Matthew Sepi, a 20-year-old combat veteran who had been deployed in Iraq, headed out to a local convenience store in Las Vegas in 2005 concealing an AK-47 under his clothing in case it was necessary to protect himself in the neighborhood that was known for violence and crime. At one point a man and a woman approached him in a dark alley, ordering Sepi to leave the area. Feeling he was being ambushed by enemy troops, Sepi instinctively reacted by “engag[ing] his targets” and shooting at them. Once the individuals appeared immobilized from the gunshots, Sepi followed training protocol in “breaking contact” with the enemies and retreating. Both individuals were shot and one of them died of gunshot wounds. Sepi was charged with murder and attempted murder.

1. INTRODUCTION

Criminal culpability rests on two basic elements: the defendant’s state of mind, or mens rea, and a voluntary act, or actus reus. While much of the litigation in criminal cases involves the applicable mens rea,2 rarely is there much focus on the existence of actus reus. This remains true despite the fundamental principle of criminal law that “the general doctrine of the voluntary act”3 means that “liability requires that the

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activity in question be voluntary.\textsuperscript{4} A review of case law, provided herein, indicates that the voluntary act doctrine appears a weak doctrine, ignored in fact in many cases. In order to adhere to longstanding doctrine, a general need exists to reengage the actus reus requirement as a necessary element of criminal responsibility. This paper offers an exceptional opportunity to reconsider the actus reus requirement: by utilizing the modern neuropsychiatric doctrine of Post-Traumatic Stress Disorder ("PTSD") and the relatively unique nature of modern warfare, it provides a contemporary focus to the actus reus issue. A 2008 New York Times article noted it had uncovered 121 cases, including that of Michael Sepi mentioned above,\textsuperscript{5} in which Iraq and Afghanistan veterans were allegedly involved in a homicide after returning to the United States.\textsuperscript{6} In many of the cases it appeared that combat trauma and other deployment stresses were background factors that “appear[ed] to set the stage for” these homicides.\textsuperscript{7} The relationship between PTSD and criminal offending is considered to be so significant that the president of the National Veterans Federation, who has authored a book on PTSD, warns that the criminal justice system is facing an epidemic of veterans with PTSD being charged with crimes.\textsuperscript{8}

PTSD is a disorder in which a person who experiences a traumatic event develops symptoms of re-experiencing (flashbacks), hyperarousal (extreme responsivity), and hypervigilance (acute awareness), which are connected to deficits in neuropsychological,

\textsuperscript{4} WAYNE R. LAFAVE & AUSTIN W. SCOTT, CRIMINAL LAW § 3.2(c), at 208 (2d ed. 1986).
\textsuperscript{5} There was some evidence that might have supported a self-defense claim since the victims were known gangmembers and one of whom was armed at the time. However, there were no witnesses other than Sepi and the surviving wounded party that could substantiate the facts or identify who was the initial aggressor. As the survivor of the shooting had a criminal background and would be subject to impeachment if she testified and the victims’ families did not push for prosecution, the state agreed to a proposal to drop the murder charges if Sepi successfully completed PTSD rehabilitation programming offered by a Veteran’s Administration facility. Sontag & Alvarez, supra note 1, at A1.
\textsuperscript{6} Sontag & Alvarez, supra note 1, at A1.
\textsuperscript{7} Id. (compiling the data from news reports, official records, and interviews with defendants, lawyers, families, and officials).
\textsuperscript{8} Kim Murphy, Did War Make Him Do It?, L.A. TIMES, Nov. 28, 2009, at A1.
autonomic, and brain processing functions. These symptoms and the correlative functional deficits can manifest in automatic and hyperresponsive reactions to threatening stimuli. Modern military training reinforces reflexive responses to threat and normalizes killing. The uniquely stressful circumstances of the wars in Iraq (Operation Iraqi Freedom) and Afghanistan (Operation Enduring Freedom) regarding enemies using terroristic tactics of improvised explosive devices, suicide bombers, and civilian murders have left many combat veterans suffering from PTSD. After returning stateside, many of them have been involved in violent encounters which appear to be the result of PTSD-based cognitive impairments in which they automatically respond to perceived threats or suffer dissociative flashbacks to being in combat. Indeed, the United States Department of Veterans Affairs acknowledges a potential relationship between PTSD and impulsive reactions to cognitively-based feelings of being threatened.

This article outlines a theory in which a PTSD-afflicted veteran’s automatistic behavior or dissociative state can negate the *actus reus* element such that the veteran is not engaged in a voluntary act and therefore not criminally culpable. The argument takes the following path: Section II explains the theoretical principles that historically underlie the *actus reus* element in criminal law and how this element has generally been ignored or misconstrued in case law. Section III discusses the reasons PTSD is the signature injury of soldiers serving in the Iraq and Afghanistan wars, and synthesizes the scientific basis for understanding how PTSD can invoke automatistic responses through impairments of physiological and neurological functioning brought on by physical and mental adaptations to traumatic stress. A plausible theory of how PTSD can explain a veteran’s automatism that negates the voluntary act element is then provided in Section IV. Free will enthusiasts likely will counter that PTSD-related behaviors ought to best be considered instead under the rubric of *mens rea*, insanity, or possibly diminished capacity, but this redirection seems contrary to upholding the common law requirement of

10 See infra Section III(B).
a voluntary act for criminal culpability.\textsuperscript{12} An exploration of the historical and philosophical foundations for the voluntary act doctrine, applicable in all cases, therefore, follows.

II. THE PRINCIPLE ELEMENT OF ACTUS REUS IN CRIMINAL LAW

Eminent criminal law scholars often note that the common law requirement of \textit{actus reus}, also referred to as a voluntary act, is a foundation of criminal culpability.\textsuperscript{13} Together with \textit{mens rea}, the \textit{actus reus} was developed in English common law from the principle enunciated by Edward Coke referring to \textit{actus non facit reum nisi mens sit rea}, which means “an act does not make a person guilty unless their mind is also guilty.”\textsuperscript{14} This conveys that criminal culpability requires blameworthiness of both mind and behavior. In a simplistic conceptualization, \textit{mens rea} is conceived as the internal component of criminal liability while the \textit{actus reus} is the external component.\textsuperscript{15}

Criminal law theorists conceptualize an involuntary act as one that is without blame, and thus not deserving societal condemnation or punishment.\textsuperscript{16} Oliver Wendell Holmes stated that it would be unfair to “make a [person] answerable for harm, unless he might have chosen otherwise.”\textsuperscript{17} Drafters of the Model Penal Code concurred that

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\textsuperscript{12} In the end, the author declines to propose any special treatment for PTSD or for combat soldiers in the criminal justice system. Instead, the potentially empathetic qualities of this modern phenomenon offer a reason simply to revisit the issue that the voluntary act element is fundamental for criminal culpability.

\textsuperscript{13} Paul H. Robinson, \textit{A Functional Analysis of Criminal Law}, 88 NW. U. L. REV. 857, 862 (1994) (referring to the voluntary act as being a minimum condition for condemning the actor); \textit{see also infra} sources in notes 14, 15, 25, and 43.

\textsuperscript{14} EDWARD COKE, \textit{THE THIRD PART OF THE INSTITUTES OF THE LAW OF ENGLAND} 107 (1644).

\textsuperscript{15} George P. Fletcher, \textit{Criminal Theory in the Twentieth Century}, 2 THEORETICAL INQUIRY L. 265, 269 (2001). Still, \textit{actus reus} is conceptualized herein as also containing some minimal mental element that is not synonymous with \textit{mens rea}. \textit{See infra} notes 31-35 and accompanying text.

\textsuperscript{16} Model Penal Code 2.01 cmt. at 214-5; \textit{see also} Adam Candeub, \textit{Consciousness & Culpability}, 54 ALA. L. REV. 113, 114 (2002) (contending that only a person who “can be expected to consciously respond to reason can be morally and legally culpable”); Anders Kaye, \textit{Resurrecting the Causal Theory of the Excuses}, 83 NEB. L. REV. 1116, 1117 (2005) (explaining the voluntary act doctrine using causal theory which presumes that conduct caused by forces beyond the actor’s control is not blameworthy).

\textsuperscript{17} OLIVER WENDELL HOLMES, JR., \textit{THE COMMON LAW} 54 (1881).
The sense of personal security would be undermined in a society where [involuntary] movement [] could lead to formal social condemnation of the sort that a conviction necessarily entails. People whose involuntary movements threaten harm to others may present a health or safety problem, calling for therapy or even custodial commitment; they do not present a problem of correction.18

The actus reus element as a necessary condition for criminal culpability also fulfills the philosophical tenets of both utilitarians and retributivists. Per H.L.A. Hart, these theorists collectively view punishment based on crime reduction.19 For utilitarian theorists like Jeremy Bentham,20 there is little deterrence value to punishing one who is not acting voluntarily.21 The retributivist ideology espoused by Immanuel Kant22 would view punishment as not deserved for an individual who has not freely chosen to violate societal rules.23 Traditional common law treated the voluntary act element as separate from the mens rea element, though there must be a concurrence between the two.

A. Various Conceptualizations of Actus Reus

Despite the basic philosophical tenet of actus reus, no general agreement exists on exactly what is meant by a voluntary act.24 Joshua Dressler notes in his popular criminal law treatise that “there is no single accepted definition.”25 Another commentator argues that the confusion

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18 Model Penal Code 2.01 cmt. at 214-15.
19 HART, supra note 3, at 26-27.
20 JEREMY BENTHAM, AN INTRODUCTION TO THE PRINCIPLES OF MORALS AND LEGISLATION 83-84 (John Bowring ed., 1843).
23 Hermida, supra note 21.
has resulted in “a judicial exercise in inclusion and exclusion” as to what does or does not constitute a voluntary act. Such exertions by the judiciary in conceptualizing a voluntary act, as explored further below, have arisen since neither common law nor modern statutory codifications substantively or holistically define a voluntary act. A common referential point is not itself very illuminating. The Model Penal Code, while affirming that a voluntary act is a “preliminary requirement of culpability,” does not define the element of voluntary action in any affirmative manner; instead it describes what are not to be considered voluntary acts. It describes involuntary actions as including:

(a) a reflex or convulsion; (b) a bodily movement during unconsciousness or sleep; (c) conduct during hypnosis or resulting from hypnotic suggestion; (d) a bodily movement that otherwise is not a product of the effort or determination of the actor, either conscious or habitual.

