



PHILOSOPHICAL FOUNDATIONS OF

Law and Neuroscience

EDITED BY
Dennis Patterson
& Michael S. Pardo

OXFORD

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OF LAW AND NEUROSCIENCE

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Edited by
DENNIS PATTERSON
and
MICHAEL S. PARDO

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Introduction to *Philosophical Foundations of Law and Neuroscience*

Dennis Patterson and Michael S. Pardo

In recent years, the field of law and neuroscience—also known as ‘neurolaw’—has grown at an astonishing pace. A decade ago the field consisted of some intriguing and speculative possibilities, but neurolaw now constitutes a major focus of interdisciplinary research throughout the world.¹ Part of the explanation for this growth is the concomitant growth of the brain sciences themselves, and the emergence of new technologies to gather ever-more precise information about the brain.² Another part of this explanation is the fact that so much in the law depends on issues relating to the mind and mental states, the nature of human action and agency, and decision making. These issues are precisely the ones that neuroscience—particularly, cognitive neuroscience³—purports to illuminate in astonishing detail. In short, the rapid expansion of neurolaw follows from two claims: (1) neuroscience provides powerful new evidence about the brain, the mind, and human action; and (2) this evidence is relevant and highly probative for issues throughout the law. The first claim is undoubtedly true, although numerous conceptual and empirical issues within this domain—including what inferences may be drawn from the evidence—are, like most fields, uncertain or highly contested.⁴ The second claim provides the primary domain for the many promises and challenges of law and neuroscience. Debates about whether and how neuroscience may inform legal issues raise a host of empirical, practical, doctrinal, ethical, and theoretical issues. These debates animate the rapidly growing field of

¹ A brief history of the early development of neurolaw as a field is provided in Oliver R. Goodenough & Micaela Tucker, *Law and Cognitive Neuroscience*, 6 ANN. REV. LAW SOC. SCI. 61, 63–65 (2010). An informative overview of the current state of the field (including publications, programmes, and conferences) may be found on the website of the MacArthur Foundation Research Network on Law and Neuroscience: <http://www.lawneuro.org/index.php>. See also OWEN D. JONES ET AL., LAW & NEUROSCIENCE (2014).

² For an excellent introduction, see A PRIMER ON CRIMINAL LAW AND NEUROSCIENCE (Stephen J. Morse & Adina L. Roskies eds., 2013).

³ Most neurolaw discussions involve the branch of neuroscience known as ‘cognitive neuroscience’, which focuses on the relationships between neurological features and mental processes related to perception, memory, decision making, action, belief, and emotion. MICHAEL S. GAZZANIGA ET AL., COGNITIVE NEUROSCIENCE: THE BIOLOGY OF THE MIND (2013). This branch overlaps to a large extent with cognitive psychology, among several other fields. The potential connections to law follow from the important roles that these mental processes play throughout the law.

⁴ See, e.g., Ralph Adolphs, *The Unsolved Problems of Neuroscience*, 19 TRENDS COG. SCI. 173 (2015); R.A. Poldrack, *Can Cognitive Processes be Inferred from Neuroimaging Data?*, 10 TRENDS COG. SCI. 59 (2006).

law and neuroscience, and they are a primary focus of the philosophical discussions in this volume.

The potential relevance of neuroscience touches virtually every conceivable issue within the law. This is not mere hyperbole. To the extent that neuroscientific evidence reveals insights about the mind, decision making, and human behaviour, these insights may provide useful information for explaining, justifying, critiquing, or improving the law's efficacy and applications in any of its domains. Notwithstanding this broad potential reach, it is not surprising that much of the focus of neurolaw to date has been on criminal law. Mental states and the degree of control and voluntariness that attend to actions play significant roles in ascriptions of criminal responsibility. The perceived fit between these issues and neuroscientific investigations—along with the high stakes at issue in the criminal law—make this major focus on the part of neurolaw understandable. But many neurolaw issues generalize beyond or apply outside of criminal law; these issues involve, for example, other doctrinal areas such as torts, property, contracts, and intellectual property; general issues dealing with evidence and procedure; and theoretical issues pertaining to legal, moral, and economic decision making. The chapters in the book follow a similar trend, with several focusing in detail on issues within criminal law, but there are also discussions addressing other doctrinal areas, issues in evidence and procedure, and general theoretical issues pertaining to mind, decision making, and action.

Although neuroscience may inform issues throughout the law, exactly how it might do so varies depending on the issue. We think the following taxonomy provides a useful framework for categorizing the various claims and arguments about how neuroscience may apply to a legal issue: (1) proof, (2) doctrine, and (3) theory. In the first category (legal proof), the law identifies some fact as relevant to an existing legal category or the resolution of a legal dispute, and neuroscience (it is claimed) is relevant for resolving the question whether this fact obtains or not. In this category, for example, are issues such as whether a witness is lying or whether a criminal defendant acted voluntarily, with a culpable mental state, or satisfies the requisite criteria for an insanity defence in a particular jurisdiction. Importantly, neurolaw claims in this category are not about *changing the law*; they are about improving the application of already-established legal categories.⁵

The second category (legal doctrine) involves arguments about how neuroscientific information (it is claimed) is relevant for explaining, justifying, or, more often, critiquing and improving legal doctrine. Claims in this category are typically about *changing the law* by changing the criteria the law uses for resolving legal disputes and guiding behaviour. In this category, for example, are issues about the criteria used for ascribing criminal responsibility,⁶ how to characterize compensable injuries in

⁵ The claims are thus similar to those made with regard to DNA evidence and criminal convictions. The development of DNA technologies has had a transformative effect on the criminal law by improving the reliability by which its existing categories are applied. Some advocates claim that one way in which neuroscience may have a positive effect on the law is by providing it with more reliable evidence than currently exists.

⁶ Arguments aimed at the criteria for criminal responsibility may focus on the category as a whole (e.g. by claiming that all ascriptions are based on faulty criteria) or by focusing on the criteria for a particular issue such as *mens rea*, voluntary action, or insanity.

tort law (e.g. mental injuries or chronic pain), and how certain constitutional rights should be applied (e.g. the Fifth Amendment privilege against self-incrimination). Neurolaw claims in this category typically proceed by arguing that current legal doctrine relies on assumptions or premises that neuroscience reveals as mistaken or faulty.

The third category (legal theory) involves arguments about how neuroscience (it is claimed) contributes to highly abstract theoretical issues with implications for law. Some of these issues include: free will, action, mind, knowledge, intent, morality, economic decision making, legal reasoning, and theories of criminal punishment. As with the second category, neurolaw claims in this third category typically proceed by arguing that neuroscience is relevant for proving or undermining a key premise or assumption at issue in theoretical debates in these areas.

