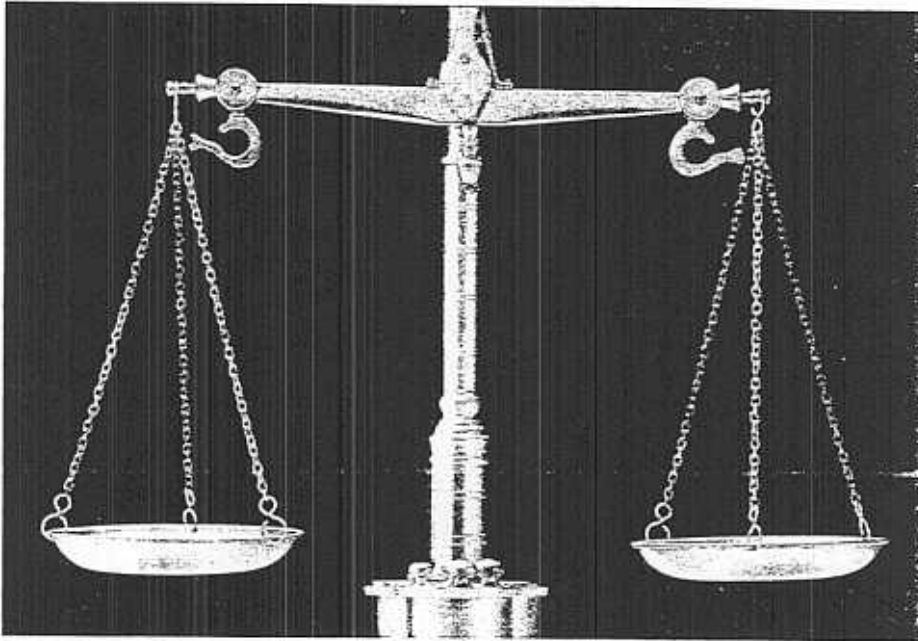


by Stephen J. Morse, J.D., Ph.D.



New Neuroscience, Old Problems: Legal Implications of Brain Science

Despite a large and growing interest in applying brain science to the ends of justice, the implications of neuroscience for the law are still unclear. But Stephen Morse argues that, unless discoveries about the brain radically change our conception of ourselves, they are unlikely to fundamentally alter

legal doctrine. For most challenges the findings might raise to justice, equality, and liberty, he writes, the law has rich theoretical resources with which to address them. On the other hand, the author acknowledges, one can easily imagine substantial changes in particular doctrines.

During the 1982 trial of John W. Hinckley Jr. for the attempted assassination of President Reagan and others, Hinckley introduced evidence of a brain abnormality to buttress his claim that he was legally insane. An expert witness used a computerized axial tomography (CAT) scan to demonstrate that Hinckley's sulci (the grooves in the folds of the brain's top layer) were wider than normal, a finding the expert then believed was linked to schizophrenia. None of the experts or commentators was sure of the legal significance of this finding, however, and we do not know whether that evidence influenced the jury's verdict that Hinckley was legally insane.

Today, as the Supreme Court considers whether it is unconstitutional to execute killers who were 16 or 17 years old when they committed homicide—a practice approved by a substantial minority of the states—opponents of executing juvenile killers are using more sophisticated brain imaging techniques to demonstrate that the brains of late adolescents are not fully developed. The opponents claim such findings indicate that the death penalty would be unfair for teenagers who commit capital crimes.

Although the brain science of today is vastly advanced compared with its 1982 precursors, the legal implications are still not clear. No necessary connection exists between the findings of neuroscience and legal or moral policies or decisions. The law's concept of the person and the nature of law itself are both so fundamental to our understanding of ourselves and society that the new neuroscience may have fewer



The Supreme Court is considering the case of Christopher Simmons to decide whether the death penalty should be applied to killers younger than 18. Simmons was 17 years old in 1993 when he murdered Shirley Crook, whose body with bruises and fractured ribs, and tied with electric cable, leather straps, and duct tape, was found in a river. The medical examiner ruled she died by drowning. Opponents of the death penalty argue that research showing the brains of late adolescents are not fully developed is relevant to whether such teenage murderers should be executed.

implications for law and society than popular imagination and even many scientists believe.