A renowned scholar reflects that “[t]he law is not affirming that some conduct is the product of the free exercise of conscious volition; it is excluding, in a crude kind of way, conduct that in any view is not.” A critic thus describes the Model Penal Code’s definition of a voluntary act (or, what it is not) as “scanty” with a “looseness regarding the concept of an action.”

Still, there is strong support for the notion, implicit within the Model Penal Code’s reference to the actor’s effort or determination, that a voluntary act requires more than a mere physical exertion. An external action is not enough without some internal component, plus a causal connection between them. This helps explain why a typical criminal law example would distinguish between “X’s arm went up” and “X raised his arm.” The former does not, without more, qualify as a voluntary act as

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27 Model Penal Code § 2.01 cmt. at 216 (Official Draft and Revised Comments 1985).
31 Deborah Denno, *supra* note 30, at 275-76.
it could have simply been through an external force or reflex, yet the latter, with its implicit concurring mental element, appears to qualify.\textsuperscript{33} Without the internal element, the individual is simply the instrument by which the events occur.\textsuperscript{34} The relevance of this internal component may help explain why legal discussion in common law countries about the voluntary act requirement generally falls along three sometimes distinguishable, and other times overlapping, lines: consciousness, will, and control.\textsuperscript{35}

Comparably with the Model Penal Code, authorities often refer to the voluntary act in connection to consciousness,\textsuperscript{36} explaining that “[a]n ‘act’ committed while one is unconscious is in reality no act at all” for criminal culpability.\textsuperscript{37} Yet, many courts and commentators recognize that the involuntary act element does not require total unconsciousness; rather some sort of semi-consciousness may suffice.\textsuperscript{38} For example, one court described an involuntary act as when “the individual’s conscious mind has ceased to operate and his actions are controlled by the subconscious or subjective mind.”\textsuperscript{39} Another conceptualization is that it is “behavior performed in a state of mental unconsciousness.”\textsuperscript{40} The key is whether there is an absence of the internal component of the \textit{actus reus}, which is also often discussed in terms relating to mental will and control.\textsuperscript{41}

\textsuperscript{33} Id.

\textsuperscript{34} Jeremy Horder, \textit{Pleading Involuntary Lack of Capacity}, 52 \textit{CAMBRIDGE L.J.} 298, 313 (1993); \textit{see also} State v. Eaton, 229 P.3d 704 (Wash. 2010) (noting that one cannot be punished for what another does to him if he has no capacity to choose); P. Simester, \textit{On the So-Called Requirement for Voluntary Action}, 1 \textit{BUFF. CRIM. L. REV.} 403, 406 (1997-1998) (noting that an individual is “morally responsible for an outcome unless the occurrence of that outcome is involuntary vis-à-vis that person”).


\textsuperscript{36} State v. Mercer, 165 S.E.2d 328, 336 (N.C. 1969).


\textsuperscript{38} Fulcher v. State, 633 P.2d 142, 148 (Wyo. 1981); \textit{see also} Paul H. Robinson, 2 \textit{CRIMINAL LAW DEFENSES} § 171 (2010) (noting that a focus on consciousness would improperly limit the concept by excluding uncontrollable reflex actions).

\textsuperscript{39} People v. Sameniego, 4 P.2d 809, 812 (Cal. Ct. App. 1931).

\textsuperscript{40} \textit{BLACK’S LAW DICTIONARY} 134 (6th ed. 1990) (emphasis added).

\textsuperscript{41} Robinson, \textit{supra} note 13, at 898 (contending that the voluntary act requirement may only require substantial, but not total, impairment of one’s control over their actions).
Oliver Wendell Holmes long ago conceptualized such an external and internal connection, indicating that “[a]n act is always a voluntary muscular contraction, and nothing else,” 42 and further explaining that “[a]n act . . . imports intention. . . . A spasm is not an act. The contraction of muscles must be willed.” 43 Another leading author on actus reus, Michael Moore, indicates that the “best interpretation” of the actus reus “doctrine is to require what metaphysically is an act (on my theory, a volitionally caused bodily movement).” 44 Similarly, another criminal law scholar explains that “[o]ccurrences which take place independently of the will must be classed as ‘events’ rather than ‘acts.’” 45

Others discuss the aspect of will in terms of control, such as having the capacity 46 or ability to choose. 47 A slightly different conceptualization acknowledges that even if the individual otherwise appears to be acting volitionally, the voluntary act is negated and one is not culpable if he had no ability to control his behavior 48 or otherwise could not have avoided the action. 49 As a result, even muscle movements that must be managed by impulses from the brain (and otherwise seem to be voluntary in its common usage) may not necessarily prove a voluntary act. An older case involving sleepwalkers deemed to be acting unconsciously posited the following:

42 HOLMES, supra note 17, at 81.
43 Id. at 54; see also 1 JOHN AUSTIN, LECTURES ON JURISPRUDENCE 293 (R. Campbell ed., 1874) (“To desire the act is to will it.”); PAUL H. ROBINSON, CRIMINAL LAW DEFENSES 260 (1984) (observing that an actor is not criminally culpable if his “conduct is not a product of the actor’s effort or determination”).
47 McClain v. State, 678 N.E.2d 104, 107 (Ind. 1997); Michael Corrado, Is There an Act Requirement in the Criminal Law?, 142 U. PA. L. REV. 1529, 1560 (1994) (contending that the voluntary act component includes the person’s ability to choose to do otherwise). Nonetheless, some would presume that an act is the result of one’s choice to act. Nita A. Farahany & James E. Coleman, Genetics and Responsibility: To Know the Criminal from the Crime, 69 LAW & CONTEMP. PROBS. 115, 138 (2006) (contending that “[j]ust as legal free will imputes agency to individuals, the criminal law assumes that when an individual acts, he reveals his choice to have acted”).
48 Husak, supra note 24, at 2458; ROBINSON, supra note 43, at 897-98; see also P. Simester, On the So-Called Requirement for Voluntary Action, 1 BUFF. CRIM. L. REV. 403, 415 (1997-1998) (“Whether she was conscious or unconscious, what is essential to the denial of responsibility for a defendant’s involuntary behavior is that she was unable deliberately to control that behavior and to prevent it from occurring.”).
49 Simester, supra note 48.
Not only is the power of locomotion enjoyed, as the etymology of the term signifies, but the voluntary muscles are capable of executing motions of the most delicate kind. Thus, the somnambulist will walk securely on the edge of a precipice, saddle his horse, and ride off at a gallop; walk on stilts over a swollen torrent; practice airs on a musical instrument; in short, he may read, write, run, leap, climb, and swim, as well as, and sometimes even better than when fully awake.50

Analogous to the argument that an act committed when one is unconscious deserves no punishment is the notion that an act that occurs without will or control is really no act for which criminal culpability is appropriate.51

Still, there is a temporal aspect to the internal element of actus reus. An act is not involuntary just because afterward one cannot remember having done it.52 Correspondingly, just because one does retrospectively recall one’s action does not necessarily mean that one was not unconscious at the time of the act; even a somnambulist may afterward be aware of his prior behavior while asleep.53

B. Case Law Treatment of the Element of Actus Reus

Notwithstanding the purportedly central role that actus reus inhabits in criminal law philosophy, it remains a relatively insignificant issue in case law. Instead, for the vast majority of criminal cases, litigants and judges appear to presume the voluntary act element exists, with any dispute involving other issues, such as mens rea or the existence of formal defenses (e.g., insanity, self-defense, necessity) to culpability.54 As Professor H.L.A. Hart noted, the actus reus “doctrine has only rarely been

51 Perkins & Boyce, Criminal Law 611 (1982) (“If a person engages in conduct that would otherwise be criminal but does so without any exertion of will then there is no act.”).
53 Candeub, supra note 16, at 119.
54 State v. Simpson, 53 P.3d 165, 169 (Alaska Ct. App. 2002) (“Although the voluntariness of a defendant’s conduct is rarely disputed, it remains an implicit element of all crimes.”)
REINVIGORATING ACTUS REUS

considered by the courts” and thereby he is “not convinced that the courts actually do accept [this] general doctrine.”

Even when a voluntary act is expressly mentioned in a criminal case, courts are inconsistent on how they treat actus reus as an element. A few courts have formally recognized actus reus as a required element of any criminal offense, with the burden of proof being affirmatively placed on the prosecution. A notable explanation one court gives for this stance draws upon the U.S. Supreme Court’s holding in In re Winship that the Due Process Clause of the Fourteenth Amendment requires the prosecution to prove beyond a reasonable doubt every element of the crime charged. Based on In re Winship, the court held that every crime includes the elements of mens rea and actus reus.

However, most cases in which actus reus is mentioned as a relevant issue have managed to obscure its traditional place as an element to be proven by the prosecution. These cases exhibit a few common avoidance tactics. Some courts provide a jury instruction that a person is presumed to be conscious if they act as if they were conscious. Using a similar tactic, other courts invoke a presumption that the prosecution need not prove a voluntary act absent a factual foundation for involuntariness. Without such a foundation, generally for which the

58 Id.
60 Corrado, supra note 47, at 1554 (noting courts treat these inconsistently, sometimes as affirmative defenses, other time as involuntary, and often just by ignoring it).
defense has the burden of production,\textsuperscript{63} courts refuse to give a jury instruction requiring an affirmative finding on the existence of the voluntary act element.\textsuperscript{64} An explanation offered for this burden is that the defendant “is the only person who knows his actual state of consciousness.”\textsuperscript{65} On the other hand, there are instances in which the voluntary act requirement is entirely recharacterized. For example, some judges view it as not a fundamental element of a criminal offense, but as an affirmative defense, with the concomitant burden of proof on the defendant.\textsuperscript{66} At least one court allows the defense to offer evidence of an included or implied within the specific intent element of a first degree murder charge but does not constitute an actual statutory element of the offense.”); Davidson v. State, 849 N.E.2d 591, 594 (Ind. 2006) (ruling on policy grounds that voluntariness is not an element of murder in the context of defendant’s argument that his intoxication negated voluntary conduct).