Although we think this taxonomy is useful for clarifying the different ways in which neuroscience might inform the law, we note two complexities. First, the issues within these categories often interact with issues in other categories in complicated and unforeseen ways. For example, the desirability of a doctrinal category will depend, in part, on the availability of evidence on the issues, the ease or difficulty with which it may be proven, and the reliability of decision makers to assess the evidence and apply the categories. Or, for another example, one's views about the legitimacy of and justifications for legal punishment will influence one's views about the doctrinal categories used to ascribe criminal responsibility (and perhaps also the evidence that is used for such purposes). Second, many neurolaw discussions reflect these complex interactions. Some neurolaw arguments fall neatly into the categories of proof, doctrine, or theory, but others involve issues at all three levels and the interactions among them.

The varied and complex interactions between law and neuroscience require careful attention from those on both the science and law sides. The title of this volume suggests an obvious question, nevertheless: what role(s) should *philosophy* play in these interactions? We suggest that the answer to this question may not be obvious. It might be thought, for instance, that of the three-part taxonomy we outlined above (proof, doctrine, and theory), philosophy has a role to play only with regard to issues in the third category. In other words—so the thought would go—philosophical reflections will be relevant only when neuroscience is being used in debates over extant philosophical theories with potential implications for law (such as theoretical debates about free will, criminal punishment, or morality). Such a view, we contend, is mistaken. Philosophy is indeed relevant for such theoretical issues—but it is also relevant and has important roles to play at the levels of proof and doctrine, as well as with issues relating to the interactions among these levels. The chapters in this volume demonstrate the valuable roles that philosophy can play for issues at all three levels. The issues discussed from a philosophical perspective involve: (1) theoretical issues about the nature of mind, free will, morality, rationality, knowledge, consciousness, emotions, action, criminal punishment, and legal reasoning, among others; (2) doctrinal issues about *mens rea*, insanity, volitional control, negligence, tort injuries, and the privilege against self-incrimination, among others; and (3) evidentiary proof issues pertaining to lies and lie-detection, scientific expert testimony, mind-reading and proving mental states, and mitigating evidence in criminal sentencing, among others. Some

of the chapters focus on issues in one of these categories; others draw on issues from different categories and their interactions. As a whole, these chapters well illustrate the important conceptual issues that arise for neurolaw at the levels of proof, doctrine, and theory, and they demonstrate the practical significance for law that careful philosophical attention to these issues can provide.

We now turn to the chapters that comprise this book.

Neurolaw has many points of intersection with philosophy. The first obvious point of contact is philosophy of mind. Is the mind reducible to the brain? If it is, then what is the status of mental states? Are they epiphenomenal or does supervenience preserve a role for the mental? The relationship of mind to brain ramifies in several areas of law. Neurolaw also intersects with the topic of free will. If we live in a world where everything is caused, and materialism is the proper approach to mind and mental states, then perhaps we need to rethink the way we conceptualize responsibility. Adam Kolber ('Free Will as a Matter of Law') confronts this issue directly, rejecting one of the leading views of the relationship between free will and legal responsibility on the ground that the current system of legal responsibility likely emerged from outdated views about the mind, mental states, and free will.

Stephen Morse ('The Inevitable Mind in the Age of Neuroscience') argues that free will is not a presupposition of the criminal law, or any other area of law, and thus causal determinism about mental states and actions (whether illuminated by neuroscience or not) does not undermine legal responsibility. Hence, people who question whether there can be free will in a causal world are simply making a mistake. Morse, in other words, defends a 'compatibilist' position for law (in which free will and causal determinism can coexist) and he argues that legal responsibility depends on the degree to which we are responsive to reasons. For these reasons, he concludes that neuroscience does not pose any global challenges to legal responsibility and is unlikely to undermine the law's conceptions of mind, mental states, and action any time soon.

Kolber, rather than directly endorsing a version of incompatibilism (in which causal determinism undermines both free will and legal responsibility) or directly rejecting the coherence of Morse's compatibilism, seeks to reframe the question. Kolber argues that those who initially developed the criminal law did not have anything like Morse's compatibilist reconstruction in mind but rather endorsed or presupposed views about mind (e.g. substance dualism) and free will (e.g. freedom from all causal constraints) that modern neuroscience will aid in revealing as false. Kolber then argues for the relevance of these false presuppositions embedded in the original development of the criminal law in judging whether to revise or maintain the current system. In arguing for the relevance of such presuppositions, Kolber shares the view that neuroscientific developments will change the way we think about criminal responsibility. A related view was initially advanced in a much-discussed article by Joshua Greene and Jonathan Cohen.⁷ It is a position that is now widely held or one to which many people are at least open. Kolber maintains that if the criminal law arose and developed because

⁷ See Joshua Greene & Jonathan Cohen, *For the Law, Neuroscience Changes Nothing and Everything*, 359 PHIL. TRANSACTIONS ROYAL SOC'Y LONDON B 1775 (2004).

of false presuppositions about mind and free will, then the criminal law stands in need of wholesale revision. Morse demurs, arguing that those advocating for wholesale revisions in the law's folk psychological system for ascribing responsibility have yet to deliver concrete results. The debate remains open.

What does neuroscience tell us about human freedom? Similar to Kolber, Nita Farahany ('A Neurological Foundation for Freedom') also seeks to reframe the neuro-law discussions involving free will, mind, and action. Specifically, Farahany wants to shift from traditional debates regarding determinism to the question of whether freedom of action (i.e. the ability to bring about an intended action) is a sufficient ground for responsibility. Farahany confronts both the reductionist tendencies of many scholars who see neuroscience as displacing our 'folk psychological' vocabularies and what she describes as Stephen Morse's 'consequentialist justification' of the criminal law. Farahany defends freedom of action as sufficient for legal responsibility and argues that neuroscience (with the aid of technologies such as brain-machine interface) will demonstrate that freedom of action exists and will help to reveal its nature and its limits.

Deborah Denno ('The Place for Neuroscience in Criminal Law') also believes that advances in neuroscience will have far-reaching effects on the criminal law. Culpability is central to judgments of responsibility. Because culpability depends on an individual's mental states, Denno argues that neuroscientific advances will necessarily motivate wide-ranging changes to assessments of culpability and, as a consequence, significantly alter the law's conception of responsibility for action. In her contribution to this volume, Denno calls for a new theory of mental states, one that is rooted in brain science, to replace the 'outmoded psychology of mental states' on which the current criminal-justice system is based. Denno also cautions against the scepticism some courts and commentators have shown towards neuroscientific evidence, arguing that it should be treated like other types of scientific evidence.

