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Criminal Law’s Folk Psychological Dilemma: Resolving Neuroscientific and Philosophical Challenges to the Voluntary Act Requirement

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Criminal law has adopted the folk psychological view of human agency. Under this view, voluntary action exists and mental states, such as intentions, goals, and desires, have a causal relationship with bodily movement. However, new advances in neuroscience have begun to challenge this model and have lent empirical support to the idea that mental states may not play a causal role in bodily movement. This has profound implications for the voluntary act element of *actus reus* because the requirement presupposes the folk psychological view of agency. Nevertheless, criminal law can avoid this dilemma through praxeology, the deductive study of human action. This Article demonstrates through the deductive methods of praxeology that voluntary acts exist even assuming that mental states do not cause any bodily movement. Therefore, a praxeological conception of voluntariness in criminal law escapes the potential legal and bioethical dilemmas associated with using folk psychology in the voluntary act requirement. Furthermore, this Article shows that a praxeological theory of action is fully compatible with positive criminal law while still eliminating the possibility of legal voluntariness becoming a meaningless concept.
I. INTRODUCTION

The defendant is a 34-year-old named Mark Smith. The victim was Joanne Johnson, Smith’s ex-wife. After a bitter divorce, Smith spent months plotting to murder Johnson. He agonized over his plans daily, until the thought of killing Johnson eventually consumed him. One day, Smith finally had enough and confronted Johnson at her place of work. Smith furiously grabbed Johnson at her desk and viciously stabbed her 11 times in the chest, killing her on-site. Shortly after, local police arrest Smith and charge him with first-degree murder. The year is 2049.

For Smith to be convicted of first-degree murder, the district attorney must prove that Smith killed Johnson with the intent of ending a human life after planning and deliberation. Here, the district attorney must show that Smith’s stabbing of Johnson was a voluntary act. A voluntary act is defined under the law as a willed bodily movement.1 The district attorney presumes the voluntary act requirement in Smith’s case is plainly satisfied. Smith’s behavior seemed unequivocally willed from the evidence. Extensive video footage showed that Smith was awake. Numerous witnesses testify that Smith was shouting at Johnson while he was stabbing her while exclaiming, “I want you to die.” There were no signs that Smith accidentally lashed out through bodily reflexes or was having a night terror, nor any other evidence to suggest that his behavior was otherwise involuntary. However, Smith’s defense attorneys surprisingly challenge that his behavior was voluntary.

At trial, the defense brings in multiple neuroscientists as expert witnesses. Standing behind a mountain of broadly accepted empirical research and peer reviewed literature, these experts testify that Smith’s feeling of intent or control over his bodily movement prior to stabbing his wife was merely an “illusion.” Employing advanced neuroimaging techniques, these experts develop a computational model of Smith’s mind and illustrate how Smith’s brain determined his physical behavior prior to Smith even forming his intention to

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act. Smith’s feeling of willing his bodily movement did not actually cause his body to move.

Accordingly, the defense asserts that Smith’s stabbing of his ex-wife was not voluntary. Just as if Smith had stabbed his ex-wife while sleep-walking, Smith’s conscious will did not determine his bodily movement. Smith’s feeling of willing the stabbing was merely his mind forcibly rationalizing an already determined bodily movement. These arguments persuade the jury, and the jury finds Smith not guilty of first-degree murder.

Although this hypothetical case may seem like science fiction today, new advances and theories in neuroscience have started to challenge many of the supposed commonsensical truths of human behavior assumed in criminal law. The law has stood dogmatic and complacent, as neuroscience has begun to reconstruct our conception of the mind and its operation. Criminal law has adopted the folk psychological view of human agency. Broadly, the folk psychological view of human agency is the assumption that mental states, such as intention, will, and desire, have a causal relationship with bodily movement. Neuroscience, however, may potentially disprove this folk psychological model, which has profound implications for the criminal law concept of actus reus.

In criminal law, actus reus (or “guilty act”) is one of the essential elements in establishing criminal culpability in American law. Actus reus refers to the physical aspects of a crime and requires a voluntary act or omission. A voluntary act is succinctly defined as a willed bodily movement, and an omission is defined as the failure to engage in a bodily movement where there is legal duty to act. The voluntary act requirement rests on a tenuous folk psychological foundation. Legal voluntariness depends on the idea that the mental state of volition (or will) can cause physical movement or lack thereof. In this Article, the term will refers to the conscious mental state of intending to act that coincides with many bodily movements. In other words, will is the

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2 See Stephen J. Morse, Criminal Responsibility and the Disappearing Person, 28 Cardozo L. Rev. 2545, 2553 (2007) [hereinafter Morse, Disappearing Person].
6 Yaffe, supra note 1, at 175. See Morse & Newsome, Prediction of Criminal Behavior, supra note 1, at 159.
7 See LAFAVE, supra note 5, § 6.2.
8 See infra Part II.
9 See Yaffe, supra note 1, at 175; see also Chris Frith, The Psychology of Volition, 229 Experimental Brain Res. 289 (2013).
feeling or thought of choosing or intending a particular course of action prior to the physical occurrence of that course of action.\(^{10}\) This Article will use the terms will, intention, and volition interchangeably. This Article refers to the immediate intentions that precede action and not to mental states that occur well before one performs an action such as long-term goals and plans to perform an action.

Neuroscience lends empirical support to the idea that mental states may merely be “epiphenomenal.” Epiphenomenalism is the philosophical claim that mental states do not play any causal role in bodily movement.\(^{11}\) If this idea is true, folk psychology falsely describes human behavior. The voluntary act requirement of actus reus could be rendered moot because the element requires that mental states have a causal relationship with bodily movement.

In response to these ideas in neuroscience, this Article will argue that voluntary acts are still possible even if all bodily movement is not caused by any actor’s mental state. Criminal law should justify the possibility of voluntary action through praxeology instead of through folk psychological assumptions. Praxeology is the deductive study of human action pioneered and chiefly constructed by the Austrian economist and philosopher Ludwig Von Mises.\(^{12}\) The methodology uses irrefutable statements regarding human action as its premise and deduction to formulate its theories and ideas.\(^{13}\)

This Article will demonstrate through praxeology that voluntary action is possible under the law, even as to acts where will does not cause bodily movement. This Article will prove this using the “action axiom.” The action axiom states that “human beings act.”\(^{14}\) Praxeological action is defined as “purposeful behavior” or equivalently, willed, intentional, or voluntary behavior.\(^{15}\) This Article will show that the action axiom is true and that willed bodily movement exists even if one assumes that mental states do not play a causal role in any human movement. Criminal law should use praxeology to explain willed bodily movement instead of folk psychology to ward off neuroscientific challenges to the voluntary act requirement.