THE LAW'S CONCEPT OF THE PERSON

The legal concept of the person is that of an agent who is capable of acting intentionally and for reasons. We are social creatures whose interactions are not governed primarily by innate repertoires; we are able to guide our behavior in light of reasons we may have for acting and do not solely and blindly follow instinct.

Law is a practical system of rules and institutions that evaluate, guide and govern

human action. It gives people good reason to behave one way or another, by making the consequences of noncompliance clear or through peoples' understanding of the reasons that support a particular rule. Law shares many characteristics with other sources of guidance, such as morality and custom, but is different because its rules and institutions are created and enforced by the state.

Physical causes explain the structure and mechanisms of the brain and nervous system (and all the other moving parts of the physical universe), but only human action—intentional bodily movements and other intentionally-produced states—can also be explained by reasons. Law views human action as reason-governed and treats people as intentional agents, not simply as part of the biophysical flotsam and jetsam of the causal universe. It could not be otherwise. It makes no sense to ask a bull that gores a matador, "Why did you do that?" But this question makes sense and is vitally important when it is addressed to a person who sticks a knife into the chest of another human being. It makes a great difference to us if the knife-wielder is a surgeon who is cutting with the patient's consent or a person who is enraged at the victim and intends to kill him.

Only human beings are fully intentional creatures. To ask why a person acted a certain way is to ask for reasons, not for reductionist biophysical, psychological, or sociological explanations. I am not positing the existence of nonnatural properties, such as a soul; I assume that a perfectly naturalistic set of causes can explain intentionality and consciousness. But only persons can deliberate

about what action to perform and can determine their conduct by practical reason.

Today we have no idea how the brain enables the mind (and scant information about precisely how it disables it), but when we solve this problem—if we ever do—the solution will revolutionize our understanding of biological processes. Our view of ourselves and all our moral and political arrangements are likely to be as profoundly altered as our understanding of biological processes. For now, however, despite the impressive gains in neuroscience and related disciplines, we still do not know mechanistically how action happens even if we are convinced, as I am, that a physicalist account of some sort must be correct.

Rationality is the touchstone of responsibility.... In various legal contexts, how much and what type of rationality is required for responsibility is a social, moral, and political issue that divides people.

For the law, then, a person is a practical reasoner. It assumes simply that people are capable of acting for reasons and are generally capable of minimal rationality according to mostly conventional, socially-constructed standards of rationality.

THE TOUCHSTONES OF RESPONSIBILITY AND EXCUSE

Rationality is the touchstone of responsibility. Only agents capable of rationality can use legal and moral rules as potential *reasons for action*.

Only by its influence on practical reason can law directly and indirectly affect the world we inhabit. In order to maximize liberty and autonomy, the law presumes that adults are capable of minimal rationality and responsibility and that the same rules may be applied to all, but this presumption can be rebutted in appropriate cases.

No uncontroversial definition of rationality exists in the disciplines that study it, such as philosophy, economics, and psychology. In various legal contexts, how much and what type of rationality is required for responsibility is a social, moral, and political issue that divides people. For example, the United States Supreme Court was asked to decide if the criteria for competence to stand trial should be different from the criteria for competence to plead guilty. In a closely split decision, the Court ruled that the same criteria should apply. Science could not answer this question because it is not a scientific issue; the debate is about human action. But the rationality criterion for responsibility is perfectly consistent with the facts—most adults are capable of minimal rationality virtually all the time—and with moral theories concerning fairness and justice that we have good reason to accept.

Conversely, lack of the capacity for rationality is the touchstone of excuse. Unless people were reasonably capable of understanding and using legal rules as premises in deliberation, law would be powerless to affect human behavior and it would be unfair to hold them responsible. What rationality and consequent responsibility demands will differ across contexts. For example, a person is incompetent to contract if he or she is

incapable of understanding the nature of the bargain; a person is criminally nonresponsible if the agent did not know the nature of his or her conduct or the applicable law.