Frederick Schauer ('Lie-detection, Neuroscience, and the Law of Evidence') also questions some of the scepticism shown towards neuroscientific evidence. Schauer focuses on the example of neuroscience-based lie-detection from the perspective of the policies and epistemic norms underlying the law of evidence and legal proof. Schauer makes the case that in some instances neuroscientific evidence is superior to forms of evidence (scientific and non-scientific) routinely admitted in legal proceedings. In analysing whether neuroscientific evidence should be admitted or excluded in legal proceedings, Schauer asks the important question: 'compared to what'? Excluding neuroscientific evidence in order to base decisions on evidence that may be more epistemically problematic (e.g. eyewitness identifications, bite-mark and handwriting analyses, and so on) appears to run afoul of the law's evidentiary principles and goals. In making his case, Schauer also emphasizes the extent to which the epistemic norms and standards at issue involve fundamentally *legal* and not just *scientific* questions (e.g. about how the risk of error should be allocated).

The interface between law and neuroscience is shot through with big philosophical questions. We have already canvassed the views of several contributors on the question whether the law presupposes free will. A similarly large topic is the theory of mind presupposed by the law. Rene Descartes proffered the view that the mind is

an incorporeal substance connected to the body by the pineal gland. This 'substance dualism' or 'Cartesian' theory of mind is nearly universally rejected as a proper account of mental life. Yet, as Dov Fox and Alex Stein ('Dualism and Doctrine') argue, remnants of this theory of mind remain entrenched in legal doctrine in torts, criminal law, and constitutional criminal procedure. In their contribution, Fox and Stein make the case that neuroscience reveals that dualism is both conceptually bankrupt and empirically flawed. As other contributors argue, advances in neuroscience are putting pressure (or worse) on existing legal doctrines in ways that will force much-needed change. Fox and Stein provide an alternate account of human action, one that avoids the errors of dualism without compromising the law's goals in these areas, and they suggest changes to correct the doctrine accordingly.

Gideon Yaffe ('Mind-reading by Brain-reading and Criminal Responsibility') explores whether neuroscience can provide 'mind-reading' evidence that may be useful for legal proceedings. After exploring different conceptions of 'mind-reading', he argues that neuroscience may indeed provide a type of epistemically robust evidence of mental states that differs in kind from the usual behavioural, psychological, and cultural evidence used to infer mental states. According to Yaffe, neuroscientists may discover how a mental state is 'realized' in the brain, and, therefore, evidence of whether the 'realizer' is present or absent will provide evidence of whether a mental state is present, without reliance on the other forms of behavioural, psychological, or cultural evidence that might be used to infer mental states. After outlining this possibility of 'mind-reading', Yaffe goes on, however, to discuss several important limitations on such evidence, arguing that it could not be used to infer past mental states, future mental states, or capabilities regarding mental states. He concludes by noting one area where such 'mind-reading' evidence could be particularly probative in law: inferring the mental states of those with a variety of disorders for whom other types of evidence (e.g. behaviour) may be an unreliable guide.

Consciousness has been a big topic in philosophy of mind as well as in law and neuroscience. In her contribution to this volume, Katrina Sifferd ('Unconscious *Mens Rea*: Lapses, Negligence, and Criminal Responsibility') considers arguments by Neil Levy for the proposition that direct conscious awareness is a prerequisite for responsibility. Sifferd rejects this view, arguing that it is rooted in a defective conception of the self. Sifferd situates her views within a diachronic conception of the self. Negligence law provides a good example. We hold tortfeasors liable not only for what they were directly aware of, but what they should have been aware of. Forgetting your child locked in a hot car or forgetting to latch the gate that keeps your aggressive dog at bay are just two ordinary examples where the law locates responsibility for action of which we are not directly aware. Sifferd argues that the puzzle over responsibility is nested in a larger debate about the nature of the self that we (and the law) hold responsible.

As we have explained, many 'big ideas' permeate discussions of law and neuroscience. In his contribution, Michael Moore ('The Neuroscience of Volitional Excuse') brings together many big philosophical topics involving the mind, free will, action, morality, causation, and metaphysics in discussing the topic of volitional excuse. Ranging across psychology, philosophy, and neuroscience, Moore argues that the primary way to think about volitional excuses is in terms of counterfactual analyses.

There is no simple move from neuroscience to a judgment about volitional excuse. Working through the possible counterfactuals in any given case cannot be avoided simply by focusing on neuroscientific data. The process is shot through with judgments about the degree to which the agent in question ‘could have done otherwise’. Scientific discoveries from neuroscience, he contends, will not preclude the counterfactual inquiry and the difficult philosophical work it entails. Moore sees a role for neuroscience, of course. But it is limited and, as yet, underdeveloped.

When scholars raise questions about extravagant claims regarding the power of neuroscience to change the way we think about law, they open themselves up to being labelled as ‘sceptics’. Your editors have attracted this characterization, and our contribution to this volume (‘The Promise of Neuroscience for Law: “Overclaiming” in Jurisprudence, Morality, and Economics’) will only reinforce this view.⁸ We consider the claims made on behalf of neuroscience in three areas: legal philosophy, emotion and moral judgment, and economics. We argue that reductionist claims made for the explanatory power of neuroscience are simply not demonstrated in these areas. Neuroscience, at least so far, tells us nothing of import in the area of legal philosophy. With respect to moral judgments, there are many interesting claims made about the roles of emotion, but we are not convinced that neuroscientific data about the brain provides answers to the difficult normative questions. Finally, even if neuroscience can tell us where in the brain one finds the neural correlates of economic decisions, we question whether this information answers any normative questions about rationality or economic reasoning.

The chapters in this volume are state-of-the-art works in a field that is rapidly growing. The synthesis of philosophy, psychology, and neuroscience produces a rich palette of argumentative and explanatory possibilities for law. We are confident that the arguments and positions developed here will sustain debate and spur further inquiry.

⁸ Of course, ‘sceptic’ is just a label and whether it fits depends on what one means by it. We maintain that we are not sceptics, if this is meant to apply to one who denies that neuroscience has anything of value to contribute to law. Rather, we take issue with what appear to us to be examples of either overclaiming or conceptually problematic arguments based on applications of neuroscience to law.

Free Will as a Matter of Law

*Adam J. Kolber**

Introduction

In our early years, our choices seem free of the laws of physics. When we pick juice over milk, it feels like we could have selected otherwise in a manner unconstrained by the forces of the universe. After our early years, we learn that we, too, are physical objects, composed of billions of particles that have interacted since the beginning of time to make us take the precise actions we do in the precise circumstances we find ourselves.