\(^{10}\) See Judi A. Ellis & J. E. Freeman, Ten Years On: Realizing Delayed Intentions, in PROSPECTIVE MEMORY: COGNITIVE, NEUROSCIENCE, DEVELOPMENTAL, AND APPLIED PERSPECTIVES 1, 14 (Matthias Kliegel et al. eds., 2008).


\(^{13}\) See generally Ludwig von Mises, HUMAN ACTION: A TREATISE ON ECONOMICS (Bettina Bien Greaves ed., 1998) [hereinafter Mises, HUMAN ACTION: A TREATISE ON ECONOMICS].

\(^{14}\) See Rothbard, THE LOGIC OF ACTION ONE, supra note 12, at 58.

\(^{15}\) See Mises, HUMAN ACTION: A TREATISE ON ECONOMICS, supra note 13, at 11, 13; Rothbard, THE LOGIC OF ACTION ONE, supra note 12; Murray N. Rothbard, ECONOMIC CONTROVERSIES 35 (2011) [hereinafter Rothbard, ECONOMIC CONTROVERSIES].
Part II will first explain how the voluntary act requirement of \textit{actus reus} is currently defined and applied and then discuss how voluntary and involuntary actions are distinguished under the law. This Part will also explain how these concepts—voluntary and involuntary—are rooted in folk psychology. Criminal law should not ignore the scientific problems of the folk psychological view of human agency. Although neuroscience undermines the law’s folk psychological claims, it does not undo the voluntary act requirement. If praxeology replaces the law’s folk psychological model of action, criminal law can still rely on the voluntary act requirement.

Part III defines praxeology and provides an overview of its methods. This Part next applies praxeology to \textit{actus reus} assuming that all bodily movement is not determined by mental states and demonstrates that willed action exists independent of any of its causes and determinants. This Part will argue that using praxeology as a theory of action in criminal law escapes the potential legal and bioethical dilemmas associated with using folk psychology to define voluntariness in \textit{actus reus}.

Part IV illustrates through specific legal scenarios and examples that praxeology is fully compatible with contemporary positive criminal law and that incorporating praxeological concepts into the voluntary act requirement will not result in any substantive changes to the law. This Part also raises and ameliorates potential legal or ethical concerns regarding this Article’s reformulation of the voluntary act requirement.

\section*{II. THE FOLK PSYCHOLOGY OF THE VOLUNTARY ACT REQUIREMENT}

\subsection*{A. \textit{Overview of the Voluntary Act Requirement}}

In American criminal law, crimes contain both a mental and physical component.\footnote{LAFAYE, supra note 5, § 5.1.} The mental component of a crime is known as the \textit{mens rea} or “guilty mind.”\footnote{\textit{Id}.} Generally, crimes require a certain state of mind to establish criminal culpability.\footnote{However, for strict liability crimes, “state of mind[s] as to at least one element of the crime is irrelevant.” Mens Rea, LEGAL INFO. INST., http://www.law.cornell.edu/wex/mens_rea (last visited Oct. 2, 2019).} For example, in order to be guilty of the crime of larceny one must have actually intended to deprive another of his or her property. However, thoughts or states of mind alone are insufficient to constitute a crime.\footnote{LAFAYE, supra note 5, § 6.1.}

An individual who merely thinks about stealing and depriving another of property cannot be found guilty of any crime.\footnote{See \textit{id}.} In addition to \textit{mens rea}, crimes
require a “physical component” known as the actus reus. One of the elements of actus reus is the voluntary act requirement which requires (1) the existence of an act or an omission to act and (2) such act or omission must be voluntary.

In the law, an act is generally defined as a bodily movement whether involuntary or voluntary. Returning to the larceny example, the act would be the actual physical taking of another’s property by another. The law defines an omission as a failure to act. In order for an omission to exist under actus reus there must be a legal duty for one to act. For instance, United States federal law describes the circumstances in which citizens owe a legal duty to pay taxes. A failure to pay taxes in accordance with this duty could constitute an omission under the voluntary act requirement.

To satisfy the voluntary act requirement, the criminal act (or omission) must be voluntary. A voluntary act is an intentional or willed bodily movement. Thus, unwilled bodily movements—such as spasms, convulsions, and reflexes—are not treated as voluntary acts. The voluntary act requirement only looks at whether the actor willed the act itself. It does not look at whether the actor expected the consequences of the act.

Further, in order for there to be a voluntary act a defendant must have been reasonably “conscious” or aware and able to understand one’s circumstances and surroundings. Thus, seemingly goal oriented bodily movement such as sleepwalking would generally not be considered a voluntary act.

21 Farrell & Marceau, supra note 4, at 1568.
22 Some commentators treat the term actus reus as synonymous with voluntary act requirement. Id. at 1549–50. However, contemporary criminal law and the Model Penal Code treat actus reus as having multiple elements in addition to voluntary act requirement. Id. at 1549–50, 1568.
23 LAFAVE, supra note 5, § 6.1.
24 Id. (noting that an act must be voluntary); see Farrell & Marceau, supra note 4, at 1575–76 (describing voluntariness requirement of omissions in the law); Morse, Common Criminal Law Compatibilism, supra note 3, at 35; Stephen J. Morse, Lost in Translation? An Essay on Law and Neuroscience, in 13 LAW AND NEUROSCIENCE: CURRENT LEGAL ISSUES 2010, at 529, 530 (Michael Freeman F.B.A. ed., 2011) [hereinafter Morse, Lost in Translation?].
25 See, e.g., MODEL PENAL CODE § 1.13 (AM. LAW INST. 2018).
26 Id.
27 LAFAVE, supra note 5, § 6.2.
28 Id.
29 See Morse & Newsome, Prediction of Criminal Behavior, supra note 1, at 159; see also Yaffe, supra note 1, at 175.
30 Morse & Newsome, Prediction of Criminal Behavior, supra note 1, at 159.
32 Morse & Newsome, Prediction of Criminal Behavior, supra note 1, at 159; see Morse, Lost in Translation?, supra note 24, at 530.
If a defendant was awake and reasonably conscious, courts may presume an individual willed their bodily movement. As explained in State v. Pierson, “[u]ntil something in the evidence indicates the contrary, the court may [constitutionally] presume the defendant intended the prohibited bodily movements that constitute the offense.”

Importantly, a legal voluntary act is a willed bodily movement, not a freely willed bodily. In this way, the legal definition may differ from some common-sense definitions of the word voluntary that are associated with philosophical free will. Philosophical free will is the idea that agents are able to make choices that are at least on some level undetermined or unconstrained by external factors. Actus reus does not require bodily movement that is undetermined by antecedent physical conditions and events. The voluntary act or omission element of actus reus only looks at whether a bodily movement or lack of movement was willed. The element does not look at what determined one to will that action.