The law contains coercion or compulsion criteria for nonresponsibility, but these criteria are demanding and only infrequently provide an excusing condition. Properly understood, coercion occurs when the person is placed through no fault of her own in a threatening “hard choice” situation from which she cannot readily escape and in which she yields to the threat. The classic example

A persistent, vexing question is how to assess the responsibility of people who seem to be acting in response to some inner compulsion.

in criminal law is the excuse of duress. This requires that the person must be threatened with death or serious bodily harm unless she commits the crime and that a person of “reasonable firmness” would have yielded to the threat. The agent thus has acted intentionally and rationally to avoid death or grievous bodily harm. The crime is excused, because requiring human beings not to yield to some threats is simply too much to ask of creatures such as ourselves. How hard the choice must be can vary across contexts; a compulsion excuse for crime might require a greater threat than a compulsion excuse for a contract.

A persistent, vexing question is how to assess the responsibility of people who seem to be acting in response to some inner compulsion, or, in more ordinary language, seem to have trouble controlling themselves.

What does it mean to say that an agent who is acting cannot control himself? I have explored this puzzle in my professional writing, and have arrived at the conclusion that defects in rationality best explain these cases and that the law does not need an independent compulsion excuse in these “one party cases.”¹ People who act in response to such inner states are intentional agents. Simply that an abnormal biological condition played a causal role—and neuroscientific evidence frequently confirms this—does not mean the person was compelled. In some cases, however, the persistence or intensity of the desire or craving makes it supremely difficult for the person to access reason. They still might not be excused, however, if they recognize, as many do, that they are subject to such desires frequently and behave badly when this happens. In such cases, they may have an obligation when they are more rational to take steps to prevent themselves from being in a position to harm themselves or others when they are in the throes of their intense desires.

Neuroscience will surely discover much more about conditions that can compromise rationality and may broaden current legal excusing doctrines or widen the class of people who can raise a plausible claim under current law. Neuroscience may help to adjudicate excusing and mitigating claims more accurately. But unless neuroscience demonstrates that no one is capable of minimal rationality (or that everyone is always responding to supremely intense and persistent cravings)—an implausible scenario discussed below—fundamental criteria for responsibility will be intact.

CONFUSIONS ABOUT RESPONSIBILITY AND EXCUSE

Responsibility has nothing to do with “free will” even though legal cases and commentary concerning responsibility are replete with talk about it. Nor is the truth of a fully physically-caused universe (sometimes referred to as “determinism”) part of the criteria for any legal doctrine that holds some people nonresponsible. Thinking that causation itself excuses, including causation by abnormal variables, is an analytic error that I have termed the fundamental psycholegal error. All behavior may be caused in a physical universe, but not all behavior is excused, because causation per se has nothing to do with responsibility. For example, many variables caused you to be reading this article now, but you are perfectly responsible for intentionally reading it. Reading it is presumably not evidence of incapacity for rationality and presumably no one is forcing you to read it. Causation is not the equivalent of either lack of capacity for rationality or compulsion. If causation negated responsibility, no one would be morally responsible and holding people legally responsible would be extremely difficult.

The fundamental psycholegal error wrongly leads people to try to create a new excuse every time an allegedly valid new “syndrome” or any other cause is discovered that plays a role in behavior. But syndromes and other causes, including those of brain structure and function, do not have excusing force unless they sufficiently diminish rationality in the context in question. In that case, it is diminished rationality that is the excusing condition, not the presence of any

particular type of cause. An assertion about “free will” based on causation is simply a conclusion about responsibility that must have been reached based on criteria such as the presence of rationality or absence of coercion.

ASSESSING RESPONSIBILITY AND EXCUSE

The criteria for excuse—lack of capacity for rationality and the presence of coercion—concern components of human action, such as desires and beliefs, that must in the first instance be assessed behaviorally, including by the use of behavioral tests devised for this purpose. It is human action that is at issue, not the state of the brain. If the person’s rational capacities, which we infer from her behavior, seem unimpaired, she will be held responsible, whatever the neuroscience might show, and vice versa.

The issue in deciding if teen killers should be executed, for example, is whether they suffer from sufficiently less rationality than adults.

We knew that young children were not fully responsible long before we understood the neuroscience.