When we discover that we are not unmoved movers but mere human beings with brains and bodies governed by the laws of physics, we need to dramatically revise our beliefs. Upon reflection, we are apt to decide that either: (1) as free will sceptics claim, we are never morally responsible because all of our choices are determined by physical processes beyond our control; or (2) as compatibilists claim, we do not need some kind of grand causal control of our actions to nevertheless be morally responsible.¹

Philosophers have long sought to untangle such issues, but their analyses obviously do not have the force of law. Legal cases and statutes say little about free will directly, but we can make some safe assumptions about the intent of the crafters of Anglo-American law. Most likely, they were neither free will sceptics nor compatibilists. Rather, they believed in ‘soul-based libertarianism’, a term I use to loosely describe views in which people have souls that make decisions in ways not governed (or not governed exclusively) by laws of physics.² Such views of human

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¹ By ‘free will sceptics’, I mean those who deny or at least strongly doubt the existence of the kind of free will that can make us morally responsible. By ‘compatibilists’, I mean those who believe that moral responsibility can still exist even in a universe where all events are determined by physical processes beyond our control. Most physicists today believe the universe is indeterministic, JOHN MARTIN FISCHER ET AL., *FOUR VIEWS ON FREE WILL 2* (2007), meaning that genuinely random events can occur. But even if some events are random, we still have no control over those events. Hence, the key issue is whether we can ever be morally responsible in a world, like ours it seems, in which our actions can be explained by physical processes (whether deterministic or not) that are beyond our control.

² I use the expression ‘soul-based’ to distinguish the kind of libertarianism the law may embody from more sophisticated versions that are still taken seriously in philosophical circles. See Robert Kane, *Libertarianism*, in Fischer et al., *supra* note 1, at 5–43. Notice, too, that the meaning of ‘libertarianism’ in free will debates is quite distinct from its meaning in the political realm.

agency, now generally frowned on by both scientists and philosophers, have infused the law for centuries. Indeed, many people still implicitly or explicitly hold these sorts of libertarian views.³ Because the criminal law was and perhaps continues to be crafted by soul-based libertarians, it was plausibly never intended to punish people who make decisions in the mechanistic manner scientists now take to characterize human choice.

Philosophers actively debate whether laypeople's views about free will should inform philosophical questions,⁴ but there is no debate that the intent behind legislation and court decisions can bear on legal questions. There is some debate about whether intent *should* bear on legal questions,⁵ but as a matter of actual law, it often does. Since intent matters, it matters that our criminal justice system has been infused with the intent to punish people for choices made in a manner that, according to the modern scientific view, never actually occurs. Hence, one plausible reading of the criminal law is that it is out of date and needs to be updated.⁶

Stephen Morse and Paul Litton offer an alternative, compatibilist interpretation of criminal law. On their view, defendants can be punished because they can be responsible for their actions even if they are not responsible for all of the causes that make them act. Such an interpretation is consistent with the criminal law in the sense that no significant body of cases or statutes clearly contradicts it. But given that the intent underlying the criminal law is quite possibly at odds with their compatibilist interpretation, its mere consistency with cases and statutes provides a relatively weak *legal* reason to adopt it. If there is any weighty argument in favour of the compatibilist interpretation, it derives from highly contested policy or philosophical grounds about the nature of free will that have been debated for centuries.

To the extent that the philosophical debate is likely to remain unsettled, arguments about the current state of the law take on increased importance. And the view that the criminal law was never intended to apply to mechanistic humans is at least as plausible as, if not more plausible than, the view that the law was intended to punish

³ A growing body of research examines laypeople's views about free will and responsibility, though the studies are sometimes conflicting. See, e.g., Lisa G. Aspinwall, Teneille R. Brown, & James Tabery, *The Double-Edged Sword: Does Biomechanism Increase or Decrease Judges' Sentencing of Psychopaths*, 337 SCIENCE 846 (2012); Thomas Nadelhoffer & Eddy Nahmias, *Neuroscience, Free Will, Folk Intuitions, and the Criminal Law*, 36 T. MARSHALL L. REV. 157 (2011); Felipe de Brigard, Eric Mandelbaum, & David Ripley, *Responsibility and the Brain Sciences*, 12 ETHICAL THEORY AND MORAL PRAC. 511 (2009); Adina L. Roskies & Shaun Nichols, *Bringing Moral Responsibility Down to Earth*, 105 J. PHIL. 371 (2008); Shaun Nichols & Joshua Knobe, *Moral Responsibility and Determinism: The Cognitive Science of Folk Intuitions*, 41 NOÛS 663 (2007); John Monterosso, Edward B. Royzman, & Barry Schwartz, *Explaining Away Responsibility: Effects of Scientific Explanation on Perceived Culpability*, 15 ETHICS & BEHAV. 139 (2005).

⁴ According to Peter van Inwagen, "The value of [experimental philosophy] surveys depends on how the questions they contain are framed, how those surveyed have been "primed", and the order in which the questions are asked—a consideration that is borne out by the inconsistent results of the surveys". Peter van Inwagen, *Free Will. Thirty Points of View*, 2 METHODE 212, 217–18 (2013). Even if the survey results were clear, their relevance to philosophical questions is still open to debate. See *id.* at 218. But cf. Joshua Knobe & Shaun Nichols, *An Experimental Philosophy Manifesto*, in EXPERIMENTAL PHILOSOPHY 3 (Joshua Knobe & Shaun Nichols eds., 2008) (defending experimental philosophy).

⁵ See ANTONIN SCALIA, A MATTER OF INTERPRETATION: FEDERAL COURTS AND THE LAW 16–18 (1997).

⁶ In this chapter, I expand on claims I made in Adam J. Kolber, *Will There Be a Neurolaw Revolution?*, 89 IND. L.J. 807, 820–27 (2014).

in a compatibilist fashion. While this conclusion is unlikely to lead courts to actually change the law any time soon, I end by discussing ways in which courts could adapt the criminal law without relying on the compatibilist escape hatch.