Beyond the basic and broad legal idea that a voluntary act is a willed bodily movement, the law vaguely defines voluntariness. The Model Penal Code and some jurisdictions in the United States merely define a voluntary act by what it is not. Nonetheless, one requirement is clear: “mental states,” such as intention, will, goals, and desires, must have some causal relationship with bodily movement for an act to be voluntary. The Model Penal Code and many states see that willed bodily movement is one that is a “product . . . or determination of the actor.” Implicit in this language is the requirement that mental states must determine or cause the bodily movement for it to be willed. This idea is a legal precondition of satisfying the voluntary act requirement.

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33 See Morse, Lost in Translation?, supra note 24, at 548.
34 See, e.g., State v. Pierson, 514 A.2d 724, 728 (Conn. 1986).
35 514 A.2d 724 (Conn. 1986).
36 Id. at 728.
38 See Morse, Common Criminal Law Compatibilism, supra note 3, at 39–41.
39 See MODEL PENAL CODE §§ 1.13–2.01 (AM. LAW INST. 2018); LAFAVE, supra note 5, § 5.1; Morse & Newsome, Prediction of Criminal Behavior, supra note 1, at 159.
40 See Morse, Common Criminal Law Compatibilism, supra note 3, at 39–41.
41 See MODEL PENAL CODE § 2.01 (AM. LAW INST. 2018) (emphasis added); see also LAFAVE, supra note 5, § 5.1.
sum, criminal law’s theory of action is folk psychological. In other words, this theory of action presumes that mental states have some causal relationship with bodily movement.

The folk psychological view of agency is ubiquitous in the law. In order to better illustrate folk psychological conceptions of agency to the reader, this Article examines how causal explanations of behavior are typically given in the law.

First, one should consider the role of mental state causation in the law in order to illustrate the folk psychological view of human agency. Consider a commonplace legal scenario. Jim broke into Sally’s car and removed her radio. In a criminal action, Jim pleads guilty and admits that he broke into her car to steal her radio because he could not afford his own. The reader could ask a lawyer or judge, “So why did Jim break into Sally’s car and take her radio?” A judge or lawyer would say, “Assuming Jim was not lying, Jim broke into Sally’s car and removed the radio because he wanted to steal her radio.” Seemingly, this would be an obvious explanation of Jim’s behavior and would not be second-guessed in a courtroom or in a judicial opinion. This explanation though is also folk psychological. Jim’s bodily movement of breaking into the car and taking the radio was caused by a mental state: Jim’s goal to steal the radio. Jim’s mental state explains the bodily movement.

Furthermore, there is a second layer to the implicit folk psychology described above. Although actus reus is considered the physical or objective component of a crime, the element also presupposes a role of mental states in the voluntary act requirement. Let us consider only the actus reus of the crime, Jim’s physical act of taking the radio, in isolation without reference to his particular goals in acting. We will assume that there is conflicting evidence regarding Jim’s reasoning for taking the radio. We only know with certainty that Jim had an intention to remove the radio from Sally’s car and Jim correspondingly physically removed the radio from Sally’s car. Nevertheless, there is still a legally uncontroversial causal explanation of Jim’s behavior. One could validly causally explain Jim’s behavior by generally stating that Jim had the intention to remove the radio and this intention caused his body to take the radio out of Sally’s car. Even if one did not know specifically why Jim wanted to take the radio, one would know that Jim had at least some mental state of intention to remove the radio and could presume this was causally related to Jim’s bodily movements. This could be another seemingly innocuous folk psychological explanation of Jim’s behavior under the law.

43   See Morse, Disappearing Person, supra note 2, at 2545; see also Stephen J. Morse, Determinism and the Death of Folk Psychology: Two Challenges to Responsibility from Neuroscience, 9 MINN. J.L. SCI. & TECH. 1 (2008) [hereinafter Morse, Death of Folk Psychology].

44   See Morse, Disappearing Person, supra note 2, at 2571–72.
Perfunctorily, explaining Jim’s behavior through folk psychology in either of these examples does not appear problematic. The layperson would probably consider these behavioral explanations as commonsensical truths. Nonetheless, many scientists and philosophers of mind have attacked folk psychology as pre-scientific.45 Deeper theoretical analysis into Jim’s actions can reveal how folk psychological explanations of Jim’s behavior could be scientifically precarious.

Another way to explain Jim’s behavior is “mechanistically,” or in other words, explaining Jim’s behavior through physical events and mechanisms. Jim is a physical entity like everything else in the world. Jim is composed of organs

45 See Morse, Lost in Translation?, supra note 24, at 532. See also Davies, supra note 42, at 113–15.
and tissue, which are composed of cells, which are further composed of chemical compounds. A general mechanistic explanation of Jim’s behavior could be that Jim removed the radio out of Sally’s car because chemical events in Jim’s brain sent signals to Jim’s nervous system causing Jim’s muscles to move. A mechanistic explanation of Jim’s behavior like this is not per se incompatible with a folk psychological explanation of Jim’s behavior. One could say that chemical events in Jim’s brain create mental states and these mental states set in motion the physical events that caused Jim to move. This explanation would effectively be synonymous with saying Jim’s mental state caused Jim to move his body.

However, what if that was not the mechanistic explanation of Jim’s bodily movement? For instance, what if chemical events entirely independent of the chemical events that determined Jim’s mental state determined Jim’s bodily movement? For example, assume that prior to Jim’s mental state forming, separate chemical events set off a chain of events to cause Jim’s body to move. Jim’s body would move whether Jim had a goal of moving his body. These preceding chemical events then influenced the cognitive systems that established Jim’s mental state and caused Jim’s mental state to correspond with the impending and inevitable bodily movement. If such a model of the mind were true, the folk psychological explanation of Jim’s behavior—that Jim removed the radio because he wanted to steal from Sally—would be false.

B. The Neuroscientific and Philosophical Challenges of the Voluntary Act Requirement and the Folk Psychological View of Human Agency

The potential scientific problems with folk psychology extend far deeper than challenging the descriptive and explanatory devices of lawyers and judges. As noted, criminal law makes the folk psychological model of agency a substantive legal requirement of the voluntary act element of actus reus. Therefore, if the folk psychological view of human agency were incorrect, the voluntary act requirement would be rendered an empty and vacuous legal concept that could never be legally established.