\textsuperscript{64} Corder v. Commonwealth, 278 S.W.2d 79 (Ky. 1955); State v. Lara, 183 Ariz. 233, 234 (1995); Sellers v. State, 809 P.2d 676, 686-67 (Okl. Ct. Crim. App. 1991); see also Brown v. State, 955 S.W.2d 276, 280 (Tex. Crim. App. 1997) (ruling that a jury instruction on the issue of voluntariness is only necessary when there is evidence that makes it an issue and the defendant so requests); People v. Rogers, 141 P.3d 135, 180 (Ca. 2006) (noting that an instruction on unconsciousness is necessary either sua sponte if the defendant is relying upon it as a defense or if there is substantial evidence of it and it is not inconsistent with the defendant’s theory of the case). A few courts, though, also ruled that the burden would shift such that once the defense establishes a foundation, it was the prosecutor’s burden to show the voluntary act. State v. Hinkle, 489 S.E.2d 257, 263 (W. Va. 1996); State v. Simpson, 53 P.3d 165, 169 (Alaska Ct. App. 2002).


\textsuperscript{66} State v. Caddell, 215 S.E.2d 348, 363 (N.C. 1975); State v. Jones, 527 S.E.2d 700, 706 (N.C. Ct. App. 2000); State v. LaFreniere, 621 N.E.2d 812, 818 (Ohio 1993); see also Babbitt, supra note 62. By placing the burden on the defendant, the voluntary act requirement functionally works in those cases, then, as an excuse to escape culpability. Robinson, supra note 13, at 896. An excuse defense generally exculpates for the lack of a voluntary act, even though the offense was committed, when a disability causes an abnormal mental, physical, or emotional condition that undermines the individual’s control of his conduct. Robinson, supra note 38; Steven Yannouliadis, Excusing Fleeting Mental States: Provocation, Involuntariness and Normative Practice, 12 Psychiatry, Psychol. & L. 23, 24 (2005); contra Hermida, supra note 21, at 217 (contending that an involuntary act should not be considered a defense but an absence of actus reus).
involuntary act only if the defendant concedes he physically committed the acts. 67

In other cases, evidence of involuntary acts is conceptualized as relevant only to the element of mens rea, 68 or an insanity defense to negate responsibility based on a mental disability that prevents a rational understanding of what one is doing or of the moral quality of the act. 69

The basic flaw with these conceptions is that they effectively abolish the actus reus doctrine without engaging philosophical and historical bases for it. The common law requirements of mens rea and actus reus inherently signify they are, to large degree, independent elements. Analyzing the voluntary act principle solely through a mens rea lens obfuscates the fundamental distinction. At the same time, merging the voluntary act with an insanity defense has significant negative consequences to a defendant. Not all jurisdictions recognize any type of insanity defense, 70 while others that do often invoke strict limitations such that commonly recognized types of involuntary acts, such as epilepsy, sleepwalking, or reflex, likely would not qualify without an additional disease or defect of mind. 71 Further, the consequence of indefinite treatment in a mental health facility as a result of a successful insanity defense may be inappropriate to many involuntary act defendants who are not in need of mental health treatment.

In sum, contemporary criminal law appears to have deviated from the long-standing voluntary act doctrine. Yet the philosophical and moral

69 Tibbs v. Commonwealth, 128 S.W. 871, 874 (Ky. 1910) (disbelieving that evidence of sleepwalking “would constitute any defense other than that embraced in the plea of insanity”); Bradley v. State, 277 S.W. 147, 149 (Tex. Crim. App. 1925) (indicating evidence of sleepwalking was “a species of insanity”); United States v. Harvey, 66 M.J. 585, 588 (U.S.A.F. Ct. Crim. App. 2008) (ruling that unconsciousness was a mental condition that was relevant only to an insanity defense).
70 Dressler, supra note 25, at 363.
purposes underlying the doctrine have not been much debated, much less effectively undermined, in modern times. Consistency in criminal law and concerns of moral culpability are better served by a reinvigoration of the actus reus as a required element of every crime and for which the prosecution has the burden of proof.\footnote{Dressler, supra note 25, at 93 (stating that characterizing the voluntary act as a defense is inappropriate as it is an “element of every criminal offense”).} In likely the vast majority of cases the existence of the actus reus element will not be contested such that the prosecution can easily meet its burden. Nonetheless, the benefits of strict adherence to the fundamentals of criminal law demand reverence to the actus reus element. Assuming this perspective to be valid, an exploration of automatism follows.

C. Automatism As an Involuntary Act

Automatistic actions are generally accepted as a category of involuntary act for purposes of abrogating criminal culpability.\footnote{Michael J. Davidson, United States v. Berri: The Automatism Defense Rears its Ugly Little Head, 1993 ARMY LAW. 17, 26 (describing automatism as “a recognized, albeit ill-defined, defense”); contra United States v. Axelson, 65 M.J., 501, at *49-50 (A. Ct. Crim. App. 2007) (affirming conviction despite defendant’s challenge regarding actus reus because automatism is not a defense in military courts); Haskell v. Berguis, 695 F.Supp. 2d 576, 592 (E.D. Mich. 2010) (finding no precedence as to whether automatism was a defense under state law and declining to find a constitutional violation for failing to recognize it as negating criminal responsibility).} A difficulty common to automatism cases is that the individual appears to be acting in a deliberate way,\footnote{Barbara Hannan, Depression, Responsibility, and Criminal Defenses, 28 INT’L J. L. & POL’Y 321, 327 (2005).} even performing complex tasks.\footnote{Roy G. Beran, Automatism: Comparisons of Common Law and Civil Law Approaches – a Search for the Optimal, 10 J. L. & MED. 61, 63 (2002); Gault, supra note 35, at 329; see also Fulcher v. State, 633 P.2d 142, 145 (Wyo. 1981) (“While in an automatistic state, an individual performs complex actions without an exercise of will.”); but see People v. Furlong, 79 N.E. 978, 982 (N.Y. 1907) (indicating that multiple and detailed preparations sufficiently showed consciousness of acts).} While some inapposite comments regarding automatism and unconsciousness as direct synonyms exist,\footnote{Fulcher v. State, 633 P.2d 142, 145 (Wyo. 1981); People v. Grant, 360 N.E.2d 809, 814 (Ill. App. 1977); State v. Connell, 493 S.E.2d 292, 296 (N.C. Ct. App. 1997); Daniel Burgess et al., Reviving the “Vietnam Defense”: Post-Traumatic Stress Disorder and Criminal Responsibility in a Post-Iraq/Afghanistan World, 29 DEV. MENTAL HEALTH L. 59, 71 (2010).} the better view is that both are types of
involuntary acts, but not identical or entirely overlapping. This is because automatistic behavior can occur in individuals who are conscious, as meaning being awake and aware (which in common parlance would signify consciousness), but their actions are otherwise involuntary for criminal law purposes. To explain this, the reference earlier to the internal component of actus reus is relevant. When one is acting automatistically, he is engaged in action in the literal sense. The mental concepts of will, choice, and control are instrumental here. Only by including a mental element in the voluntary act element can cases be explained in which the actus reus is negated when defendants’ actions involve some type of a conscious state, such as somnambulism, convulsion, epileptic seizure, or reflex. Hence, commentators have sensibly demonstrated that any assumption of a dichotomous division between conscious and unconscious states is flawed since there are multitudinous degrees of consciousness for purposes of determining whether one is exercising will and control. When one acts reflexively, he

77 Bernadette McSherry, Claims of Provocation and Automatism in “Intimate” Homicides, 29 MELBOURNE U. L. REV. 905, 921 (2005) (”While there have been some cases where automatism has been equated with a complete lack of consciousness, because automatism is related to the concept of involuntariness rather than consciousness, a degree of awareness or cognitive function is not necessarily fatal to automatism being accepted by the trier of fact.”). The differentiation of automatism and unconsciousness is implicit in definitions of the involuntary act as providing alternatives such as a reflex or convulsion or the product of unconscious impetus. Model Penal Code. § 2.01; Rogers v. State, 105 S.W.3d 630, 638 (Tex. Crim. App. 2003); People v. Soe, 805 N.Y.S.2d 262, 265 (N.Y. Just. Ct. 2005); Hermida, supra note 21, at 197; see also Mike Horn, A Rude Awakening: What to Do with the Sleepwalking Defense?, 46 B.C.L. REV. 149, 161 (2004) (“Legal scholars use the term ‘automatism’ to classify states of involuntary bodily movement, and ‘unconsciousness’ to describe states of temporary mental incapacity.”).


81 Deborah W. Denno, Criminal Law in a Post-Freudian World, 2005 U. ILL. L. REV. 601, 621 (2005) (arguing that the dichotomous nature of voluntary/involuntary and conscious/unconscious obscures gradations in levels of awareness); Michael S. Pardo &
may be consciously aware of his body movements but without having the ability to control them. For example, when a doctor uses a rubber instrument to sharply tap a patient’s patellar tendon as his lower leg is loosely hanging, the patient may consciously observe—but cannot control—the knee jerk in a reflexive action. The muscular reflex results from the autonomic nervous system rather than a movement triggered by mental will.\(^2\) The point is that the phenomenology of control (the feeling of controlling one’s actions) is lacking.\(^3\) Automatism has thus been more appropriately defined as the “performance of acts by an individual without his awareness or conscious volition.”\(^4\) Perhaps, then, the better view is that automatism does not require complete unconsciousness but rather a sufficiently impaired consciousness.\(^5\)

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Dennis Patterson, *Philosophical Foundations of Law and Neuroscience*, 2010 U. ILL. L. REV. 1211, 1250 (2010) (suggesting that part of the problem may be in confusing the brain and mind as synonymous and that while the mind requires a working brain, no brain activity is per se necessary to show voluntary conduct).


