before his violent acts, Parks was repeatedly confronted by his wife for his gambling. He and his wife then made plans to discuss Parks's gambling problems and financial difficulties with both of their families over the weekend. It was the evening before these expected visits were to be made to their families that Parks committed his violence (Broughton et al., 1994; *Regina v. Parks*, 1992).

Expert testimony and aggregate statistics on sleepwalkers would suggest that Parks's dismissal would not be a threat to the safety or welfare of the community (h); at the same time, however, it seems that the expert testimony in the *Parks* case was

based on the presumption that Parks would be taking medication and following a less stressful life. The public may not feel confident in the criminal justice system (g) knowing that Parks was free and unsupervised. According to one of the concurring and dissenting justices in *Parks*, the trial court should have made an order to keep the peace by imposing on Parks certain conditions (e.g., specific treatment) consistent with the trial court's preventive powers (*Regina v. Parks*, 1992). At the same time, if Parks was truly sleepwalking and unconscious, there is (c) no evidence of guilt because he had no *mens rea* and (f) there would be no purpose and effect of imposing a sentence on him. Presumably, deterrence would be either limited or ineffective, and retribution unjust under the circumstances.

It is this worry over Parks's potential for recurring violence and his medical history that makes the *Parks* case fall into an ambiguous gray area. A balancing test of all the factors involved in the case suggests that other courts would not acquit someone like Parks. Parks's history of sleep and financial disorders is a double-edged sword; the evidence appears mitigating for this particular offense but aggravating considering his potential for future dangerousness. Indeed, the prosecution in the *Parks* case argued on appeal that Parks's sleepwalking should be classified as insane automatism because Parks could be violent again and because sleepwalking was a "disease of the mind" that warranted institutionalization (*Regina v. Parks*, 1992).

This article's recommendation of the three-part requirement can prevent such gray-area behaviors from being classified as insane or voluntary because of a court's concern that they may recur, particularly because the odds are so much against it. Classifying Parks's behavior as semi-voluntary would preclude an unqualified acquittal for him, but, at the same time, avoid the injustice of putting someone like Parks in an institution for the criminally insane. It also would discourage the temptation to classify his behavior as voluntary.

While sleepwalking is the classic involuntary act defense, there are many other kinds of conditions linked to involuntariness that illustrate the complexity of these determinations—ranging from concussion to hypoglycemia to blackouts (Denno, 2002). For example, within the past decade, researchers have documented a surge in the population's use of psychotropic drugs to remedy all sorts of ills—including stress. Presumably, this development could bring with it an increase in the kinds of cases where individuals rely on a defense of unconsciousness or automatism when the effects of these drugs are unpredictable or they mix badly with the way individuals use other drugs. These and other kinds of issues are described in depth elsewhere, along with further examples of this article's three-tiered approach (Denno, 2002).

The contributions of consciousness research can enlighten many other aspects of the criminal law, most particularly, the criminal justice system's interpretation of *mens rea* standards—a topic that the present author is currently studying. For example, what do the terms "intentional," "knowing," "reckless," "negligence," "awareness," and "conscious object" all really mean when they appear in criminal codes and the legislature tries to define them? These questions show that *mens rea* is simply one other aspect of the law's attempt to classify the workings of the human mind.

This article's recommendations present a workable solution to the problems created by the current legal principles governing the voluntary act requirement. The recommendations do not address how the three categories should be handled procedurally because, even though that topic is very important, it is more than

enough for yet another article. A proposal of a new category of semi-voluntary acts requires significant rethinking of the voluntary act requirement, which, because of its solid status, should have a domino-effect impact on the way that we view other key criminal law doctrines, such as *mens rea*. If the criminal law can confront and modify the problem of “either/or” embedded in the voluntary act requirement, it can perhaps contribute to a more just view of the human mind.

CONCLUSION

There are all sorts of line-drawing dilemmas throughout the criminal law. However, this article indicates that the problems with the voluntary act requirement are particularly acute. The requirement is the initial filter, at least conceptually, for all individuals potentially eligible for the criminal justice system. It therefore assesses actors with the widest possible range of mental states, behaviors, and defenses because the system has yet to determine whether they should proceed or be acquitted entirely. A forced “voluntary/involuntary” dichotomy amidst such heterogeneity can produce particularly artificial choices with potentially extreme variations in sanctions for similar types of behavior depending on how they are categorized (e.g., involuntary, insane, or voluntary and dangerous).

Next, other criminal law doctrines (such as *mens rea*) have a relatively broader line-drawing selection (for example, the four mental states under the Model Penal Code) within a more homogenous group of individuals (persons who have already been determined to have committed only voluntary acts). Therefore, the line-drawing choices and their consequences are far less extreme than those faced by voluntariness determinations.

Voluntariness determinations also rely relatively more on factual medical/psychological information than do other dichotomous conceptions (such as reasonableness versus unreasonableness), which depend on jurors’ views of appropriate social and moral norms of behavior. The criminal justice system presumes that jurors know what kinds of behaviors are unreasonable based on their own kinds of life experiences. Insanity assessments also have a strong normative component, even though expert testimony and legal standards provide guidance. Yet, in contrast, involuntariness doctrines or jury instructions commonly offer specific examples of what “involuntary” means (for example, unconsciousness due to sleepwalking) because jurors typically are not going to know otherwise (insanity provisions do not contain such specific examples). In this sense, the science of involuntariness (and unconsciousness) is especially critical.

Proof is a final difficulty in criminal cases involving determinations of consciousness. How do we know that a defendant was unconscious and acting involuntarily when the crime was committed? To ask this question only of consciousness assessments, however, is to single out the voluntary act requirement from every other criminal law doctrine. For example, most decisions about *mens rea* are a reconstruction of what happened when the defendant’s behavior occurred; as yet, we have no instant scientific measure of intentionality that we can use at the scene of the crime. This issue of uncertainty in the context of consciousness assessments also emphasizes the fact that medical testimony cannot provide clear answers in many of these cases. As sleep expert Mark Mahowald points out, sleep research can prove

that the defendant is a sleepwalker just like nine percent of the rest of the adult population. However, it cannot prove that the defendant was sleepwalking at the time of the murder (Stryker, 1999).

Of course, consciousness research is not definitive. The criminal justice system should recognize such uncertainty within the context of a wide range of other non-definitive evidence it must confront. At the same time, consciousness research can be far more accurate than haphazard guesswork about what we think we know about human behavior. The research can enlighten our normatively held beliefs and values—perhaps even change what we hold to be dear in terms of responsibility.

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