The hypothetical mechanistic model of action that undermines folk psychology this Article outlined is not merely a conceptual possibility. Experiments in neuroscience suggest similar models of action with equivalently fatal implications for criminal law’s folk psychology. For example, the famous “Libet experiments” provide an empirical backdrop to the idea that intention and bodily movement could be caused by separate mental mechanisms. In the Libet experiments, the experimenters asked each subject to move a finger at will whenever the subject felt the urge to move their finger. Experimenters attached

47 Id. at 52.
participants to electromyography ("EMG") electrodes on their finger and electroencephalography ("EEG") electrodes on their scalp to measure "readiness potential"—which is the increased electrical activity in the motor portions of the brain that occurs prior to conscious bodily movement. The experimenters also asked participants to report when they experienced an intention or a conscious awareness of wanting to perform a finger movement. The subjects did this by reciting the position of an arm of a nearby clock as soon as the subjects felt a willing to move their right index finger.

The experiment yielded intriguing results. The readiness potential onset occurred before participants even formed an intention to move their finger. Neural activity preceded intention by approximately 350 milliseconds. Libet and his colleagues succinctly stated the takeaway:

It is concluded that cerebral initiation of a spontaneous, freely voluntary act can begin unconsciously, that is, before there is any (at least recallable) subjective awareness that a "decision" to act has already been initiated cerebrally. This introduces certain constraints on the potentiality for conscious initiation and control of voluntary acts.

Figure 2 below provides a visual timeline of Libet’s results.

Figure 2

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48 Id.
49 See id. at 47.
50 Id. at 49.
51 Benjamin Libet et al., Time of Conscious Intention to Act in Relation to Onset of Cerebral Activity (Readiness-Potential): The Unconscious Initiation of a Freely Voluntary Act, 106 Brain 623, 623 (1983).
52 Id.
53 Id.
54 Id.
The Libet experiments were criticized methodologically for the use of “self-reported timing and subjective memory.” For example, Daniel Dennett has clamorously argued that it is unclear whether the Libet experiments actually measured the timing of intention. Dennett argues that in order to say that the Libet experiments measured the intention to move, one must also say that the mind’s visual processing of the clock’s position did not cause any delay in the subject’s time recitation. Dennett writes:

[I]t is quite possible that you were in fact conscious of the decision to flick at the very moment you made it, but it then took you more than 300 milliseconds to move to the vision center and pick up an image of the clock face showing the position of the moving millisecond mark, so you misjudged the simultaneity because you lost track of how long it took you to get from place to place.

In 2008, Masao Matsuhashi and Mark Hallett addressed methodological criticisms surrounding Libet’s reliance on subjective, self-reported timing. Instead of relying on self-reported timing and subjective recall, Matsuhashi and Hallet’s experiments estimated the timing of intention using the subjects’ real-time decisions of whether or not they had an intention to move. In the experiment, experimenters asked the subjects to perform swift finger movement without planning the finger movements. Experimenters asked the subjects to move their fingers immediately whenever they thought about moving their

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57 See Matsuhashi & Hallett, supra note 55.
58 Id. at 2344.
59 See id. at 2345.
fingers. Experimenters played a “stop” tone at pseudo-random intervals. Experimenters asked the subjects to cancel their finger movements if they had an intention to move their finger whenever they heard a tone and to ignore the tone if they did not currently have an intention to move their fingers. The experimenters also recorded the timing of any instances of what Matsuhashi and Hallett called “movement genesis,” or the physiological neural activity that occurs prior to movement. Whenever there was a finger movement, the experimenters recorded any tones that occurred prior to that finger movement. Thus, the experimenters were able to document when the subjects were unaware of their movement genesis. This is because if the subject were aware of the movement genesis after hearing the tone they would have “vetoed” or stopped the finger movement that followed. Matsuhashi and Hallett could then estimate the timing of intention with minimal reliance the subject’s subjective knowledge by measuring the timing of tones that prevented finger movement. Through statistical analysis, Matsuhashi and Hallett found an even longer gap between the readiness potential and the intention to act of one second.

It is not yet clear what the readiness potential that precedes bodily movement precisely is. However, as the social psychologist Daniel Wegner claims, the activity preceding the finger movement could be the cause of bodily movement itself and the intention to move the finger is a separate, non-causal event. This interpretation is temporally consistent with Libet’s findings. Statistically consistent cerebral activity was occurring in the brain prior to the subjects ever thinking about wanting to move their fingers. If intentions cause bodily movements, why was there increased cerebral activity in the brain prior to the subjects even consciously intending to move their fingers? Intention may merely be an epiphenomenal mental event.

If intentions do not cause bodily movement, as these experiments may suggest, the folk psychology of criminal law is wrong. One can mechanistically explain action in a way inconsistent with folk psychological explanations of action. The experiments that show that intention could be the stepping-stones for

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60 Id.
61 Id.
62 Id. at 2346.
63 Id. at 2344.
64 Id. at 2348.
65 See id. at 2344.
66 Id.
67 Id. at 2344.
68 See id. at 2345–49.
69 See generally WEGNER, supra note 46.
70 See id.
a legal conundrum similar to the murder case hypothetical in the introduction of this Article. The experiments create an empirical possibility of expert witnesses one day being able to disprove seemingly obvious legally voluntary acts. As the voluntary act requirement presumes the folk psychological view of agency as a matter of substantive law, the voluntary act requirement may eventually come into legal question in a way contrary to common sense.

Nevertheless, some legal scholars have addressed criticisms of the law’s folk psychology and have attempted to defend its use. For example, Stephen Morse has polemically attacked theoretical challenges to folk psychology. Morse has argued that these challenges are merely empirically unsupported intellectual musings:

Given how little we know about the brain-mind-action connections, to claim based on neuroscience that we should radically change our picture of ourselves and our legal doctrines and practices is a form of neuroarrogance . . . . It is possible that we are not agents and that mental states are epiphenomenal, but the current science does not remotely demonstrate this is true. The burden of persuasion is firmly on the proponents of the radical view. There is simply no present justification for concluding that the foundation of folk psychological view of agency upon which criminal law is based is incorrect. 71

Of particular issue to criminal law, Morse has expressed concern that the Libet and similar experiments involved arbitrary and unplanned finger movements that may be irrelevant to criminal law. Some scholars have argued that the findings of these studies are not generalizable for all human behavior. Morse has asserted that the empirical support for readiness potential preceding intention for deliberated and planned behavior is much weaker. He argues that the “trivial” behavior of the Libet paradigm experiments “is a far cry from the behavioral concerns of the criminal law or morality, which address intentional conduct in contexts when there is always good reason to refrain from harming another or to act beneficently.” 72

This position is wrongheaded. Criminal law is not only concerned with carefully crafted and deliberated behavior as Morse implies. Criminal law also deals with arbitrary and “trivial” behavior that is similar to the behavior studied in the Libet paradigm experiments.