\(^3\) Levy & Bayne, supra note 78, at 213-14.


\(^7\) Beran, supra note 75, at 65-66.
Fortunately, sources endure that correctly compartmentalize the actus reus as separate from the issues of mens rea or an insanity defense. As one case explains it:

*actus reus* of intent necessarily means they found the defendant to have acted consciously); United States v. Wright, CCA LEXIS 496, at *8-9 (A. Ct. Crim. App. July 29, 2005) (finding that automatism is relevant to negating mens rea); Reed v. State, 693 N.E.2d 988, 992 (Ind. Ct. App. 1998) (ruling that defendant’s evidence of small stroke as resulting in unconscious, involuntary behavior was relevant to negate mens rea); United States v. Murphy, 556 F. Supp. 2d 1232, 1237 (D. Colo. 2008) (holding that the Vietnam War veteran defendant’s proffer of expert evidence to support his claim of PTSD to negate the voluntary act requirement is inadmissible because testimony regarding mental illness is only relevant to specific intent crimes and would otherwise be confusing in the prosecution of a general intent crime).

97 State v. Wilson, 514 P.2d 603 (N.M. 1973); People v. Higgins, 159 N.E.2d 179 (N.Y. 1959); Cook v. State, 271 So.2d 232 (Fl. App. 1973); Starr v. State, 213 S.E.2d 531 (Ga. App. 1975); see also People v. Grant, 377 N.E.2d 4 (Ill. 1978) (finding that an insanity instruction in the case of epilepsy sufficed so that it was not error to fail to instruct on the voluntary act requirement); People v. Nihell, 77 P. 916, 917 (Cal. 1904) (ruling that an insanity instruction was equivalent to the defense’s theory of unconsciousness due to a combination of epilepsy and alcohol); United States v. Campos, CMR LEXIS 238 (A.C.M.R. June 30, 1993) (confirming convictions of disobeying a noncommissioned officer and aggravated assault despite defendant’s argument that a panic attack brought on by feeling confined in military vehicles negated actus reus, but also suggesting courts evaluate an automatism defense using two factors: motivation behind the behavior and whether the defendant was suffering from a condition that affected the ability to reason); Burgess, supra note 76 (arguing that an unconsciousness defense is practically synonymous to proving insanity plus the additional burden of proving automatism).

98 Kenneth H. Blumberg, *The Criminal Defense of Automatism: Is There a Place for It?*, 35 MED. TRIAL TECH. Q. 450, 451 (1989); see also McSherry, supra note 85, at 583 (2003) (criticizing the confusing nature of the law in which evidence of a mental disorder often is used both to prove an insanity defense and to negate voluntariness).


100 Smith v. State, 663 S.E.2d 155, 157 (Ga. 2008) (ruling that defendant’s theory that a physiological sleep disorder caused him to murder his wife without being aware of what he was doing correctly is a defense that does not amount to insanity); McClain v.
Unless the plea of automatism, separate and apart from the plea of mental illness or deficiency is allowed, certain anomalies will result. For example, if the court determines that the automatistic defendant is sane, but refuses to recognize automatism, the defendant has no defense to the crime with which he is charged. If found guilty, he faces a prison term. The rehabilitative value of imprisonment for the automatistic defendant who has committed the offense unconsciously is nonexistent. The cause of the act was an uncontrollable physical disorder that may never recur and is not a moral deficiency.

If, however, the court treats automatism as insanity and then determines the defendant is insane, he will be found not guilty. He then will be committed to a mental institution for an indefinite period. The commitment value of an automatistic individual to a mental institution for rehabilitation has absolutely no value. 101

Another case likewise clarified the distinction, indicating that automatism “disorders tend to be acute, unlike most cases of insanity which are typically chronic,” meaning that automatistic actions are temporary and the actors not generally in need of institutionalization. 102

Two common types of automatistic actions, those resulting from reflex and those from a dissociative state, are relevant to a PTSD-related involuntary act. 103 Reflexes are considered involuntary because the

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101 Fulcher v. State, 633 P.2d 142, 146 (Wyo. 1981); see also McClain v. State, 678 N.E.2d 104, 109 (Ind. 1997) (noting that merging automatism and insanity would unnecessarily result in depriving one’s liberty interest despite being sane and without a mental disorder); Janet Hoover Bassitt, Automatism: An Involuntary Act Defense, 68 I. B. A. J. 740, 743 (1990) (noting that it is “unthinkable” to punish automatistic acts the defendant cannot resist or to declare him insane for what may be an organic defect).


103 Black’s Law Dictionary defines automatism as an “[a]ction or conduct occurring without will, purpose, or reasoned intention, such as sleepwalking; behavior carried out
individual has no mental control over them. For example, a case discussing *actus reus* notes that

the autonomic nervous system controls involuntary bodily functions. The heart muscle pumps without our intervention. Our lungs can ingest air without thought. Our eyes shut reflexively when the ophthalmologist tests us for glaucoma. These are the sorts of bodily movements that would not be ‘performed consciously and as a result of effort and determination.’

Other cases also recognize that a reflex is an act over which the person has no control. Reflexive action for purposes of negating *actus reus* need not be limited to those that are genetically determined from birth but can be learned.

Those courts that accept a dissociative state-type of automatism inherently accept the idea that the involuntary act is not restricted to a full state of unconsciousness. The American Psychiatric Association defines a dissociative state as “a disruption in the usually integrated functions of consciousness, memory, identity, or perception of the environment.” “During dissociative states, the individual may act without conscious will or engage in overlearned behaviors that have come in a state of unconsciousness or mental dissociation without full awareness” (9th ed. 2009).

105 State v. Mishne, 427 A.2d 450, 458 (Me. 1981); see also Model Penal Code § 2.01 (Official Draft 1962).
107 People v. Moore, 5 Cal. App. 3d 486, 492 (1970) (determining a jury instruction on finding a voluntary act was required based on evidence that the defendant was in a “schizophrenic fugue state” when he shot the victim and that his acts were “an automatic reaction without consideration;” as, “in a dream without any thought”); Williams v. Gupton, 627 F. Supp. 669, 671 n.1 (W.D. N.C. 1986) (approving a definition of automatism that would include either consciousness or semi-consciousness) (citing State v. Mercer, 165 S.E.2d 328 (N.C. 1969)); Stanley Yeo, *Clarifying Automatism*, 25 INT’L J. L. & *Psychiatry* 445, 449 (2002) (arguing that automatism should not be limited to cognitive defects but should also include the lack of control over conduct that may arise from a more volitional deficit such as would arise from a dissociative state).
to be stimulus or situation bound.” Another expert describes it as the mind creating states of “consciousness that alternatively define reality and allow conclusions that what exists does not actually exist and what does not exist does.” Hence, one may be engaging in automatistic action while not really being unconscious, as the actor may be responding to a stimulus and have some understanding but otherwise “seems to be someone else.” There has also recently been recognition that to negate the involuntary act requirement, the defendant’s dissociative state need not be linked to a recognized mental disorder. As an example, another commentator suggests that:

Limiting automatism to cases where the actor was totally unconscious would seem to be too restrictive, for there are cases, for example, following a blow, where the actor is in a dreamlike state, partially aware of what is going on but incapable of consciously controlling his/her conduct in relation thereto.

The following summary aptly describes criminal cases in which dissociative state automatism may negate the voluntary act requirement:

Dissociation can manifest as pathological failures to integrate thoughts, feelings, memories and actions into a unified consciousness. Dissociation is thought to occur for a number of reasons. It has been viewed as a psychological defence mechanism driven by intolerable emotional conflict or external stress, or as a disruption of integration caused by intense arousal or lack of selective focus. The most common form of dissociation takes . . . is where the accused become completely unaware of performing the relevant act. In

111 Corrado, supra note 47, at 1553.
112 Bernadette McSherry, *Claims of Provocation and Automatism in “Intimate” Homicides*, 29 MELB. U. L. REV. 905, 921 (2005) (contending that for dissociation the result may be based on whether the condition upon which it is based is recognized as a mental disorder).
some cases the accused becomes *depersonalised* — a form of dissociation in which the person experiences an altered sense of self. In either case the sense of self as acting agent is either completely lost or radically altered by the dissociation.\(^{14}\)

These two types of automatism—reflex and dissociation—are relevant to PTSD-related voluntary act issues experienced by combat veterans. The next section further explores PTSD as a psychiatric diagnosis and delineates the background of neurological, physiological, and behavioral explanations for automatistic acts by PTSD-afflicted combat veterans.


\(^{15}\) Matthew J. Friedman et al., *PTSD: Twenty-Five Years of Progress and Challenges, in Handbook of PTSD: Science and Practice* 3, 4 (Michael J. Friedman et al. eds., 2007).

\(^{16}\) Burgess et al., *supra* note 76; F. Don Nidiffer, *To Hell and Back: Evolution of Combat-Related Post Traumatic Stress Disorder*, 29 *Dev. Mental Health* L. 1, 4 (2010).

\(^{17}\) Slovenko, *supra* note 110, at 411-412.