I. The Soul-Based Libertarian Interpretation of Criminal Law

Jaroslav Flegr, a Czech scientist, has argued for decades that a surprisingly large number of people have been infected by a parasite carried by certain cats that causes toxoplasmosis. He believes the parasite remains dormant in people's brains even after symptoms of acute infection disappear and subtly affects brain function for years to come.⁷ As one journalist describes Flegr's views, the 'parasite may be quietly tweaking the connections between our neurons, changing our response to frightening situations, our trust in others, how outgoing we are, and even our preference for certain scents'.⁸ The parasite may also 'contribute[] to car crashes, suicides, and mental disorders such as schizophrenia'⁹ in ways that may be killing 'at least a million people a year'.¹⁰

Flegr's views have started to receive increased attention from mainstream researchers.¹¹ But whether or not he is right,¹² his research raises the following question: Suppose a person is, without fault, infected by a parasite that alters his brain function. Assume it does not make him insane or even diagnosably mentally ill, but it changes his personality in ways that make him more careless, impulsive, aggressive, and tempted by criminal behaviour. Should we hold him responsible for crimes he would not have committed but for the parasitic infection?

On one view, he should not be held fully responsible because he is not responsible for being infected and, had he not been infected, he would not have engaged in criminal behaviour. Indeed, if you or I were infected, we might have engaged in the very same behaviour. You and I, one might argue, would not deserve punishment for behaviours caused by an unforeseen and unwanted infection.

On another view, we all act in ways determined by features of ourselves for which we are not responsible. Most notably, we have limited, if any, control over our genes and the environments in which we were raised. So another powerful intuition pushes us in the other direction. Merely being subject to the causal influence of factors beyond our control cannot excuse our conduct because then none of us would be responsible for anything. Surely you and I are sometimes responsible, one might argue, as when we deserve credit for our brave and heroic deeds.

⁷ See, e.g., Jaroslav Flegr et al., *Increased Risk of Traffic Accidents in Subjects with Latent Toxoplasmosis: A Retrospective Case-Control Study*, 2 BMC INFECTIOUS DISEASES 11 (2002).

⁸ Kathleen McAuliffe, *How Your Cat is Making You Crazy*, THE ATLANTIC, 6 February 2012, at 38 available at <http://www.theatlantic.com/magazine/archive/2012/03/how-your-cat-is-making-you-crazy/308873/2/>.

⁹ *Id.* ¹⁰ *Id.* (quoting Flegr). ¹¹ *Id.*

¹² For recent doubts, see Karen Sugden et al., *Is Toxoplasma Gondii Infection Related to Brain and Behavior Impairments in Humans? Evidence from a Population-Representative Birth Cohort*, 11 PLOS ONE PMID: 26886853 (2016).

A. The 'reduced responsibility' reaction

Here is one possible explanation of why those with parasite-infected brains seem less-than-fully responsible: the more we know about the 'mechanistic' causes of a person's behaviour—the causes of a person's actions framed in terms of the movement of particles or the firing of synapses (and so on)—the less inclined we are to hold the person fully responsible. I call this the 'reduced responsibility' reaction. Knowledge of mechanistic causation frequently weakens our intuitions that a person is responsible, even when the mechanistic causes are unrelated to traditional excusing conditions like duress or insanity.¹³

So, for example, one might have a reduced responsibility reaction sparked by growing evidence that preschool lead exposure explains much of the soaring crime rates from the 1960s through the 1980s.¹⁴ Or one might have such a reaction to causal stories of antisocial behaviour sparked by debilitating migraines or severe premenstrual symptoms. Detailed explanations of the physiological causes of behaviour sometimes reduce ascriptions of responsibility even when traditional excusing conditions are irrelevant.

Yet those who subscribe to the scientific, mechanistic view of the universe should find the reduced responsibility reaction unreliable as a general matter. If the world is mechanistic, *some* mechanism explains every human action. Whether we happen to *know* the mechanistic causes of a person's action is irrelevant to his actual level of responsibility.¹⁵ Nevertheless, the reduced responsibility reaction may explain why the debate about free will has persisted for centuries: Our intuitions point us to a conclusion that lacks a sound theoretical justification.

Leading theories of free will address the reduced responsibility reaction in opposite ways. *Free will sceptics* say that the reduced responsibility reaction does not go far enough. If knowledge of a partial causal back story reduces our ascriptions of responsibility to some degree, then a full causal back story ought to eliminate our attributions of responsibility entirely, whether we know the back story or not. In other words, one might conclude that free will does not really exist, and we should not hold people morally responsible.

¹³ While I think this is a plausible empirical claim, there may be other more accurate or comprehensive explanations. See *supra* note 3; see also T.M. SCANLON, WHAT WE OWE TO EACH OTHER 278–79 (1998) (arguing that we are often reluctant to attribute actions to people caused by sudden, temporary shifts in their personalities due, for example, to a head injury or a psychoactive medication).

¹⁴ See, e.g., Rick Nevin, *Understanding International Crime Trends: The Legacy of Preschool Lead Exposure*, 104 ENVTL. RES. 315, 333 (2007).

¹⁵ According to Stephen Morse, people succumb to the 'fundamental psycholegal error' when they believe that merely being caused to take some action provides a traditionally recognized legal excuse for doing it. See, e.g., Stephen J. Morse, *Brain Overclaim Syndrome and Criminal Responsibility: A Diagnostic Note*, 3 OHIO ST. J. CRIM. L. 397, 399 (2006). The reduced responsibility reaction may be an intermediate step on the way to the fundamental psycholegal error, but those who have the reduced responsibility reaction do not necessarily think a defendant should have a *complete* excuse. (I also refrain from calling the reaction an error to allow for revisionary efforts to justify some aspect of it. For example, on some views of free will, the reduced responsibility reaction looks less like a complete error and more like a partial correction.)

Some may be drawn to free will scepticism by Peter van Inwagen's consequence argument:

If determinism is true, then our acts are the consequences of the laws of nature and events in the remote past. But it is not up to us what went on before we were born, and neither is it up to us what the laws of nature are. Therefore, the consequences of these things (including our present acts) are not up to us.¹⁶

The consequence argument seems to work just as well even if determinism is false: surely we cannot control the outcomes of random subatomic processes any more than deterministic subatomic processes. Hence the consequences of our acts do not seem 'up to us'. The ability to freely choose X arguably implies the ability to choose not-X. But if we cannot alter the forces that cause us to choose X, then it is not clear we really could choose not-X, and it is not clear we really have the kind of control over our choices necessary for moral responsibility.

Returning to the parasite example, the free will sceptic would say that those infected are not responsible for the behaviour the parasite causes them to take because none of us are ever genuinely responsible for our actions. There may still be good reasons to punish people or detain them, but their responsibility for their actions is not one of them.