Traffic law illuminates this assertion. Every day, drivers engage in bodily movement that is not thoroughly planned or conducted with particular, conscious scrutiny. Habitual driving often involves little thoughtful decision making in a manner similar to simple tasks, such as rapid arbitrary finger

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71 See Morse, Common Criminal Law Compatibilism, supra note 3, at 44.
72 Morse, Death of Folk Psychology, supra note 43, at 31.
movement. Nevertheless, drivers are still subject to traffic laws and criminal sanctions. Although \textit{mens rea} is generally not an element of most traffic laws, all criminal traffic laws incorporate \textit{actus reus} and the voluntary act requirement. As demonstrated in Part I, the voluntary act element of \textit{actus reus} requires folk psychology. For bodily movement to be willed, it must be of the determination of the actor’s intention. Even if we accept the idea that the challenges to folk psychology only hold for “trivial” behavior, the folk psychological presumption embedded in the voluntary act requirement is still tenuous. For example, one could potentially show that behavior analogous to rapid finger movements such as speeding or running red lights are not bodily movements caused by intention and correspondingly are not voluntary acts. All areas of criminal law that involve these types of acts could become conceptually moot. The legal implications for criminal law are decisively problematic.

Morse has also specifically attacked the Libet experiments and the possible inferences that scholars such as Wegner have suggested on non-methodological grounds.\footnote{Id. at 29–31.} Morse and other defenders of folk psychology aver that simply because neural activity precedes intention this does not mean intention does not cause bodily movement.\footnote{See id.} This claim is facially plausible: an alternative interpretation of the cerebral activity that preceded the subjects’ intentions could be the neural events that cause both the bodily movement and the intention.

However, these arguments are wrong in an important respect. Just as though the fact that neural activity precedes intention alone does not conclusively show that intention does not cause bodily movement, it also does not conclusively show that intention causes bodily movement. Why should the burden of persuasion wholly fall on critics of folk psychology as Morse suggests? In fact, a 2008 non-Libet paradigm experiment conducted by the neuroscientist Chun Siong Soon and his colleagues suggests that the burden of persuasion should fall on proponents of folk psychological view of agency because it empirically challenges the presumed causal relationship between intention and action. In this experiment, the researchers instructed the subjects to freely decide to press one of two buttons.\footnote{Chun Siong Soon et al., \textit{Unconscious Determinants of Free Decisions in the Human Brain}, 11 \textit{Nature Neuroscience} 543 (2008).} Unlike the Libet paradigm experiments, this experiment monitored brain activity using functional magnetic resonance imaging (“fMRI”). Using data from the fMRI, the researchers found that activity in the frontopolar and parietal cortex regions of the brain had “considerable information” that could predict with 60\% accuracy which button the subjects would press seven to ten seconds prior to the subject’s conscious
intention to press a button. The study suggests that unconscious mental activity that occurs well in advance of the intention may be determinative of future action. As the researchers concluded, “this suggests that when the subject’s decision reached awareness it had been influenced by unconscious brain activity for up to 10 [seconds].” If the folk psychological claim that intentions cause bodily movement were true, this is a peculiar result. Given the statistically significant relationship between unconscious brain activity prior to intention and bodily movement, this study provides empirical evidence that unconscious brain activity prior to intention could be a confounding variable in the commonly presumed causal relationship between intention and action. Thus, the relationship between intention and action may be spurious. Unconscious brain activity may be causing both the action and the intention, which leads to the correlation between bodily movement and intention.

Furthermore, folk psychology depends upon our intuitive understandings and assumptions about ourselves that our intentions cause our actions. However, we do not know if these assumptions are true. These assumptions are not true only because one cannot conclusively show they are false. We arrive at these assumptions because we infer mental state causation from precise conjunction of intention and bodily movement that we observe in daily life. Certainly, intention and bodily movement are highly correlated, but correlation alone does not imply causation. This inference is reinforced in our minds by the feeling of “doing” or causing our actions when we act. However, there is evidence in psychology that our introspective assumptions about how other people causally operate can be systematically misguided. These systematic biases of understanding ourselves further indicate that the burden of persuasion actually falls upon the proponents of folk psychology.

For example, the psychological theory of apparent mental causation shows the feeling of causing action should not buttress folk psychology. The theory states that “people experience conscious will [or the feeling of ‘doing’ or causing our actions] when they interpret their own thought as the cause of their action.” The feeling of doing is not a “direct readout of some psychological force that causes action from inside the head.” The feeling of causing action is not an observation of cause, but an apparent perception of cause. Experiments

76 See id. at 546.
77 See id.
78 Id.
80 See Wegner, supra note 46, at 64.
81 See id. (emphasis omitted).
82 Id. at 65.
have shown that people can be readily deceived into feeling their mental states have caused an action when in fact they played no causal role.\footnote{See id. at 74.} Phantom limb experiences are well-known examples of how the feeling of causing bodily movement can only be apparent.\footnote{See V. S. Ramachandran & William Hirstein, The Perception of Phantom Limbs, 121 BRAIN 1603, 1607 (1998).} Individuals with amputated limbs often experience sensations of voluntarily causing their missing body part to move even though their body part is not there and obviously could not have moved.\footnote{See id.; WEGNER, supra note 46, at 40.}

In addition, the theory of naïve realism provides evidence that our introspective conceptions of ourselves are systematically skewed and that the law should be skeptical of folk psychology.\footnote{See Davies, supra note 42, at 121.} The theory states that (1) “[w]e tend to assume that we see things in an unmediated and objective manner” even when we do not; (2) “[w]e tend to assume that other rational persons will see things as we do”; and (3) “[w]e tend to dismiss those who disagree as ignorant, slothful, irrational or biased.”\footnote{See id.} If we apply this idea to the folk psychological view of agency, the nature of the truth of mental states causing bodily movement becomes suspect. We believe that our intentions cause our bodily movements because our perceptions tell us that we caused our bodily movements. We form these understandings because we see correlations between our intentions and our bodily movements, and our intentions give us the feeling that we are causing our bodily movement. These subjective observations do not necessarily comport with objective truth. Despite this, we treat what we subjectively observe as objective reality even though we have no evidence for this other than our feelings and intuitive understandings.

Moreover, we take these subjective understandings of ourselves and apply them to others. We assume that because we feel that intentions cause our body to move, this must also be true for others. Our only basis for this assumption is through our own subjective feelings. This systematic bias of objectivity also affects how we interpret challenges to our common-sense beliefs. We are systematically skeptical of ideas regarding the causal origins of bodily movement that contradict our intuitions. These biases cause us to believe that the burden of proof should fall on critics of folk psychology. Yet because this assumption about the burden of proof is derived from psychological biases, we should in fact take the position that is opposed to our intuitive assumptions about our behavior. If our goal is to find the truth about legal voluntary action in an objective manner, then we need to counter our introspective biases. The law cannot idly acquiesce to folk psychology because there is not conclusive proof that is not true. The evidentiary burden of proof falls upon folk psychology. Proponents of the folk
psychological view of agency must demonstrate that this view is true in order to conclude that it is true.