C. PTSD and the Automatistic Fear Response

Despite PTSD generally being conceived within the domain of the psychiatric profession, scientific research underscores that PTSD is not limited to any individual physical or mental condition. Certainly, modern neuroscience makes clear that an individual’s behavior is

165 Booth-Kewley et al., supra note 131, at 72; see also U.S. GOV’T ACCOUNTABILITY OFF., ACTIONS NEEDED TO FURTHER IMPROVE THE CONSISTENCY OF COMBAT SKILLS TRAINING PROVIDED TO ARMY AND MARINE CORPS SUPPORT FORCES 1 (2010), http://www.gao.gov/new.items/d10465.pdf (“In conventional warfare conditions, support forces would normally operate in rear areas away from the front lines of a battlefield. However, the current combat environments in Iraq and Afghanistan have demonstrated that there are no clear distinctions between the front lines and rear support areas, and support forces are, therefore, at times exposed to hostile fire without support from combat arms units.”).


168 Booth-Kewley et al., supra note 131, at 72.

169 Ottati & Ferraro, supra note 160, at 187.

substantively interconnected with his brain and his body. PTSD is better conceptualized in a holistic, psychopathological model involving multiple human systems with interactions between the individual’s stress, psychophysiological reactivity, neurohormonal responses, and musculoskeletal adaptations.\(^{171}\) While it is beyond the scope of this article to fully explore the growing literature on PTSD from the various interested fields of biology, neurology, and psychiatry, among others, a somewhat simplistic summary may be useful to support the thesis of this paper: a case may be made that instances exist whereby a combat veteran’s PTSD renders him as acting in an automatistic manner—that is cognitively, physiologically, and muscularly responding intuitively to a perceived threat—and therefore he is not engaged in a voluntary act for the purposes of criminal law.

In general, experts characterize PTSD as a “stress-induced fear circuitry disorder” related to reflex-like responses,\(^{172}\) such as those in which traumatic, fear-inducing stimuli produce autonomic changes via the sympathetic and parasympathetic neural systems\(^{173}\) and functional abnormalities in the brain that impede information processing.\(^{174}\) An author discussing a PTSD-inflicted combat veteran provides an apt synthesis of the interconnecting processes that will be outlined further below:

At a neuroanatomical level, the part of this veteran’s brain (the amygdala) which instantly responds to perceptions of danger by triggering the body’s fight or flight response (i.e., hyperarousal) has hijacked his behavior and induced a series of physiologic reactions (rapid heart rate, palpitations, sweating, increased blood flow to large muscle groups) which are entirely appropriate for dealing with actual threats to one’s survival. For a person


\(^{173}\) Neumeister et al., *supra* note 171, at 153.

suffering from PTSD, it takes much longer than normal for the part of his brain (the hippocampus) that rationally assesses the situation and synthesizes data about the environment to override the amygdala and restore a feeling of personal safety.175

As for the relevance of the nervous system, trauma and stress can corrupt neural structure and function because of the nervous system’s adaptive qualities in interpreting and responding to dangerous or capricious signals.176 In neurological terms, stress is any challenge to homeostasis (internal stability) that requires an adaptive response.”177 It normally involves a stimulus input, an evaluation of the information, and a response output.178 However, “[u]nder certain conditions, automated responding will be advantageous over more slow cognitive processing of stimuli.”179 Hence, a “stress response [] can be induced in a relatively simple, reflex-like manner, in which case it does not necessarily require an evaluation of the situation by the subject.”180 The reflexive stress response is adaptive because the achievement of homeostasis requires allostasis, the body’s flexibility to counter potential threats by alterations in physiological functions, such as heart rate and respiration.181 The nervous system thereby learns from previously successful reactions that promoted survival and thereby further adapts to counter future traumatic stresses that appear to be of similar ilk.182

Overall, traumatic stress, particularly when it induces fear, disrupts the individual’s psychophysiology with potentially disabling physical, emotional, and mental consequences.183 Scientists define fear as a physiological alarm reaction that reflexively induces the fight or flight response, if possible, with neurons playing a role in generating the

177 McFarlane, supra note 171.
178 Lustig, supra note 175, at 25.
179 Id. at 35.
180 Id. at 26.
181 Niehoff, supra note 176.
182 Id. at 851.
183 McFarlane, supra note 171.
reflexive response. Studies of PTSD have shown corresponding neuropathological deficits, including abnormal serotonin, abnormal noradrenergic function, and dysfunction of the hypothalamic-pituitary-adrenal axis, all of which disrupt the return to homeostasis.

These alterations in the nervous system and the resulting physiological disruptions are, then, linked to abnormalities in extinguishing a learned fear response. Researchers found that PTSD patients bore physiological impairments in being unable to inhibit a conditioned fear response to perceived danger even under safe conditions. Such body arousal mechanisms become impaired when reminders of traumatic events cause the autonomic nervous system to hyperreactively respond to stimuli with a bias toward perceiving it as threatening. Thus, what originally could have been an appropriate survival response to danger may be repeated later when the neural changes from the prior event mean that benign stimuli are misconstrued as threatening, thereby requiring the body to make a quick response to survive. In addition, with systemic deficits in the stress response rendered by PTSD, the adaptations may make the individual hypervigilant and hyperreactive. PTSD correlates with hyperactive sympathetic nervous system responses to threats, but with the decreased ability to regulate the sympathetic nervous system’s response thereto. Indeed, when an individual with PTSD re-experiences a traumatic

185 Mark A. Rogers et al., Smaller Amygdala Volume and Reduced Anterior Cingulate Gray Matter Density Associated with History of Post-Traumatic Stress Disorder, 174 PSYCHIATRIC RES.: NEUROIMAGING 210, 210 (2009); see also Kimble et al., supra note 119, at 297 (observing that a consequence of PTSD is that these nervous system allostatic adaptations to threatening cues make the individuals substantially unable to disengage from fixating on stimuli thought to be threatening, thereby exacerbating the stressful condition and preventing the return to homeostasis).
186 Tanja Jovanovic et al., Fear Potentiation is Associated with Hypothalamic-Pituitary-Adrenal Axis Function in PTSD, 35 PSYCHONEUROENDOCRINOLOGY 846 (2010).
187 Ford, supra note 118, at 119-20.
188 Jacques Dayan & Bertrand Olliac, From Hysteria and Shell Shock to Posttraumatic Stress Disorder: Comments on Psychoanalytic and Neuropsychological Approaches, 104 J. PHYSIOLOGY 296, 300 (2010).
189 Id.
memory, the original stress response is triggered, and over time the cycle may progressively enhance the person’s vigilance and reactivity. Over time, too, a range of stimuli may remind the individual of the traumatic event leading to a generalized overreactivity.

In combat, hyperactivity can be protective of a soldier’s survival by sustaining his physical and emotional alertness and enabling quick physical responses. But, the physiological hyperreactivity may not be extinguished after battle because of PTSD-linked brain impediments. An important scientific basis for PTSD is that the autonomic nervous system can override and impair the functional integrity of the brain. Traumatic events can refocus the brain and body from normal learning functions to survival; in PTSD this is noted as the survival brain dominating the learning brain. The “survival brain relies on rapid automatic processes that involve primitive portions of the brain . . . while largely bypassing areas of the brain that are involved in more complex adaptations to the environment (i.e. learning).” Thus, the survival brain fixates on automatic non-conscious scanning for threats, but by doing so alters the brain’s normal ability to cognitively process the information in terms of making the appropriate response (or nonresponse).

The holistic perspective underlying actions also considers that neurological and physiological functioning have correlates with physical abnormalities in the brain. Modern scientific knowledge highlights that brains are malleable; not only are brains instrumental in behavior, correspondingly, behaviors can alter the structure and function of

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191 McFarlane, supra note 171, at 4.
192 Id. at 5.
193 Mario Enrique Molina et al., Basal Cerebral Glucose Distribution in Long-Term Post-Traumatic Stress Disorder, 11 WORLD J. OF BIOLOGICAL PSYCHIATRY 493, 499 (2010).
194 Ford, supra note 118, at 119.
195 Id. at 127-28 (indicating the survival brain “seeks to anticipate, prevent or protect against the damage caused by potential or actual dangers, driven and reinforced by a search to identify threats and an attempt to mobilize and conserve bodily resources in order to maintain this vigilance and defensive adjustments to maintain bodily functioning” while a learning brain is “engaged in exploration (i.e. the acquisition of new knowledge and neuronal/synaptic connections) driven and reinforced by a search for an optimal balance of novelty and familiarity”).
196 Id. at 129.
197 Id.
brains. Brain studies and neuroscience research show the multiple impacts that PTSD can generate in organic brain matter and brain function. Researchers have found that brains of PTSD-diagnosed combat veterans are smaller in volume, thickness, and area compared to control samples. Scientists theorize that as stressful stimuli involve increasingly complex defensive responses, a greater number of brain areas are affected. The brain structures that are most affected by trauma include the amygdala, the hippocampus, and the frontal cortex.

The amygdala is responsible for the formation and storage of memories associated with emotional events, such as traumatic stressors. Thus, the amygdala is instrumental in fear circuitry such that abnormalities in amygdala pathways may impair fear conditioning. For example, an exaggerated response in the amygdala has been linked to heightened responsiveness to a potential threat stimulus and impaired processing of safety signals. Neuroimaging studies have found that smaller amygdala volume correlate significantly with PTSD.

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198 Steven K. Erickson, Neuroscience: Blaming the Brain, 11 MINN. J. L. SCI. & TECH. 27, 32 (2010); see also Falconer, supra note 9, at 439 (finding deficits in neuropsychological, autonomic, and brain processing in PTSD-diagnosed sample compared to a non-trauma-exposed group in a matched pairs design).


200 Steckler, supra note 172, at 35.

201 Shin & Handwerger, supra note 174, at 409.

202 Niehoff, supra note 176.

203 Thomas W. McAllister & Murray B. Stein, Effects of Psychological and Biomechanical Trauma on Brain and Behavior, 1208 ANN. N.Y. ACAD. SCI. 46, 49 (2010).

