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# **Books Forum**

## Review of Michael Gazzaniga's The Ethical Brain

Broad, Deep and Indirect: The Potential Influence of Neuroscience in Law

By Amanda C. Pustilnik

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From the reasonable person to the rational actor, our legal doctrines are based on abstract models of mind and behavior. Determinations of liability and culpability are based on departures from the presumed reasonable person standard, while incentive and penalty structures fundamental to law are built around the notion of the rational actor. It would seem, then, that no science so much as neuroscience would have the potential to ground existing legal doctrines on a more secure footing or to upend those that don't conform with the ways that people really think and act. Indeed, there lately has been an upwelling of interest by legal scholars in neuroscience, clinical psychology, and behavioral economics (see Gintis et al., 2005; Kahan and Braman, 2003: 1291; Sunstein, 2002: 61).1

Into this ferment comes the latest contribution by Michael S. Gazzaniga, a preeminent neuroscientist at Dartmouth College and a member of the President's Council on Bioethics. In *The ethical brain*, Gazzaniga takes a strongly positivist view of the ability of neuroscience to conquer policy problems and even to bring about a universally shared ethical culture. This ambitious work, a welcome foil to Francis Fukuyama's (2002) recent doomsaying about science unleashed, offers the view that questions from the permissibility of stem cell research to the validity of international human rights can be addressed with

1 Gazzaniga's discussion of the ways in which people tend to selectively credit information that reinforces their pre-existing beliefs (p. 151) dovetails with work by legal scholars on cultural cognition (see e.g. Kahan and Braman, 2006: 149).

reference to universal facts about neurological function. Yet, Gazzaniga's imperial view of neuroscience raises important questions about the ways in which scientific knowledge and the broader legal and general culture incorporate and inform each other. Both those who guard and those who would upset the status quo advert to scientific evidence because of its presumed objective status (see Lewontin, 2000: 34-40);<sup>2</sup> thus, the uses of science in law often may be instrumental and legitimating. And, in criminal responsibility decisions, scientific evidence often is used selectively and opportunistically to effectuate cultural notions of justice. The uses of science in law raise questions about the extent to which neuroscience can create fundamental policy change, as Gazzaniga would have it, or whether its findings simply will be deployed to support existing positions. If neuroscience is to have a basic impact on the law, the current uses of science in law suggest that its avenues of influence may not be direct but rather may be proportionate to its influence more broadly on widely held normative judgments.

The ethical brain grapples with the import of neuroscience to the law, particularly relative to the concept of criminal responsibility. Gazzaniga's initial focus on criminal law makes sense, precisely because criminal law centrally concerns itself with the defendant's state of mind. Specifically, a person can only be convicted of a crime if it can be demonstrated that she both committed a bad act (actus reus) and had malign intent (mens rea). If a person enters her neighbor's house by mistake instead of her own late at night, she's not guilty of burglary because, though she did go into the wrong house, she had no intent to enter the dwelling or property of another to commit a crime therein. Even if she went into her neighbor's house on purpose, but did so because she heard a cry for help, she also would not have committed a crime. Similarly, a person who is deranged

2 Lewontin (2000: 34-40) discusses uses of IQ science to legitimate and to challenge race, class and gender inequalities.

Amanda C. Pustilnik is an attorney at Covington & Burling LLP, where she has worked on criminal law and health law matters. After graduating from Yale Law School and Harvard College, she clerked for Judge Jose A. Cabranes on the Second Circuit Court of Appeals. She also served as a visiting fellow at the University of Cambridge, affiliated with the History and Philosophy of Science Department.

because of a serious mental disease or defect may not have an accurate understanding of his or her actions and their wrongfulness; lacking guilty intent, that person would not have committed a crime or, put another way, would not be criminally 'responsible'. A tantalizing prospect of neuroscience is that it might find the 'brain correlates' of responsibility (Gazzaniga, p. 101).

Surprisingly, though, Gazzaniga claims that neuroscience has nothing to contribute to determinations of responsibility because, although '[b]rains are automatic, rule-governed, determined devices ... people are personally responsible agents, free to make their own decisions' (p. 90). This is because, he asserts, '[t]he issue of responsibility ... is a social choice' (p. 101). This stance, at once determinist and nondeterminist, is a marked departure from the argument Gazzaniga advances in the first section of the book that we are our brains—to the extent that decisions from embryo use and abortion to euthanasia can be based exclusively on the presence and degree of neurological function. Suddenly, in Gazzaniga's consideration of legal responsibility, self-willing people appear in this narrative of 'determined' brains and brain-based determinations (p. 99).3 This assertion of that brain and society are separate realms would seem to substitute for a consistent explanation of how brain states intersect with behavior, and behavior with social responsibility. This omission undermines Gazzaniga's central claim that the normal brain is the wellspring of our human nature and social existence because it creates a space for the conclusion that brain and behavior are independent.