In sum, criminal law cannot ignore the growing challenges to folk psychology. The voluntary act element of actus reus requires folk psychology as matter of substantive law. Although neuroscience does not yet conclusively show that folk psychology is wrong, neuroscience has created an empirical basis for the possibility that mental states play no causal role in bodily movement. Folk psychology relies on introspective assumptions about human beings that are systematically skewed. Consequently, the burden of persuasion falls on advocates of folk psychology. This idea and developments in neuroscience show that the law should be skeptical about its use of folk psychology in the voluntary act element of actus reus. Although all is not lost for the proponents of the voluntary act requirement and willed bodily movement. Advocates of these legal ideas do not need to rely on or prove folk psychology if praxeology is used instead.

One can demonstrate the possibility of willed bodily movement without using or defending folk psychology through praxeology. As alluded to in the introduction of this Article, praxeology can show that willed bodily movement exists without reference to the causal origins of action. Given this is possible, criminal law should eschew folk psychological agency as a precondition of the voluntary act requirement.

III. PRAXEOLOGY AND THE VOLUNTARY ACT REQUIREMENT

A. The Action Axiom

Praxeology is the deductive study of human action. Praxeology begins with irrefutable statements regarding action and reality as premises and uses deduction to formulate theories and ideas. The philosopher and Austrian economist Ludwig Von Mises was the chief architect of the methodology. Austrian Economics is a school of economic thought that studies the purposeful actions of human beings, and praxeology is one of the distinctive methodologies in the discipline. Praxeology has been infrequently applied to disciplines outside of economics. However, as this Article demonstrates,
praxeological ideas can be validly applied to legal issues, and praxeology can resolve the law’s folk psychology and voluntary act debate.

A core tenet of praxeology is the action axiom.94 The action axiom states that “human beings act”; human beings employ means aimed at willed and desired ends.95 Praxeological action encompasses voluntary acts and omissions under the law. Voluntary acts or omissions under the law are defined as intentional or willed behavior.96 Equivalently, praxeological action is willed, purposeful, intentional, or voluntary behavior.97 It is the act of willing and [the] choosing of means.98 Praxeological action is a “manifestation of a man’s will.”99 Thus, alternatively, the action axiom states, “human beings engage in willed behavior.” Hereinafter, this Article will refer to praxeological action as merely “action.”

Voluntary acts or intentional bodily movements, which exclude unwilled, reflexive behavior, are a category of action. As Austrian economist Murray Rothbard wrote, action is “sharply distinguishable from those observed movements which, from the point of view of man, are not purposeful. These include all the observed movements of inorganic matter and those types of human behavior that are purely reflex, that are simply involuntary responses to certain stimuli”.100

Further, the action axiom applies not only to voluntary acts in the law, but also voluntary omissions. A voluntary omission is a type of action. A willed choice to not engage in bodily movement is still a willed choice where the action axiom applies. Mises carefully illustrates this point:

To do nothing and to be idle are also action, they too determine the course of events. Wherever the conditions for human interference are present, man acts no matter whether he interferes or refrains from interfering. He who endures what he could change acts no less than he who interferes in order to attain another result. A man who abstains from influencing the operation of physiological and instinctive factors which he could

94 See id.
95 Id.
96 See supra Part I.
100 Rothbard, Economic Controversies, supra note 15, at 15.
influence also acts. Action is not only doing but no less omitting to do what possibly could be done.101

The action axiom is a true “a priori synthetic proposition” and a logically irrefutable truth.102 This section shall overview the analytic-synthetic and a priori-a posteriori distinctions in philosophy to explicate this claim.

An analytic proposition is a proposition where the predicate concept is contained in its subject concept.

These statements are true by definition104 and the means of formal logic alone is sufficient to establish their truth.105 For example, “Frozen water is ice”; “Bachelors are unmarried men”; “Two halves make up a whole” are each true by definition.106 These statements do not give information about anything outside of the grammatical and semantic structure of the statements.

By contrast, in a synthetic proposition the predicate concept is not contained in its subject concept.107 Synthetic propositions state something outside of the sentence itself and are not true merely by virtue of the language used. Thus, the action axiom that human beings are able to act purposively is a synthetic proposition because it is not inherently true by definition. The predicate concept of “being able to act purposively” is not synonymous with the subject concept of “human beings.”

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101 MISES, HUMAN ACTION: A TREATISE ON ECONOMICS, supra note 13, at 11.
102 See generally HANS-HERMANN HOPPE, ECONOMIC SCIENCE AND THE AUSTRIAN METHOD (1995). The economist and philosopher Murray Rothbard rejected the “a priori” label of the action axiom:

Whether we consider the Action Axiom ‘a priori’ or ‘empirical’ depends on our ultimate philosophical position. Professor Mises, in the neo-Kantian tradition, considers this axiom a law of thought and therefore a categorical truth a priori to all experience. My own epistemological position rests on Aristotle and St. Thomas rather than Kant, and hence I would interpret the proposition differently. I would consider the axiom a law of reality rather than a law of thought, and hence ‘empirical’ rather than ‘a priori.’

Murray N. Rothbard, In Defense of “Extreme Apriorism”, 23 S. ECON. J. 314, 317–18 (1957) [hereinafter Rothbard, Extreme Apriorism]. However, he notes, “this type of ‘empiricism’ is so out of step with modern empiricism that I may just as well continue to call it a priori for present purposes.” Id. at 318. Nonetheless, the differences between the views of Rothbard and Hoppe on the action axiom’s epistemology are primarily terminological and their views of the action axiom’s epistemology are substantively similar. See generally Gennady Stolyarov II, The Compatibility of Hoppe’s and Rothbard’s Views of the Action Axiom, 10 Q. J. AUSTRIAN ECON. 45 (2007).

104 Id.
105 HOPPE, supra note 102, at 17.
In addition, there is a further distinction: *a priori* vs. *a posteriori.* This Article adopts Hans Herman Hoppe’s conception of the *a priori* vs. *a posteriori* distinction. Under this view of the distinction, the truth of *a priori* statements are justifiable independent of verification or falsification of observational experience, while the truth value of *a posteriori* statements depends upon the verification or falsification of observational experience. Notably, this description of the distinction differs from Immanuel Kant’s classical interpretation of the *a priori* that holds that *a priori* propositions are justifiable independent of all experience. Here, *a priori* knowledge is still derived from experience broadly, but includes knowledge derived at least in part from inner experience and self-reflection. Thus, under this Article’s conception of the distinction, *a priori* synthetic statements are statements that are not merely true by definition and cannot be justified solely based on observation. Given this, *a priori* synthetic statements are those propositions where the means of formal logic are necessary but not sufficient and verifiable or falsifiable observational experience is unnecessary to establish the proposition’s truth. Therefore, these are propositions where “one cannot deny their truth without self-contradiction; that is, in attempting to deny them one would actually, implicitly, admit their truth.”