204 Jennifer J. Vasterling et al., Mild Traumatic Brain Injury and Posttraumatic Stress Disorder in Returning Veterans: Perspectives from Cognitive Neuroscience, 29 CLINICAL PSYCHOL. REV. 674 (2009); see also Molina et al., supra note 193, at 499 (brain imaging showed abnormal metabolic reactivity in the amygdala in a sample of war veterans with PTSD compared to a matched control group of asymptomatic soldiers, which result “may be originated in the reduction of discriminative inhibitory signals from prefrontal and limbic regions, which have been depressed in favour of sensorial and cerebellar performance”); Kimble et al., supra note 119, at 297 (finding significant pupil dilation in combat veterans with PTSD when shown Iraqi images, indicating amygdala activation and autonomic arousal).

205 Tanja Jovanovic et al., Impaired Fear Inhibition Is a Biomarker of PTSD but Not Depression, 27 DEPRESSION & ANXIETY 244, 249 (2010); McAllister & Stein, supra note 203, at 49 (finding that in PTSD patients the ability to extinguish hyperreactive responses is nullified).

206 Rogers et al., supra note 185.
The hippocampus is crucial to memory storage and retrieval, and with traumatic stress in a PTSD patient, the hippocampus can fail to properly encode the traumatic memory. A hippocampal deficit may thereby impair the individual’s appreciation of safety cues and is partly responsible for an inappropriate physiological response to stress. The traumatic event affects cells in the hippocampus such that the fear response fails to turn off. A neuroimaging study also showed signs that PTSD was related to suppressing the creation of new brain cells in the hippocampus that may have otherwise operate to ameliorate the impaired function.

In addition to deficits in the amygdala and hippocampus, PTSD patients also bear impaired functioning of the frontal cortex, which would otherwise mediate the extinction of hyperreactivity to stimuli that are actually not threatening. As an example, frontal lobe damage can interfere with normal balancing between an individual’s plan-driven willed behavior and environmental cues.

On the whole, PTSD is not simplistically a mental health issue. It represents a multi-systemic consequence to traumatic stress that can easily overwhelm an individual’s ability to control hyperreactive stress responses. Scientific evidence strongly supports a theory that PTSD-affected combat veterans may be automatically/reflexively responding to threats of danger based on neuropsychological survival adaptations begot by wartime experiences.

IV. A THEORY OF A PTSD-RELATED INVOLUNTARY ACT NEGATING CULPABILITY FOR COMBAT VETERANS

At the outset, it should be noted that any theory that seeks to exculpate a person from criminal culpability, particularly when the person’s own physical deed caused the harm, is likely to clash with free

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207 Ford, supra note 118, at 118-19.
208 McFarlane, supra note 171, at 5.
210 Moore, supra note 131, at 13.
212 Rogers et al., supra note 184; McFarlane, supra note 171, at 4-5.
will enthusiasts. Representing the traditional philosophical perspective on culpability, in a case in which the defendant claimed that his stress-induced reaction was unconsciously motivated, is one court's representative stance:

For protection of society the law accepts the thesis that all men are invested with free will and capable of choosing between right and wrong. In the present state of scientific knowledge that thesis cannot be put aside in the administration of the criminal law. Criminal blameworthiness cannot be judged on a basis that negates free will and excuses the offense, wholly or partially, on opinion evidence that the offender’s psychological processes or mechanisms were such that even though he knew right from wrong he was predetermined to act the way he did at that time because of unconscious influences set in motion by the emotional stresses then confronting him. In a world of reality such persons must be held responsible for their behavior.214

While the foregoing observation is contrary to the thesis of this paper, the court’s statement correctly implies that judgments of criminal culpability should consider societal interests and values. Hence, it is important to recognize that “how much lack of capacity is necessary to find the agent not responsible is a normative moral, social, political, and ultimately legal issue.”215 It appears that this type of free will argument is more about eliminating the voluntary act doctrine itself. If so, then their proposition ought to be more directly put forth in a public debate about the existence of the actus reus requirement itself. It would be more transparent to jettison the element outright than to shift involuntary-type facts to being considered under alternative theories, such as mens rea, insanity, or diminished capacity.

Still, before making a normative and social argument to support this paper’s theme, a quick review is provided of the historical status in criminal cases of combat veterans whose offending may have been related to PTSD. Legal literature contains some discussion about PTSD offering

214 State v. Sikora, 210 A.2d 193, 202 (N.J. 1965) (assuming, though, that psychiatric evidence of unconscious action was potentially relevant to mens rea, without discussing actus reus).
a defense for former service members, though this scholarship has mostly focused on a potential insanity defense. Nonetheless, such literature has generally highlighted the obstacles to successfully applying insanity to a PTSD-related disorder. For example, it is posited that the difficulties veteran defendants face in convincing a jury of a PTSD-based insanity defense are that it is self-serving in nature and that juries are generally not convinced that PTSD fully deprived the veteran defendant of the ability to act in a predetermined manner. The application of PTSD to negate the involuntary act element is rarely noted, but those commentators who have mentioned it as a potential issue almost universally and summarily discount the ability of combat veterans to successfully use PTSD to negate the voluntary act requirement of actus reus. This tendency is


218 Corrado, supra note 47, at 1552 (noting also, though, that an insanity defense involving PTSD is merely "plausible"); It may also be true in a PTSD veteran's case that the jury's disbelief is no doubt compounded when a defendant mounts a defense based on PTSD, since no one but the defendant himself is able to recount and describe the symptoms and behavior that resulted from PTSD and led to the criminal conduct. In many cases a defendant's substance abuse, which is often a byproduct of PTSD itself, serves to undermine the defendant's credibility and to enable prosecutors to point to a cause of the defendant's behavior apart from his mental illness. Constantina Aprilakis, The Warrior Returns: Struggling to Address Criminal Behavior by Veterans with PTSD, 3 GEO. J. L. & PUB. POL'y 541, 561 (2005).

219 Jonathan I. Bisson, Automatism and Post-Traumatic Stress Disorder, 163 BRIT. J. PSYCHIATRY 830, 831-32 (1993) (noting the possibility that a veteran's PTSD may trigger a dissociative state that may comprise automatism but opining it is unlikely);
consistent with the observation made earlier that case law often fails to adequately respect this basic criminal law element.

Nonetheless, a few legal practitioners recently have noted the general importance that PTSD can have in defending veterans in criminal cases in terms of negating culpability altogether or mitigating responsibility for a lesser sentence. For instance, a scholar has argued for a per se exclusion of combat veterans with PTSD from the death penalty, arguing that the connection between the PTSD and combat service make them less personally culpable and not representative of the worst of the worst offenders for which death is proportionate. The Supreme Court itself has suggested that failing to present service-related PTSD evidence in the sentencing phase of a capital case involving a veteran defendant may breach the defendant’s constitutional rights because the defendant’s service career and resulting impairments to functioning would appear to be mitigating evidence from a moral culpability perspective.

The idea from the latter perspectives is, therefore, that normatively the culpability of the individual should not be isolated from

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Hafemeister & Stocky, supra note 217, at 112 n.150-51 (noting that PTSD may establish an automatism defense only in “extreme cases” where the defendant exhibits “a physiological reaction to external or internal cues or after experiencing dissociative flashback episodes and reenactments”); Gover, supra note 115, at 562-63 (contending that veterans with PTSD may only succeed with an automatism defense if in a dissociative state); Burgess et al., supra note 76 (arguing that only PTSD with a dissociative reaction can “theoretically” negate the actus reus).

220 Timothy P. Hayes, Post-Traumatic Stress Disorder on Trial, 190 MIL. L. REV. 67, 104 (2006/2007); Andrea Friel et al., Posttraumatic Stress Disorder and Criminal Responsibility, 19 J. FORENSIC PSYCHIATRY & PSYCHOL. 64, 78-80 (2008); Brown, supra note 170; see also C. Peter Erlinder, Vietnam on Trial, 52 GUILD PRAC. 65, 82 (1985) (“In a very real sense, veterans and others affected by PTSD who have not had that fact presented at trial or sentencing have not had their day in court.”); Marcia G. Shein, Post-Traumatic Stress Disorder in the Criminal Justice System: From Vietnam to Iraq and Afghanistan, 57 FED. LAW. 42, 49 (2010) (encouraging lawyers with veteran clients with PTSD to introduce that fact at trial or sentencing to show reduced culpability); Peyton Cooke, Post-Traumatic Stress Disorder & the Military Justice System, 79 MISS. L. J. 485 (2010) (supporting a combination punishment and rehabilitation model for violations of minor disciplinary infractions committed by PTSD-diagnosed soldiers).


the broader context because of the unique scenario posed by the current wartime conflicts. A commentator has suggested that permitting PTSD evidence in a veteran’s criminal trial should be considered another cost of war when the government chooses a policy of invading a sovereign country involving guerrilla warfare and killing civilians. With inadequate services and tools for combat veterans to safely reintegrate into the civilian population, our societal obligations may include a reconceptualization of the criminal justice system’s response to combat veterans whose PTSD is related to their automatistic actions that result in what would otherwise be considered criminal harm. Similarly, in placing servicemen in structural combat conditions in which they may be responsible for mistakenly killing a civilian thought to be an insurgent, “[w]e are doing a disservice to our service members and veterans if we fail to conceptualize and address the lasting psychological, biological, spiritual, behavioral, and social impact of perpetrating, failing to prevent, or bearing witness to acts that transgress deeply held moral beliefs and expectations, that is moral injury.” It has also been recognized that “[t]he disproportionate number of our ex-service personnel suffering from stress, psychological problems, drink and drug dependency who find themselves homeless on the streets or serving jail sentences speaks volumes about our failure to provide an effective safety net of care and support.” Thus, the idea that PTSD can validly be considered to impact the normative culpability judgment is presented here as particularly appropriate to the situation of war veterans considering that the combat-related triggers of PTSD would not have occurred “but for

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223 Erlinder, supra note 220; see also Wales, supra note 217, at 395 (“There is also a normative political question. The Iraq War was sold to voters in part by statements about how cheap it would be. If the electorate is to make informed choices about matters as consequential as war, a greater transparency in the true costs of war would seem to be progress.”).