However, Gazzaniga's contrast between the 'determined', 'automatic' brain and free people may be unnecessarily dichotomous. Under a compatibilist theory, <sup>4</sup> individual actions and social interactions are understood to play out within a physical context that may exert some determining—or constraining—effect but that is not incompatible with free will. This view does not require brain function and social

interaction to be conceived of as separate. Rather, it suggests a threshold question about the degree of cognitive function needed for a person to be a minimally rational agent. If law is interested in general minimal rationality, neuroscientific evidence could help establish thresholds above and below which such capacity is or is not present. Neuroscience may lead to better, evidence-based standards for defining categories of incapacity, such as infancy and 'idiocy', long recognized by the law and by general social experience. This is not to say that all neuroscientific evidence of deviation from the norm would be exculpatory. Neuroscientific investigation may illuminate brain-based expressions of various differences-which may or may not legitimately be termed 'conditions' or 'syndromes'-that do not bear on general minimal rationality and so would not be inconsistent with a criminal finding of responsibility (see Morse, 2004: 157-98; see also Greene and Cohen, 2004: 1778 note 8). Further, there is much more to learn about the direction of causality-that is, whether brain differences lie at the origin of divergent behaviors, reflect the effects of life experiences and choices repeated over time, or both. We are only coming to understand the amazing plasticity and responsiveness of the brain, as well as its limits, so much about causation remains up for grabs. Potential imaging studies showing brain differences will be a new type of evidence in the courtroom, but one as to which courts and juries will have to make traditional relevance, causation and sufficiency determinations.

Whether the introduction of better neuroscientific evidence could ever be determinative, however, is an open question. While legal responsibility determinations in theory are based on a weighing of evidence, a finding of responsibility or non-responsibility is an expression as well of the fact-finder's culturally influenced judgment and 'ordinary common sense'. Thus perfectly healthy husbands who kill unfaithful wives historically have been partially excused as 'non-responsible' because of 'temporary insanity', while people with serious brain diseases or defects often are found 'responsible' for having committed less normatively intelligible acts (see Bonnie, 1983: 194, 197).<sup>5</sup>

Indeed, the very defense of temporary insanity arose as a sort of legal fiction to exculpate the

virtuous cuckold. In 13 Sickles killed his wife's the son of Francis Scott Key in the proverbial he better part of a day to the veled across Washington his arrest, Sickles retained General, whose strategy gressman's virtue and Key's loucheness and for an ingenious stroke, he exemplary client not gui insanity-the first time s (de Fontaine, 1859: 3-6 found not guilty, but, at the Civil War, was appe Supreme Court (though sworn in).7 In this cont insanity functioned as a valve for a law-breaker convict.8

Though the Sickles of the overall history of defity show that normati actions express the right probative force of any emental capacity or emotand Nussbaum, 1996: 2 suggests that, within the decisions, scientific evide to support dominant missue. If responsibility social judgments about actors, under apparent

<sup>3</sup> Gazzaniga states that 'neuroscience can offer very little to the understanding of responsibility. Responsibility is a human construct that exists only in the social world' (p. 100) and 'Neuroscience will never find the brain correlate of responsibility' (p. 101).

<sup>4</sup> Compatibilism, a widely held position among philosophers and legal theorists, locates free will within a determined physical context, or, in another formulation, at least admits the possibility that a determined context could constrain free will (see Greene and Cohen, 2004: 1775, 1778). On compatibilism generally, see Dennett (1973: 150-73; 1984).

<sup>5</sup> Bonnie (1983: 194, 197) argues that the insanity defense should be abolished because acquitting people who cannot form culpable intent still would be 'out of touch with commonly shared moral intuitions'.

<sup>6</sup> This reproduces the op-

<sup>7</sup> See Remarks of the Rehnquist, Historical So bia Circuit 200th Anniv the District of Columbia

<sup>8</sup> As one commentator no was something ironic a defense ... [because] eve imagine getting pretty wife's infidelity' (Wrigh and Nussbaum (1996: 2 heat-of-passion provoca to 'good men'.