Although neuroscientific evidence may surely provide assistance in performing responsibility evaluations, neuroscience could never tell us how much rationality is required for responsibility. The question is social, moral, political, and, ultimately, legal. Moreover, it is unlikely, except in extreme cases in which we wouldn’t need

brain evidence, that brain states will map legal criteria precisely. For the foreseeable future, neuroscience as a tool cannot replace behavioral investigation and commonsense when we assess responsibility.

The issue in deciding if teen killers should be executed, for example, is whether they suffer from sufficiently less rationality than adults, and that must be evaluated by examining adolescents’ reasoning and judgment. Brains do not have defective judgment; conscious, intentional agents—people—do. I am an opponent of capital punishment, but if our society decides morally and legally that the capacity for rationality in normal late adolescents is sufficient for capital punishment, even if their brains are less developed than those of adults, then the brain science alone cannot demonstrate that capital punishment is unjustified.

THE NEUROSCIENCE CHALLENGE TO PERSONHOOD AND RESPONSIBILITY

Advances in neuroscience and related fields have revealed hitherto unimagined biological causes of behavior, including abnormal neurotransmitters, that may increase the risk of antisocial or otherwise undesirable behavior,² but we have no convincing conceptual or empirical reason to abandon our view of ourselves as creatures whose desires, beliefs, and intentions cause and explain our behavior.

Scientific discoveries might indicate that mental causation does not exist as we think it does, but a brain correlate or cause does not mean that the action is not an action. If actions exist, they have causes, including those arising in the brain. The real question

is whether studies have shown that intentional behavior is rare or nonexistent. Despite our intuition and experience that action is ubiquitous and genuinely explainable, increasing numbers of scientists and

Even if we were never aware of the causes of our actions, it would not mean that we do not act intentionally and consciously.

philosophers claim that intention is an illusion. They cite two kinds of empirical evidence: first, demonstrations that most of our behavior is caused by variables we are unaware of and, second, studies indicating that much behavior occurs when our consciousness is diminished.

A person may not be aware of all the causes of forming and acting on an intention, but this is not to say she did not form an intention and was not a fully conscious agent. Even if we were *never* aware of the causes of our actions, it would not mean that we do not act intentionally and consciously.

Knowledge that a variety of causes can diminish human consciousness long predates contemporary neuroscience. Demonstrating that partial consciousness is more common than it seems extends the range of cases in which people are not responsible or have diminished responsibility. Nevertheless, such studies do not demonstrate that most apparently intentional human actions occur in states of unintegrated consciousness. One cannot generalize from abnormal cases. No scientific study has

produced a general demonstration that causal intentionality is an illusion, and I suspect that none ever will. As the eminent philosopher of mind Jerry Fodor has written, the only thing we can be as sure of as the existence of "mid-sized" objects is that we are creatures who act for reasons.⁵

Let us suppose, however, you were convinced by the mechanistic view of persons that you were not an intentional, rational agent after all. (Of course, the notion of being "convinced" would be an illusion. Being convinced means that you were persuaded by evidence or argument, but a mechanism is not persuaded by anything. It is simply neurophysically transformed or some such.) What should you do now? You know it's an illusion to believe that your deliberation and intention have any causal efficacy in the world. (Again, what does it mean mechanistically to "know" something? But enough.) Nonetheless, you also know that you care about what happens to you and to the world. You cannot just sit quietly and wait for your neurotransmitters to fire. You will deliberate and act. Even if pure mechanism is true, human beings will find it impossible not to treat themselves as rational, intentional agents.

People think that the discovery of causes of behavior over which people have no control, including brain states, suggests that determinism is true and undermines "free will." This concept is what terrifies people about scientific understanding of human behavior, which relentlessly exposes the numerous causal variables that seem to toss us about like small boats in a raging sea. They fear that scientific explanations,

biological or otherwise, will demonstrate that we are only mechanisms. But the new neuroscience casts little doubt on responsibility generally; there is no reason to doubt that we are conscious, intentional, and rational creatures. Causation alone does not undermine that knowledge or provide an excusing condition. Western theories of morality and the law properly hold some people responsible and excuse others, and when we do excuse, it is not because a little local determinism has been at work. Determinism cannot tell us which goals we should pursue and it cannot explain or justify our present practices.