224 Nidiffer, supra note 116 (urging a societal consideration of whether the high incidence of PTSD by war veterans ought to be a consideration in reassigning culpability for criminal offenses when the military’s training and reintegration failures are behind stateside PTSD-related offending).

225 Litz et al., supra note 156, at 696 (discussing, though, the more general social obligation to provide services and a safety net to veterans).

government action in the form of training them to kill and sending them to war.”

Though some of the foregoing comments suggest that combat veterans be treated specially in the eyes of the criminal law, the thesis of this paper does not rely upon any differential treatment per se. Rather, a fundamental common law principle is that criminal law requires the presence of the actus reus for criminal culpability. Without it, there is no philosophical or moral basis for condemnation or punishment. The role of the country and the military in producing PTSD-afflicted war veterans is relevant here to establishing a basis for reinvigorating actus reus as a necessary element of criminal offenses. It is a timely concurrence of events that allows a rich perspective on automatism and how automatistic acts deprive the conduct of its criminal nature. Attention recently placed upon the high prevalence and explanations for PTSD in combat veterans in the news media, scholarly publications, and legal circles serves this pursuit of modernizing and strengthening the principle of actus reus.

The correlating connections between military duties, PTSD, and automatistic reactions related to war-based trauma are evident. Combat training emphasizes muscle memory and automatically reacting to threats. Certainly, automatic physical responses to aggressive stimuli are highly adaptive behaviors to survive combat and benefit the military’s objective. A recent Army Field Manual provides that “[t]o survive, the soldier in combat must be able to deal with any situation that develops. His ability to adapt any nearby object for use as a weapon in a win-or-die situation is limited only by his ingenuity and resourcefulness.” The fact that military training stresses hypervigilance with reactionary conduct that involves lethal force also is related to PTSD. Recent research on Iraq and Afghanistan veterans shows that their experiencing PTSD-related hyperarousal symptoms is highly correlated with measures of

227 Giardino, supra note 221, at 2961.
228 Tramontin, supra note 121. The Army Field Manual provides training suggestions on developing “instinctive reflexes in hand-to-hand combat.” DEPT. OF THE ARMY, ARMY FIELD MANUAL NO. 3-25-150, at 7-9 (Jan. 18, 2002).
229 David M. Benedek & Thomas A. Grieger, Post-Development Violence and Anti-Social Behavior: The Influence of Pre-Deployment Factors, Warzone Experience, and Posttraumatic Stress Disorder, 3(3) PRIMARY PSYCHIATRY 51, 52 (2006); see also Steckler, supra note 172, at 35 (recognizing that automatic responses by the brain in responding may be more advantageous than cognitively processing stimuli).
230 DEPT. OF THE ARMY, ARMY FIELD MANUAL NO. 3-25-150, at 7-29 (Jan. 18, 2002).
231 Nidiffer, supra note 116.
aggressive impulses, difficulty managing anger, and problems controlling
violence. As discussed in the prior Section, the correlation between
PTSD and impulsive aggression is likely the result of the arousal and
emotional deficits in neurobiological functioning. Other recent studies
also support connections between combat-related PTSD and aggression.
A study of Iraq and Afghanistan veterans found significantly higher levels
of anger and hostility and a higher likelihood to have endorsed aggression
than veterans without PTSD. The anger and hostility may be a coping
mechanism to the stressful re-experience of the traumatic event, which
for soldiers was likely one involving the threat of lethal violence. Anger
and hostility can also explain how an aggressive response may be
triggered by the instinctive fight impulse instilled in combat soldiers.
Veterans with PTSD commonly report such manifestations of
hypervigilance after returning stateside of constantly scanning for
potentially threatening individuals and weapons and otherwise being alert
for changes in driving conditions, obstructions ahead, suspicious noises,
and suspecting anything else out of place. The foregoing helps
contextualize the link between PTSD and post-deployment violent
behavior in combat veterans.

The dissociative type of automatism is a commonly reported
symptom of combat-related PTSD. Understandably, flashbacks are a
main cause of dissociative violence for combat veterans. The
dissociative state can involve automatistic behavior in combat veterans in

232 Elbogen et al., supra note 148.
233 Andra L. Teten et al., Characterizing Aggression and Its Association to Anger and
Hostility Among Male Veterans with Post-Traumatic Stress Disorder, 175 MIL. MED. 405,
409 (2010).
234 Matthew Jakupcak et al., Anger, Hostility, and Aggression Among Iraq and Afghanistan
War Veterans Reporting PTSD and Subthreshold PTSD, 20 J. TRAUMATIC STRESS 945,
949 (2007).
235 Id. at 946.
236 Aprilakis, supra note 218, at 543.
237 Kimble et al., supra note 119, at 298.
238 Id.
239 Andrew Moskowitz, Dissociation and Violence: A Review of the Literature, 5 TRAUMA,
VIOLENCE, & ABUSE 21, 31 (2004); Chris R. Brewin & Trishna Patel, Auditory
Pseudohallucinations in United Kingdom War Veterans and Civilians with Posttraumatic
Stress Disorder, 71 J. CLINICAL PSYCHIATRY 419, 424 (2010) (observing, too, a
connection between PTSD, dissociation, and hearing voices, both negative and positive
in message).
240 Moskowitz, supra note 239, at 31.
reengaging their role as soldiers and drawing upon conditioned training. More specifically, the more combat exposure and the greater stresses experienced in combat are correlated to the severity of PTSD and resulting hostile actions which mimic combat-related violence. Dissociative states are observed in returning combat veterans who reengage a “battlefield mindset.” A dissociative flashback enlists the veteran’s survivor modality by focus on protecting oneself and others, with the reflexive-oriented training of aggressive responses available. Flashbacks and emotional numbing, such as feeling detached and isolated, are common in PTSD. Dissociation can be a positive and adaptive psychological tactic by providing an emotional buffer to trauma and otherwise being a self-protective mechanism.

In thereby making the theoretical case for the potential for an automatism-based negation of criminal culpability regarding combat-induced PTSD, two obvious criticisms must be addressed. First, there is the fear that allowing a full defense (actually a failure of a necessary element of crime) to someone based upon the consequences of a mental condition undermines public safety if the person continues to pose a risk of harm to others. Though some would describe a defense based on PTSD as an excuse, even an “entitlement to commit violence,” this

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241 Burgess et al., supra note 76.
242 Id. at 81.
243 Tramontin, supra note 121.
244 Davidson, supra note 217, at 429.
245 Moskowitz, supra note 239, at 24.
246 Ford, supra note 118, at 35-36; see also Richard A. Bryant, Does Dissociation Further our Understanding of PTSD?, 21 J. ANXIETY DISORDERS 183, 187 (2007) (indicating also that the relationship between PTSD and dissociative states is mediated by fear of death and loss of control).
247 Nidiffer, supra note 116 (noting that failing to hold veterans culpable for the crimes they commit will disincentivize them from embracing more socially acceptable behavior which will be counterproductive in making them more isolated with less social support); Bassitt, supra note 101, at 741 (contending that automatism may lead some to deal with it under the rubric of insanity if there is fear that the person will again experience the state that prompted the previous automatistic behavior); Pruett v. Thompson, 771 F. Supp. 1428, 1448 (E.D. VA 1991) (approving defense counsel strategy not to highlight veteran’s PTSD as it could instead be used by the prosecution to support the dangerousness of the defendant).
248 Sonia Grover, It’s a Crime: Reexamining the Successful Use of Posttraumatic Stress Disorder as a Legal Defense to Child Sexual Assualt in the Canadian Case of R. v. Borsch, 9 ETHICAL HUM. PSYCHOL. & PSYCHIATRY 5, 12 (2007) (“It is not helpful . . . when the
perspective does not undermine the thesis of this paper: if by virtue of the fundamental tenets of a common law-influenced criminal law a person is not criminally culpable because of the absence of a material element, here being the lack of actus reus, then no crime was perpetrated and no excuse necessary.\textsuperscript{249} Neither revenge nor retribution is a legitimate reason for punishment for actions that are not voluntary.\textsuperscript{250} A prominent legal theorist on actus reus reflected recently on the philosophical musings of a nineteenth century English scholar on criminal law: “an agent whose body moves purely as a result of mechanism, say, a reflex or a spasm produced by a neurological abnormality, has not acted at all and cannot be punished if the movement caused harm. This was entirely uncontroversial then and is so today.”\textsuperscript{251} A similar philosophical principle applies when criminal responsibility is not assigned (and moral condemnation by society not justified), despite the occurrence of a social harm, based on the lack of any other required element of an offense, such as the requisite mens rea. The potential threat that otherwise involuntary actors pose is insufficient:

The goal of nipping every potential threat in the bud, combined with the impossibility of its achievement, sets in motion a continuing expansion of preventive measures, an infinite regress along the causal chain toward the origin of threats, the heart of darkness.\textsuperscript{252}

As for moral condemnation, in automatism, the person’s action does not reflect their moral character; indeed they are estranged from their courts—without scientific basis—reify PTSD as a causative factor that dictates and explicates choices that involve the violation of another’s fundamental human rights.”).  

\textsuperscript{249} The involuntary act doctrine is theoretically explained by the causal explanation of law whereby it is improper to punish someone for forces beyond their control. Kaye, \textit{supra} note 16, at 1126 (contrasting causal theory with compatibilist theory). It has been suggested that a possible alternative to addressing the continuing risk argument is to utilize a preventive detention model. See Christopher Slobogin, \textit{A Jurisprudence of Dangerousness}, 98 NW U. L. Rev. 1, 43-44 (2003) (contending that defendants who successfully establish a defense of unconsciousness should still be subject to preventive detention, such as civil commitment, if the underlying reason, such as automatic reactions triggered by memories of past traumatic events, renders them a continued threat because they cannot be deterred).