Alternatively, one might say that the reduced responsibility reaction itself goes too far. If partial knowledge of a causal back story inclines us to reduce ascriptions of responsibility, such reactions cannot be trusted for they imply that full causal knowledge would eliminate attributions of responsibility entirely. And responsibility plays such an important role in our daily lives that we ought not to dismiss it too quickly. Indeed, according to compatibilists, responsibility is consistent with the modern scientific worldview because what makes our choices free is that they arise from us in some important way, whether or not they were also caused by the actions of particles in the universe. Michael Moore describes the classical compatibilist view, often traced to David Hume, as follows:

[W]e are at liberty—free—whenever our choices (or intentions) cause the actions chosen (intended). We have the *power* needed for responsibility, the *ability*, the *free will*, whenever our choices cause what we choose them to cause because we made those choices. This is a compatibilist sense of these terms, because the causation of actions by our choices to do those very actions is quite compatible with such choices themselves being caused by factors outside our control. On this version of compatibilism, being a causer in no way requires that one be an uncaused causer.¹⁷

In the parasite hypothetical, a compatibilist would seek to know the details of the infection. Does the parasite interfere with the human host's rationality? Does it create urges that are impossible for him to resist? To the compatibilist, the mere fact that the

¹⁶ PETER VAN INWAGEN, AN ESSAY ON FREE WILL 16 (1983).

¹⁷ Michael S. Moore, *Stephen Morse on the Fundamental Psycho-Legal Error*, 10 CRIM. L. & PHIL. 45, 69–70 (2016).

parasite causes a person to take actions that he would otherwise resist is irrelevant to the person's responsibility, so long as the parasite leaves intact his ability to reason, decide in accordance with his values, or satisfy some other compatibilist criterion that purportedly allows us to identify a choice with a particular person rather than just the motion of particles in his brain.

B. The law's dualistic view of mind and brain

Under the modern scientific worldview, we live in a physical universe. The universe is composed of atoms and other matter that follow physical laws. In principle, human choices and actions can be explained in terms of the interaction of matter in the universe, including the matter in our brains. Free will sceptics believe that the mechanistic nature of the universe leaves no room for free will, while compatibilists believe it does.

The law does not obviously adopt either approach. Indeed, the law says little if anything explicitly about the nature of free will in the sense that concerns us here.¹⁸ At least on its surface, the law treats people as morally responsible, invoking notions of retribution in criminal codes and at sentencing. But, it seems, the law has never explicitly tried to square responsibility with the mechanistic nature of the universe.

Criminal law has evolved over many centuries, likely influenced by ancient views of human agency that were quite different than those of modern science and metaphysics. For long stretches of recorded human history, at least in much of the world, we have understood humans as having souls separate and apart from their physical bodies. At 'the time of Socrates' death—[the] soul is standardly thought and spoken of, for instance ... as something that is the subject of emotional states and that is responsible for planning and practical thinking, and also as the bearer of such virtues as courage and justice'.¹⁹ In Plato's influential account, 'each of us has a soul that is simple, divine, and immutable, unlike our bodies, which are composite and perishable'.²⁰ Our souls were thought to make us 'the kind of conscious, intelligent, and rational creatures that we are'.²¹ Many people today believe in souls of one sort or another, and they play a role in many religions.

Since souls are often understood to be somehow separate and apart from the physical world, they are not constrained by the physical world in the way that most objects are.²² Rather, souls can somehow be first causes, not entirely dependent on the

¹⁸ Courts sometimes use the expression 'free will' simply to mean that a choice was not coerced, but such use is separate from the metaphysical question of free will. Cf. Stephen J. Morse, *Compatibilist Criminal Law*, in *THE FUTURE OF PUNISHMENT* 120–21 (Thomas A. Nadelhoffer ed., 2013) (stating that many lawyers and judges speak as though free will is directly addressed by the criminal law but 'when they use the locution it is simply a confused proxy for the conclusion that some culpability doctrine was or was not present').

¹⁹ Hendrik Lorenz, *Ancient Theories of Soul*, in *STANFORD ENCYCLOPEDIA OF PHILOSOPHY* (2009).

²⁰ JAEGWON KIM, *PHILOSOPHY OF MIND* 2 (1998).

²¹ *Id.* at 2–3.

²² Belief in souls is closely related to dualist views of mind and brain. According to classical dualists, 'human beings consist of two distinct elements: a physical body, which occupies and moves in space, and a non-physical mind, which thinks and feels'. R.A. DUFF, *INTENTION, AGENCY, AND LIABILITY: PHILOSOPHY OF ACTION AND THE CRIMINAL LAW* 116 (1990).

physical world and this view or something like it may well have been dominant during the many centuries in which Anglo-American criminal law evolved (and may still dominate the minds of legislators today).

I do not purport to engage in a careful historical analysis here. I frame my claims in terms of the plausibility of various arguments, and I recognize that the relative plausibility of my claims depends on a more detailed historical investigation into the likely beliefs and intentions of the law's crafters in different jurisdictions over a very long time. But if nothing else, the religious traditions of those who crafted the criminal law and continue to craft it today make it at least plausible that the criminal law is rooted in a view of free will that is at odds with modern science and metaphysics.²³

Though criminal codes do not speak explicitly about free will, courts occasionally issue pertinent remarks. In the nineteenth-century case of *Maier v. People*,²⁴ the Supreme Court of Michigan seemed to reveal an underlying libertarian view of free will. In deciding whether some kind of provocation, such as learning of a spouse's adultery, should mitigate the murder of the spouse to a less severe manslaughter conviction, the court said that the circumstances must be such that their 'natural tendency' is to put even a reasonable person into a heated emotional state that would interfere with his reasoning.²⁵ Importantly, the circumstances need only tend to cause the requisite state of upset because it need not be 'such a provocation as must, by the laws of the human mind, produce such an effect with the certainty that physical effects follow from physical causes; for then the individual could hardly be held morally accountable'.²⁶ Perhaps *Maier* could be given a compatibilist interpretation as well, but at least on its face, it seems to say that we are not responsible for our actions when they are caused mechanistically. In other words, the case suggests that when our behaviour is caused by a mere physical process, we cannot be held morally or legally accountable at all.

The libertarian views reflected in *Maier* may well have their roots in ancient common law doctrines, and one might wonder whether such views still matter today in a place like the United States where criminal law has been codified into statutes that are periodically updated by legislators.²⁷ While it is certainly possible that the law has divested its ancient metaphysics, I doubt it for two reasons. First, there is no explicit evidence that the codification of the criminal law in any way revised or retreated from the views of human agency that came before it. If the law's underlying views of human agency changed at some point, we would plausibly expect the criminal law to overtly recognize the change. Silence supports the view that the law continues to be rooted in soul-based libertarianism.