NEUROSCIENCE AND LEGAL REFORM

Under what conditions will the new neuroscience suggest reform of existing legal rules? The law is in many respects a conservative enterprise and will always resist supposed reforms other disciplines suggest. For example, despite the extraordinary advances in the understanding of mental disorder in the past half century and consistent calls for reform based on such understanding, the dominant version of the insanity defense—which excuses if the defendant with a disorder did not know what he was doing or did not know that it was wrong—is scarcely changed from the form adopted in 1843 by the English, the M’Naghten rule. This is unsurprising. Mental health science can teach us much about why some people lack rationality and can help identify and treat those people, but it cannot tell society which rationality defects are sufficient to excuse a wrongdoer. Deciding who is blameworthy and deserves

to be punished depends on established social norms and practices about which mental health science must fall silent.

Legal rules do, of course, change in response to evolving principles and new scientific discoveries. Racial discrimination was banned by civil rights legislation simply because it was wrong. It is now unlawful to dump toxic waste, in large part because science demonstrated the health hazards. But before legislators and judges will be rationally justified in changing existing legal rules in response to the discoveries of any scientific discipline, at the least they should be convinced, first, that the data are valid; second, that the data are genuinely relevant to particular rules; third, that the data convincingly imply that specific changes to those rules would have desirable effects; and, fourth, that those changes will not infringe upon other values that may be more important. All this is a tall order.

But even an exceptionally sensitive technique to detect lying or discrimination might not be used because we fear state invasion of our innermost thoughts

I predict that neuroscience will not have widespread, profound influence on doctrine in most areas unless its discoveries radically alter our conception of ourselves. On the other hand, one can easily imagine substantial changes in discrete doctrines. For example, neuroscience may teach us much about cognitive processing under stress that would influence our doctrines

of informed consent to medical care. For another example, neuroscience may be able to identify when people are consciously lying or consciously or unconsciously discriminating on the basis of objectionable factors such as race. Such discoveries could have profound effects on evidentiary practices. But even an exceptionally sensitive technique to detect lying or discrimination might not be used, because we fear state invasion of our innermost thoughts, even for purposes such as discovering truth or uncovering conscious or unconscious discrimination. In cases involving discrete doctrinal change, we already have the tools to weigh the desirability of the change.

POTENTIAL THREATS TO CIVIL LIBERTIES

Neuroscientific discoveries might well raise profound challenges to civil liberties. Other sciences, too, might make discoveries that would do likewise, so the following discussion surely generalizes. The potential of neuroscience to invade our privacy by revealing various aspects of our private,

If socially troublesome behaviors can be accurately predicted, use of such techniques for screening and intervention will be tempting.

subjective experience may produce the strongest reaction against its use and lead to substantial regulation. Still, the techniques that permit valuable ends such as accurate lie detection may be so alluring that the temptation to use them will be great.

The question is, what constitutional or legislative limits may be placed on such techniques. The government will not be able to use neuroscientific investigative techniques to go on “mental fishing expeditions” generally, but various state interests may permit infringing hitherto protected interests. For example, the Supreme Court recently held that under limited conditions the State has the right to force psychotropic medication on a psychotic criminal defendant solely for the purpose of restoring the defendant’s competence to stand trial.⁴

Neuroscientific techniques might also increase the ability to make accurate predictions about various forms of future behavior. If socially troublesome behaviors can be accurately predicted, use of such techniques for screening and intervention will be tempting. For example, neuroscientific techniques may well enhance the ability to predict antisocial conduct. It would be less difficult to justify screening prisoners and others under criminal justice control, but widespread screening of others, such as apparently at-risk children—even if the risk status were identified by objective, valid measures—would be legally and politically fraught with civil-liberties implications. The widespread use of psychotropic medications such as methylphenidate (Ritalin) among school children suggests, however, that a screening/intervention scenario would not be unthinkable under some conditions. It is difficult to envision how society would respond to techniques that identified risk-creating abnormalities highly accurately and to effective interventions that would prevent undoubtedly serious social and personal

Cerebrum

The Dana Forum on Brain Science



Volume 6 ■ Number 4 ■ Fall 2004 ■ The Dana Foundation ■ New York