The action axiom is a true *a priori* synthetic proposition since (1) its truth cannot be established through formal logic alone because the action axiom is not true by definition; and (2) verifiable or falsifiable observational experience is unnecessary to establish the action axiom’s validity because the action axiom can be justified independently of verifiable or falsifiable observational experience. The axiom’s truth exists in the fact that any attempt to refute the truth of the action axiom presupposes the axiom’s truth. In order to say, “Humans do not

109 Rothbard differed from Hoppe noting that he “would consider the axiom a law of reality rather than a law of thought, and hence ‘empirical’ rather than ‘a priori.’” Rothbard, Extreme Apriorism, supra note 102, at 318. However, he notes, “it should be obvious that this type of ‘empiricism’ is so out of step with modern empiricism that I may just as well continue to call it *a priori* for present purposes.” Id. The difference between Rothbard’s and Hoppe’s position is primarily terminological.
110 See HOPPE, supra note 102, at 17–18, 24–25. See STOLYAROV, supra note 102, at 56–57.
111 See STOLYAROV, supra note 102, at 56–57.
112 See id. at 53; see also HOPPE, supra note 102, at 19.
113 See HOPPE, supra note 102, at 17–18.
114 Id. at 18.
115 Id. at 22.
116 Id. at 64.
act willfully"¹¹⁷ one must act willfully. In order to refute the idea, one must necessarily have the goal or intention to refute the idea and employ means towards the goal of refuting the idea. In the attempt to refute the action axiom, the means are the bodily movements that produce the spoken or written words. Any attempt to refute the action axiom is by logical necessity a willed action. Nothing can disprove the statement that humans act willfully because any attempt to disprove or falsify it would result in a logical contradiction known as a performative contradiction. As the axiom’s truth can be justified independently of experimentation or verifiable or falsifiable observations, no observation can possibly falsify the action axiom.¹¹⁸ In this sense, the action axiom is necessarily true and logically irrefutable.

Importantly, as the epistemological position this Article takes, knowledge of the action axiom is derived from experience of reality broadly: the internal experience of reason and self-reflection one undertakes to understand the action axiom.¹¹⁹ This differs from Mises’s possible idealistic conception of the action axiom. Mises may have, as some have interpreted him, believed the action axiom as a priori to all experience and thus believed the action axiom was solely a law of the mind and not of objective reality (outside the mind).¹²⁰ The typical criticism of this view and the traditional, orthodox Kantian view of a priori synthetic propositions is that if a priori synthetic propositions are solely laws of the mind, it could not be explained why these laws would also need to be laws of reality.¹²¹ One would have to rely on the idealist assumption that reality is a creation of the mind to claim a priori knowledge expresses anything about reality.¹²² Therefore, to avoid having to make this assumption, this Article asserts the position that the action axiom is not merely a law of thought but a “law of reality” since understanding it is only derived from one’s experience in interacting with the real world.

B. The Compatibility of the Action Axiom with Epiphenomenalism

The action axiom is true and logically irrefutable whether folk psychology correctly and causally describes human behavior or not. A simple hypothetical can illuminate this. Let us return to the legal murder hypothetical

¹¹⁷ Given the multiple meanings of the term “willfully” in the law, it is important to clarify that the term willfully as used in this Article is merely a different conjugation of the word “willed.” In this Article, acting willfully means engaging in willed behavior or praxeological action.

¹¹⁸ See Hoppe, supra note 102, at 24.

¹¹⁹ Rothbard, The Logic of Action One, supra note 12, at 63–64.

¹²⁰ Rothbard, Extreme Apriorism, supra note 102, at 317–18. But see generally Hoppe, supra note 102; Stolyarov, supra note 102.

¹²¹ Hoppe, supra note 102, at 69.

¹²² Id.
outlined the introduction of this Article. However, in returning to this hypothetical we will presume the law dispenses of substantive legal requirement of folk psychology for the voluntary act element of *actus reus*. For this hypothetical, we will also assume that neuroscience shows that all mental states are epiphenomenal, not just Smith’s mental states in killing Johnson. Nevertheless, even under the assumption that mental states are epiphenomenal, Smith’s defense could never negate the *actus reus* of Smith’s killing of Johnson by labeling his intention epiphenomenal, nor could they logically state that there is no such thing as a willed bodily movement. For example, if Smith’s defense team were to say, “The voluntary act requirement of *actus reus* can never be established. Voluntary acts as willed bodily movements do not exist. Humans do not act willfully because of X,” where “X” is any argument that the defense could hypothetically present. Applying the framework of Part II, any argument Smith’s defense makes would be a willed behavior and a self-contradictory argument.

Suppose Smith’s defense attorney tries to rebut this idea by arguing that the intentionality of his refutation was illusory. This argument would be futile under praxeology. The attorney could charge, “I did not truly act intentionally; a cognitive mechanism determined the fact that I would say those words. My apparent intentionality was merely a post-rationalization of my conscious of this mechanism just as Smith’s stabbing of Johnson was.” However, even if this were true, it would not change that the defense’s refutation was an intentional act and bodily movement.

To demonstrate this, this Article formulates a mechanistic explanation of action that is consistent with voluntariness studies described in Part I for this hypothetical. For this hypothetical, the hypothetical defense team of Smith’s case adopts this same mechanistic model for action. We will assume intention occurs after the brain has determined bodily movement in this hypothetical. Here, bodily movement will be entirely independent of intention. Intention in this hypothetical will simply conform to the mechanism that determines bodily movement after-the-fact and play no causal role in bodily movement.

For this mechanistic model of action, let Mechanism 1 represent the cognitive mechanism that begins a causal chain that independently determines Smith’s attorney’s outward bodily movement and actual statement of the denial of the action axiom. Let Mechanism 2 represent the causal impetus of the attorney’s intention or end to refute the action axiom. First, Mechanism 1 sets in motion a causal chain that determines the attorney’s words “man does not act” prior to Mechanism 2 even forming the intention to refute the action axiom. After Mechanism 1 is in motion, Mechanism 2 responds to Mechanism 1 and causes Smith’s attorney to form the intention to refute the action axiom. Smith’s attorney then utters the words, “Man does not act.” The act of speaking these words was entirely undetermined by Mechanism 2 and only determined by Mechanism 1.
Even under this framework, the attorney still engaged in voluntary action. The structure of the hypothetical action was exactly as Mises described the necessary structure of action: the attorney employed means, the statement “Humans do not act willfully,” aimed towards a desired end, the intention to refute the action axiom.