Second, the libertarianism I attribute to the law's crafters appears to be popular today. Some research, albeit conflicting, suggests that many or most of us still have

²³ Cf. Dov Fox & Alex Stein, *Dualism and Doctrine*, 90 IND. L.J. 975 (2015) (arguing that the law pervasively separates mind and body); DUFF, *supra* note 22, at 116 ('[M]any jurists assume a *dualist* view of the mind, portraying intentions as private mental states or occurrences which must be inferred from external behavior.').

²⁴ 10 Mich. 212 (1862).

²⁵ *Id.* at 220–21.

²⁶ *Id.* at 221 (emphasis omitted).

²⁷ PAUL H. ROBINSON & MICHAEL T. CAHILL, CRIMINAL LAW 51 (2d ed. 2012) ('Nearly every state has a criminal code—a relatively comprehensive statutory enactment—as its primary source of criminal law.').

libertarian views about free will,²⁸ likely rooted in some kind of dualism about mind (or soul) and brain. In one recent study, 75 per cent of college students in the United States deemed moral responsibility incompatible with determinism.²⁹ So too in the other three countries that were part of the study: India (72%), Hong Kong (63%), and Colombia (68%).³⁰ On the assumption that subjects were generally not free will sceptics, many of their views likely reflect some kind of soul-based libertarianism.

As Daniel Dennett colourfully describes our dualistic tendencies, 'Many people still cling, white-knuckled, to a brittle vision of our minds as mysterious immaterial souls, or—just as romantic—as the products of brains composed of wonder tissue engaged in irreducible noncomputational (perhaps alchemical?) processes'.³¹ Indeed, even some neuroscientists and philosophers, Dennett claims, 'are at least subliminally attracted to the idea that somehow or other the dynamic properties of neural tissue can do something you might call miraculous, something that harnesses hidden forces undreamed of by science'.³²

As a thought experiment, imagine we surveyed current judges and legislators across the country and asked, 'Do you think people's choices result from brain processes that follow the same laws of nature that govern things? Or do you think their choices result from decisions made in their minds or souls that are not strictly governed by laws of nature?' In truth, I do not know what the result would be. But it is quite possible, perhaps even probable, that most would opt for the choice we would expect of soul-based libertarians.

Indeed, the authors of a popular criminal law casebook claim that the criminal law continues to be premised on the view that human choices are not governed by physical laws:

We tend to regard a person's acts as the product of his or her choice, not as events governed by physical laws. This view (roughly, the hypothesis of free will and the rejection of determinism) is of course hotly contested in philosophical literature. But whether accurate or not, the assumption of free will reflects the way most people in our culture respond to human action, and it reflects, most importantly, the premise on which notions of blame in the criminal law ultimately rest.³³

It is possible that legislative and judicial silence on free will is meant to delegate such issues to courts and future legislatures. But the suggestion so far has *not* been that the

²⁸ See *supra* note 2.

²⁹ Hagop Sarkissian et al., *Is Belief in Free Will a Cultural Universal?*, 25 MIND & LANGUAGE 346, 352 (2010). The study focused on the threat to responsibility from determinism, while I focus on the threat from mechanism more generally; so its results cannot be applied to my discussion automatically. Interestingly, the researchers raise the possibility that laypeople are more sceptical of responsibility in a deterministic world when asked in general terms but more compatibilist when asked in the context of concrete fact patterns that evoke retributive sentiments. *Id.* at 347–49. If so, legislators (who craft general policies) may have a quite different perspective than judges (who decide concrete cases).

³⁰ *Id.*

³¹ Daniel C. Dennett, *Higher Games*, MIT Technology Review, 15 August 2007, available at <http://www.technologyreview.com/review/408440/higher-games>.

³² DANIEL C. DENNETT, INTUITION PUMPS AND OTHER TOOLS FOR THINKING 99 (2013).

³³ SANFORD H. KADISH, STEPHEN J. SCHULHOFER, CAROL S. STEIKER, & RACHEL E. BARKOW, CRIMINAL LAW AND ITS PROCESSES 591 (9th ed. 2012).

law's crafters were free will *agnostics*. The suggestion is that they had and perhaps still have an affirmative view, one that they take to be widely shared and plausibly not in need of elaboration. Thus, a scattershot examination of the issues at least raises the possibility that those in power have largely been libertarians, and it is difficult to deny such views all legal effect. The meaning of legislative enactments in a democracy plausibly depends on the intent of legislators.³⁴

C. The plausibility of soul-based libertarian infusion

By claiming that criminal law can plausibly be interpreted in soul-based libertarian terms, I am in no way defending the truth of soul-based libertarianism. Legal interpretations are sometimes touted for their fidelity to law: how closely they fit with traditional sources of law like statutes, cases, the intentions of legislators and judges, and so on. Call this the *legal* component of an interpretation. Interpretations may also be touted for their superiority on policy, ethical or metaphysical grounds independent of specific legal authority. Call this the *policy* component of an interpretation. Since I make no claims here about the underlying moral or social issues related to the free will debate, my focus is on the legal component of the interpretation, unencumbered by the policy component.

Even as a legal matter, I merely claim that soul-based libertarianism is a plausible interpretation and not necessarily the best or only valid interpretation of criminal law. There are four main reasons for caution: First, as noted, I have not undertaken a careful intellectual history of the views about human agency that have dominated the law's crafters over the last several hundred years and continue to dominate today. The matter certainly warrants more detailed examination by historians, psychologists, and experimental philosophers.

Second, even if legislators have been soul-based libertarians of some sort, there is room to debate precisely how to construe their views. Was their purpose to punish those who deserve it (without any further thought as to what sort of metaphysical free will is required to deserve punishment) or was their purpose to punish those who deserve it because their souls chose to engage in criminal behaviour? Similarly, did they take libertarian free will to be a necessary or a sufficient condition of free will? The *Maher* case suggests that libertarian free will was a necessary condition such that those who do not have libertarian free will ought not to be punished. But if it were merely a sufficient condition, we would have to make further judgment calls about what other conditions the law's crafters would have found sufficient.³⁵ Importantly, however, given the serious nature of criminal punishment, if the primary purpose

³⁴ See, e.g., Larry Alexander & Saikrishna Prakash, 'Is That English You're Speaking?' *Why Intention Free Interpretation is an Impossibility*, 41 SAN DIEGO L. REV. 967, 969 (2004) (arguing 'that one cannot interpret texts without reference to the intentions of some author').