\textsuperscript{250} LaFave, \textit{supra} note 52.


morality. Automatistic behaviors may actually be contrary to one’s normal character.

To the extent that PTSD increases the risk that veterans pose a danger to others, there are alternatives outside the criminal justice system. Considering that the incidence of PTSD and the correlative factors are now better known, the government and social services can improve upon preventive methods and work on a rehabilitative model. From a public safety perspective, it is important that PTSD is now generally considered treatable. Recent studies indicate that various treatments have shown strong effectiveness in reducing PTSD manifestations, such as cognitive behavioral therapy, prolonged exposure, eye movement desensitization, and pharmacological treatment. A recent report of the United States Department of Veterans Affairs reports that expanded coverage and availability of veterans’ healthcare has resulted in a “high level of service use” of mental

253 Horder, supra note 34, at 317.
254 Levy & Bayne, supra note 77, at 212; Kaye, supra note 16, at 1161.
255 LaFave, supra note 52.
256 Tramontin, supra note 121.
258 Mark B. Powers et al., A Meta-Analytic Review of Prolonged Exposure for Posttraumatic Stress Disorder, 30 CLINICAL PSYCHOL. REV. 635 (2010); Afsoon Eftekhar et al., Do you Need to Talk About It? Prolonged Exposure for the Clinical Treatment of Chronic PTSD, 7 BEHAV. ANALYST TODAY 70 (2006); see also Sheila A.M. Rauch et al., Prolonged Exposure for PTSD in a Veterans Health Administration PTSD Clinic, 22 J. TRAUMATIC STRESS 60 (2009) (indicating prolonged exposure therapy includes psychoeducation, in vivo exposure, and imaginal exposure).
259 John G. Carlson et al., Eye Movement Desensitization and Reprocessing (EMDR) in Combat-Related Posttraumatic Stress Disorder, 11 J. TRAUMATIC STRESS 3 (1998); but see Michael L. Macklin et al., Five-Year Follow-Up Study of Eye Movement Desensitization and Reprocessing Therapy for Combat-Related Posttraumatic Stress Disorder, 41 COMPREHENSIVE PSYCHIATRY 24 (2000) (finding that positive gains after eye movement desensitization and reprocessing therapy soon after treatment were lost after a five-year period).
260 Marcelo Mello, A Randomized, Double-Blind, Placebo-Controlled Trial to Assess the Efficacy of Topiramate in the Treatment of Post-Traumatic Stress Disorder, 9 BMC PSYCHIATRY 28 (2009).
health and general medical care among veterans with PTSD. In addition, many combat veterans pose little threat. Unlike other psychiatric disorders, PTSD is extremely variable in severity, the manifestations are not constant, its onset may not occur until years after the traumatic event, and once it does develop remission is also common.

The second issue is a criticism that a PTSD diagnosis is subjective in nature and reliant upon the individual’s own accounts. To the extent critics argue that this will encourage defendants to defraud the courts with nefarious claims of automatism, this conundrum of problematic evidence and credibility concerns is certainly nothing new to criminal law. The entire doctrine of the mens rea necessarily is inherently enigmatic in terms of proof since there is no reliable method of ascertaining an individual’s particular mental state at the time of his potentially criminal action, much less done in retrospect at trial. Despite this, prosecutors regularly are successful in offering sufficient proof to permit a jury to determine—beyond a reasonable doubt—the defendant’s particular mental state. Further, the criminal trial bar is experienced with defensive attempts to negate an element of the crime charged, whether it regards the mens rea, actus reus, or some other element, with evidence that is known only to the defendant or can be otherwise supported by expert testimony. As examples, evidence is commonly at issue involving the potential role of intoxicants, mental disorders, and health issues. The criminal law is beset with issues of

261 U.S. Dep’t of Veterans Affairs, Health Services Use in the Department of Veterans Affairs Among Returning Iraq and Afghan War Veterans with PTSD, 22(2) PTSD QUARTERLY 1, 2 (2011).
263 Burgess et al., supra note 76; Landy F. Sparr, Mental Defenses and Posttraumatic Stress Disorder: Assessment of Criminal Intent, 9 J. TRAUMATIC STRESS 405, 411 (1996); David Zuchino, More Veterans Are Using PTSD as Defense in Criminal Cases, L.A. TIMES, Sept. 14, 2001; see also Slovenko, supra note 110, at 415 (likening a PTSD diagnosis to the generally inadmissible lie detector).
264 State v. Hinkle, 489 S.E.2d 257, 264 n.26 (W. Va. 1996) (noting that fears of a “flood of false and manufactured unconsciousness defenses” have led some courts to require substantial corroboration to enable the defendant to bring an unconsciousness defense); Michael McGrath Duran, Nothing New: Unwrapping the Packaging of Post-Traumatic Stress Disorder, 33 LOY. L. REV. 1076, 1098 (1988) (suggesting that judges and jurors will continue to be wary of fraud in claims of PTSD considering the “subtle diagnostic criteria” and reliance upon defendants’ self-reports).
evidence but thrives nonetheless. It is the jury’s central role to consider and weigh the validity of evidence and the veracity of witnesses, whether lay or expert. Besides, criminal law and evidentiary standards need not, indeed should not, stagnate. When advances in science allow new understandings of human will and behavior, society’s moral values may be better served by evolving standards of criminal culpability.265

Embracing new science does not mean shedding the values that provide the mainstay of our culture and the criminal law—just the reverse is true. There is no clear morals-science division; the two have long influenced each other. Scientific evidence can constrain a wrong-minded legal and moral doctrine in the same way that morals can constrain a wrong-minded legal foray into science. The issue becomes how science, values, and law work together and the joint product they create.266

It is also suggested that when it is an external causative agent that overcomes the internal aspect of the actus reus, true involuntariness is more likely convincing if there is a “long-standing public, professional, or scientific acceptance of the causative agent,”267 such as is the case now with PTSD and soldiers. And unlike other psychiatric diagnoses, PTSD is relatively unique in the DSM by including an external, environmental criterion as a causal factor.268

Further, juries need not be left on their own to ferret out the scientific bases for PTSD-related deficits as negating the involuntary act

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266 Deborah W. Denno, supra note 81, at 608; see also Kaye, supra note 16, at 1172 (noting that advances in understanding human behavior should inform moral judgments of conduct, which conflicts with the compatibilist view of criminal law).

267 Hauhart, supra note 26, at 325; see also N. Wright et al, Post-traumatic Automatism as a Defense to a Serious Criminal Charge, 35 MED. SCI. L. 328, 332 (1995) (contending that a blow to the head type of post-traumatic automatism should theoretically negate responsibility although the neuropsychiatry behind the potential of brain dysfunction is not fully understood); Horn, supra note 77, at 152-56 (using evidence from medical and psychological sciences to support the idea that behaviors done while sleepwalking may not be considered entirely voluntary acts for legal purposes).

268 Wales, supra note 216, at 385; see also Erlinder, supra note 218, at 71 (contending that unlike many other psychological disorders the requirement of external factors as a causal link makes PTSD less a “leap of faith”).
element. Mental health, neurological, and physiological experts can educate courtroom players about the processes that reflect upon an individual’s culpability in ways that may help bridge the gap in legal decisions and are also consistent with scientific theory. With respect to questionable diagnoses, studies have shown improved ability of experts to correctly distinguish malingerers from those who validly suffer from PTSD. Better scientific confirmation processes involving integrating measures of brain, cognitive/behavioral, and autonomic measures are now available to help confirm diagnoses of PTSD. Specifically, neuroimaging is a notable tool with great promise to delineate the etiologies of organic brain injuries.

V. CONCLUSION

The orienting principle of this article is that the *actus reus* (voluntary act) element be reinvigorated as a criminal law principle that actually has substance and meaning. The normative and moral inquiry


271 Erin M. Falconer, *supra* note 9, at 439, 441.

272 A.P. Georgopoulos et al., *The Synchronous Neural Interactions Test as a Functional Neuromarker for Post-Traumatic Stress Disorder (PTSD): A Robust Classification Method Based on the Bootstrap*, 7 J. NEURAL ENG. 1 (2010); Neumeister et al., *supra* note 171, at 155.

273 McLeod et al., *supra* note 109, at 475 (noting difficulties in evidentiary proof that dissociation negates automatism where medical concepts do not always fit well within legal doctrine); Steven K. Erickson, *The Myth of Mental Disorder: Transsubstantive Behavior and Taxometric Psychiatry*, 41 AKRON L. REV. 67, 75 (2008) (noting the tension whereby psychiatry cannot scientifically measure the legal concept of free will, but that recent developments in biological psychiatry have successfully shown that certain psychiatric disorders can erode normal brain operation).

274 As a practical matter, a voluntary act is not likely to be a contested element in a substantial majority of criminal cases, but instead the prosecution will meet its burden
of criminal culpability from philosophical and legitimacy perspectives requires no less. While there may be a rational basis for presuming individuals have free will and can internally choose what they do, modern scientific advances can properly be informative where there is evidence that the actor actually is not freely choosing or controlling his actions. Strengthening the voluntary act requirement here utilizes, as a current and provocative example, the issue of combat veterans as criminal defendants, individuals whom society recognizes as having morally served societal interests by going to war to protect their country. Yet, the unorthodox nature of the Iraq and Afghanistan conflicts have resulted in a high prevalence of PTSD in soldiers with negative consequences continuing after their service. Empirical evidence substantially supports the perspective that the stress of war trauma has impaired the cognitive, physiological, and behavioral functioning of veterans with PTSD to the extent that some of their aggressive actions may be deprived of any internal component of voluntariness, will, or control. If this is true in a particular case, the failure of the voluntary act element to be proven means there is no moral or legal basis for criminal culpability.

See supra notes 13-22 and accompanying text.