The defense attorney though may further argue, “I did not choose or aim my means, the means were chosen before I even willed them.” However, the attorney did choose his means. He formed an intention to rebut the action axiom through the words “Humans do not act willfully,” and the subsequent physical act was the act that he chose: he made a choice. The bodily movement that occurred was the actual bodily movement that was willed internally. The bodily movement of the refutation was willed. Even if the critic’s intention did not actually cause the physical manifestation of the refutation the critic still willed and intended the physical act of the refutation. The structure of action is the same whether or not intention determined the physical act.
Suppose the attorney responds to the argument by asserting that he only had an intention to refute the action axiom because his mind was merely rationalizing an already determined bodily movement. This argument though would be misplaced and irrelevant to the action axiom’s truth. It does not matter that Mechanism 2 changed the attorney’s intention in response to the impending physical manifestation generated by Mechanism 1. The causes of the choice of man’s desires are irrelevant. It was still the attorney’s will no matter what caused him to will that action. Praxeology and the action axiom do not require some sort of metaphysical free will as this hypothetical argument implies. Even if some other mechanism other than intention determined man’s choice and desired end it was still a choice: a voluntary, willed action. Mises shared this view:

Praxeology is not concerned with the metaphysical problem of free will as opposed to determinism. Its fundamental insight is the incontestable fact that man is in a position to choose among different states of affairs with regard to which he is not neutral and which are incompatible with each other, i.e., which he cannot enjoy together. It does not assert that a man’s choice is independent of antecedent conditions, physiological and psychological. It does not enter into a discussion of the motives determining the choice. It does not ask why a customer prefers one pattern of a necktie to another or a motorcar to a horse and buggy. It deals with the choosing as such, with the categorical elements of choice and action.\textsuperscript{123}

A willed bodily movement is not necessarily a freely willed bodily movement. As Part I argued, criminal law does not require freely willed action only willed action. The determined or undetermined origins of voluntary acts are thus irrelevant questions for this Article and Smith’s hypothetical case. Smith’s defense team could not deny the action axiom without false and self-contradictory statements no matter how they model or explain action.

This Article demonstrates that willed bodily movement exists even if we presume that the folk psychological conception of action is universally false for all human behavior. \textit{Actus reus} does not require folk psychology to aver voluntary action. Criminal law should adopt praxeology as a theory of action. Furthermore, as Part III demonstrated, praxeology is fully compatible with positive law.

\textbf{IV. THE COMPATIBILITY OF PRAXEOLOGY AND POSITIVE CRIMINAL LAW}

The praxeological proof that willed action exists independent of its underlying causes is fully compatible with positive criminal law. The law

\textsuperscript{123} \textsc{Ludwig von Mises, Money, Method, and the Market Process} 19 (1990).
maintains that thoughts alone cannot constitute a crime. A skeptic of praxeology in the law could inquire the following: “If bodily movements are not the result of mental states, doesn’t actus reus merely become an element of thought?” This skepticism would be misguided. As described in Part I, actus reus contains both an act (or omission) and voluntariness requirement.124 Criminal law can dispose of the folk psychology requirement of voluntariness and keep the act element of actus reus. Acts can be involuntary or voluntary.125 Thus, folk psychology is not a requirement of the “act” element of voluntary act requirement.

The skeptic though could further ask, “What if an act exists simultaneously with the mental state of intention such that the act was uncaused by the intention, but the act precisely corresponded with the intention?” The reader should consider the following hypothetical situation to elucidate this skeptical view. A skeptic may posit the following situation: individual A wills a rock to fall on individual B’s head such that he believes his will would cause a rock to fall on B’s head in same way he believes his will causes his own bodily movement. Coincidentally, a rock falls on individual B’s head. However, the rock fell on individual B’s head for reasons completely independent of any thought or prior or current physical movement of Individual A. Under the law, the individual’s actions would not be a crime given only this information. How then is this distinguishable from individual A willing to throw rock at individual B and a mental mechanism separate from his will throws the rock at individual A? Both acts would not be caused by intention.

First, an act is a bodily movement. Even if individual A formed an irrational intention of performing an act that was the psychological equivalent to an intention of an actual bodily movement, there was no bodily movement to constitute an act under the law. Second, removal of mental state causation from actus reus does not imply removal of any other form of legal causation. In the latter case, individual A actually threw a rock at individual B; individual A actually caused the act. But for individual A’s bodily movement, B would not have been hit on the head by the rock. Although a mechanism of his mind other than his will caused the act, his mind and body nonetheless still caused the action.

Praxeology does not vitiate any existing legal ideas. If we remove folk psychology from actus reus and reframe voluntariness through praxeology nothing in positive law would change. This Article does not advocate dispensing of any other legal idea other than the folk psychological theory of action in voluntary act requirement of actus reus. The only aspect of the law that would change is that a praxeological conception of action would eliminate the possibility of legal voluntariness becoming a meaningless concept. As asserted in Part II, praxeological action is substantively equivalent to voluntary acts and

124 See supra Part I.
125 See, e.g., LAFAVE, supra note 5, § 5.1.
omissions in the law. The behaviors currently considered voluntary acts and omissions under the law would be the same using praxeology.

V. CONCLUSION

Praxeology gives criminal law a way to reconcile voluntariness with neuroscience. The law can preserve its core ideas without relying on potentially skewed assumptions regarding bodily movement. Praxeology does not need to answer the question of how action is caused or determined. The ideas of praxeology are true without making any assumptions about human psychology and the origins of bodily movement.

The causal nature of action is still an open question. The fact that it is an open question though does not mean we can assume that the intuitive assumptions about the relationship between our mind and our body are true. Folk psychology may be disproven. Neuroscientific advancements are increasing the probability that folk psychology is false. If the law adopts praxeology as theory of action in *actus reus*, the legal concept can be preserved no matter what is eventually discovered about the nature of action.

If the law adopts praxeology as a theory of action, the moral and legal dilemma of Smith’s case in the introduction of this Article would never arise. Smith’s case would have a decisively different outcome. As Part II demonstrated, even if Smith’s defense team was able to show that Smith’s mental states did not cause Smith’s bodily movements in stabbing Johnson, this would be irrelevant in determining whether Smith willed his stabbing. Smith irrefutably willed to stab Johnson. The action produced by Smith’s body was the action Smith intended and willed, whether or not Smith’s intention caused the actual bodily movements associated with his actions. This is an *a priori* and irrefutable truth. Any denial of the intentionality of Smith’s behavior would be a contradiction of the action axiom. Society would never have to fear that an iniquitous crime like Smith’s would be unaddressed by the law because of a failure to establish *actus reus* on the grounds of a lack of mental state causation.

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126 *See supra* Part II.