³⁵ In the cross-cultural survey of free will intuitions I described earlier, see Sarkissian et al., *supra* note 29, the researchers stated that 'our results suggest that if people are persuaded that the universe is deterministic, they will not end up concluding that human beings are never morally responsible. Instead, it seems that they will simply conclude that moral responsibility is compatible with determinism'. *Id.* at 353.

behind some law is frustrated and we are uncertain whether a criminal law might have had some secondary or conditional purpose, the benefit of the doubt should arguably go to defendants.

Third and closely related, we must decide how much legal weight, if any, to give to the intentions of the law's crafters. Some courts have said that we should not consider legislative intent when the text of a statute is clear on its face. '[B]ut the comparative significance of text and intent is a core puzzle that will never disappear for good.'³⁶ There is, after all, considerable leeway in determining when a statute is clear on its face. If a statute refers to 'willfully and deliberately taking the property of another', is it violated by a person who takes the property mechanistically? To many modern ears, the answer will be a resounding 'yes'. We have long used words like wilfully and deliberately to apply to people's conduct while knowing that their behaviour is mechanistic.

But the law's ears may be decidedly less modern. To soul-based libertarians, proof of mechanism would constitute a watershed moment where up is down and left is right. From a soul-based libertarian perspective, it is hardly plain that words like wilfully and deliberately and other *mens rea* terms apply to people who act mechanistically.³⁷ And if the meanings of these terms are uncertain, it is accepted legal practice to consult the intent of those who selected the terms.

Let me suggest an analogy for the unconvinced. Stephen Morse, as I shall soon discuss, defends a compatibilist interpretation of criminal law. He believes that mental state terms can be satisfied even if a person is caused to have a particular mental state by factors beyond his control. But Morse recognizes a possibility, albeit small, that neuroscience could someday show that our intentions are not what we think they are.³⁸ Maybe our intentions really have no causal effect on our conduct and are merely epiphenomenal.³⁹ Perhaps I only experience what I think of as the intention to go to a store after my brain has already put in place the steps by which I will in fact proceed to the store. If so, Morse concedes,⁴⁰ we are not the creatures we currently take ourselves to be and ought not to be held morally responsible.

Now suppose that the neuroscientific community definitively proves that all intentions are epiphenomenal, and Morse is the judge in a case against a person charged with an intentional crime. Clearly, Morse would not consider such a person morally responsible. But would he use his view of morality to dictate the legal result? Judges

³⁶ KENT GREENAWALT, *STATUTORY AND COMMON LAW INTERPRETATION* 43 (2013).

³⁷ Cf. Frederick Schauer, *Is Law a Technical Language?*, 52 SAN DIEGO L. REV. 501, 502 (2015) (examining 'the extent to which legal language—all of it, and not just the epiphenomenal corner we designate as *terms of art*—is a specialized language demanding interpretation in light of the particular goals of a legal system').

³⁸ Morse, *supra* note 18, at 127–28; Stephen J. Morse, *Determinism and the Death of Folk Psychology: Two Challenges to Responsibility from Neuroscience*, 9 MINN. J.L. SCI. & TECH. 1, 19 (2008) ('This challenge, which is powerfully fueled by stunning advances in neuroscience, is empirical and in principle capable of resolution.').

³⁹ See, e.g., ALFRED R. MELE, *EFFECTIVE INTENTIONS* 146 (2009) (describing one version of epiphenomenalism).

⁴⁰ Morse, *supra* note 38, at 19 ('[I]f humans are not conscious and intentional creatures who act for reasons that play a causal role in our behavior, then the foundational facts for responsibility ascriptions are mistaken. If it is true, for example, that we are all automata, then no one is an agent, no one is acting and, therefore, no one can be responsible for action.') (footnote omitted).

are supposed to go beyond their own policy preferences, so Morse might plausibly ask whether the crafters of the law would consider a mental state ‘intentional’ were it found to be entirely epiphenomenal. In other words, regardless of our individual policy preferences, the legal doctrine of *mens rea* may contain background assumptions, including perhaps the denial of epiphenomenalism. And if the denial of epiphenomenalism is a plausible background assumption, then the acceptance of contra-causal free will might be as well.

Moreover, there may be more general ways in which the law’s soul-based libertarianism infuses the law without relying on *mens rea* terms. For example, a jurisdiction may encourage judges to interpret a criminal code in accordance with overarching goals like punishing the deserving or protecting public safety.⁴¹ Even absent such statutory language, judges sometimes speak of ‘the fundamental moral principles of our criminal law’:⁴²

An adjudication of guilt is more than a factual determination that the defendant pulled a trigger, took a bicycle, or sold heroin. It is a moral judgment that the individual is blameworthy. ‘Our collective conscience does not allow punishment where it cannot impose blame.’ Our concept of blameworthiness rests on assumptions that are older than the Republic: ‘man is naturally endowed with these two great faculties, understanding and liberty of will’. ‘[H]istorically, our substantive criminal law is based on a theory of punishing the viscious [sic] will. It postulates a free agent confronted with a choice between doing right and wrong, and choosing freely to do wrong.’ Central, therefore, to a verdict of guilty is the concept of responsibility.⁴³

In other words, judges and legislators infuse the criminal law with their perceptions of the moral principles underlying the law. If they have infused the law with the intent to punish the culpably responsible, then their views of what constitutes ‘culpable responsibility’ are arguably part of the law as well. (Any revision of our notion of *criminal intent* may also require revision of our notion of *legislative* or *judicial intent*. But we can understand legislative or judicial intent without thinking legislators or judges *responsible* for the intentions they have.)

Fourth, if the law views us as libertarian agents, one might ask, ‘Why aren’t defendants regularly found not guilty simply by showing that their behaviour was caused?’. Since there is no general defence that applies to any behaviour shown to be caused, one might argue, the law is not libertarian.

In fact, though, the matter is more ambiguous. While I know of no court permitting the defence that a person’s behaviour was entirely caused by mechanistic forces beyond his control, I also know of no court that has denied such a defence. Indeed, it is not obvious how one would even go about demonstrating the mechanistic nature of the universe in court.

⁴¹ See, e.g., CAL. PENAL CODE § 1170 (West 2014) (‘The legislature finds and declares that the purpose of imprisonment for crime is punishment’); N.Y. PENAL LAW § 1.05 (McKinney 2006) (listing, among other purposes, the consequentialist goals of ‘insur[ing] the public safety by preventing the commission of offenses through the deterrent influence of the sentences authorized, the rehabilitation of those convicted, the promotion of their successful and productive reentry and reintegration into society, and their confinement when required in the interests of public protection’).

⁴² United States v. Lyons, 739 F.2d 994, 994 (5th Cir. 1984) (Rubin, J., dissenting).

⁴³ *Id.* at 994–95 (footnotes omitted).