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virtuous cuckold. In 1859, Congressman Daniel Sickles killed his wife's lover, Phillip Barton Key, the son of Francis Scott Key. Sickles did not kill Key in the proverbial heat of passion but took the better part of a day to think about it and then traveled across Washington to shoot Key dead. After his arrest, Sickles retained the former US Solicitor General, whose strategy was to emphasize the Congressman's virtue and patriotism compared with Key's loucheness and fondness for opera. Then, in an ingenious stroke, he asked the jury to find his exemplary client not guilty by reason of temporary insanity—the first time such a defense was invoked (de Fontaine, 1859: 3-66).6 Sickles not only was found not guilty, but, after distinguished service in the Civil War, was appointed to the United States Supreme Court (though he died before he could be sworn in). In this context, a claim of temporary insanity functioned as a claim of normalcy, a safety valve for a law-breaker that a jury did not want to convict.8

Though the Sickles case is particularly dramatic, the overall history of defenses related to responsibility show that normative concerns about whose actions express the right values often outweigh the probative force of any evidence introduced to show mental capacity or emotional control (see Kahan and Nussbaum, 1996: 269, 313–19). This history suggests that, within the context of responsibility decisions, scientific evidence is used opportunistically to support dominant norms about the subject at issue. If responsibility determinations reinscribe social judgments about particular types of acts and actors, under apparent scientific legitimacy, then

- 6 This reproduces the opening arguments of Sickles' counsel.
- 7 See Remarks of the Chief Justice William H. Rehnquist, Historical Society of the District of Columbia Circuit 200th Anniversary of the Federal Courts of the District of Columbia, 9 March 2001.
- 8 As one commentator noted, 'From the beginning there was something ironic about the temporary insanity defense... [because] every one of [the] jurors... could imagine getting pretty steamed after discovering a wife's infidelity' (Wright, 1994: 6). See also Kahan and Nussbaum (1996: 269, 307), which analyzes the heat-of-passion provocation defense and its limitation to 'good men'.
- 9 Kahan and Nussbaum (1996: 269, 313-19) argue generally that the law excuses where the defendant loses control for the 'right reasons' but punishes more severely if he or she engages in the same act for the 'wrong reasons'.

even the best neuroscientific evidence may have little impact on them (see Pustilnik, 2006: 217). Thus, in rejecting the relevance of neuroscience to legal responsibility judgments, Gazzaniga may have (intentionally or not) intuited a deep truth about the ways in which, in certain contexts, legal decision-makers integrate scientific evidence into pre-existing social frameworks. A provocative question for further study would be the extent to which those underlying normative judgments could be moved by neuroscientific insights, possibly leading to an important, albeit indirect, dialogue between neuroscience and law on the question of responsibility.

In the final, ambitious section of The ethical brain on 'the nature of moral beliefs and the concept of universal ethics' (p. 143), Gazzaniga asserts that there is a universal ethics common to all people that arises from the brain itself-truly, 'neuroethics'. To support this claim, Gazzaniga principally points to the socalled Trolley Problem. The Trolley Problem is this: 10 you are standing by a track when you see a trolley has gone out of control and is about to kill five people. In the first scenario, you can either do nothing or you can save those people by flipping a switch to put the trolley on another track, where it will instead kill one person. Do you do it? In the second scenario, rather than being able to flip the switch, you would have to push one other person in front of the trolley, to her death, to save the other five.

Apparently, the near universal response to the first scenario is that flipping the switch is the right thing to do. But, in the second, people respond that pushing the person in front of the trolley is wrong. Functional magnetic resonance imaging (fMRI) of subjects as they contemplate the scenarios shows that brain centers associated with reasoning and problem-solving display greater activity when people think about flipping the switch while those associated with emotion show more activity when they think about shoving the person.

Because of the near universal responses to these scenarios, Gazzaniga says that the Trolley Problem points to biological, shared bases of ethical decision-making and to innate ethical predispositions. But do the inconsistent responses to the first and second Trolley Problem scenarios suggest a consistent, innate moral sense? Or do they point to a morally neutral preference for impersonal over direct

<sup>&#</sup>x27;) argues that the insanity ed because acquitting people le intent still would be 'out shared moral intuitions'.

<sup>10</sup> The version of the Trolley Problem described here is as presented in *The ethical brain* (pp. 153, 170-71).

violence that could be manipulated to encourage or discourage killing?

Further, it remains an open question as to whether these emotional responses are 'essential' or rather arise interdependently with cultural beliefs and social conditioning. As the powerful emotion of disgust shows, our 'gut reactions' are strongly shaped by our internalization of beliefs (see Kahan 1998: 1621, 1637; Miller, 1997). For this reason, identifying through neuroimaging a common emotional reaction to an ethical question may not imply that the general or status quo response is a biologically determined one (Kahan and Nussbaum, 1996: note 10).<sup>11</sup>

Beyond the Trolley Problem, the precept that it is wrong to kill appears to demonstrate the universality of moral reasoning. Yet, this general principle is everywhere subject to a large qualification: it is wrong (and illegal) to kill, unless the killing is justified or excusable. What counts as justification or excuse varies hugely over time and across cultures. In the US alone, the grounds for legally justified or partly excused killing have varied greatly in a few hundred years. In the 1700s and into the early 1800s, a slight to one's honor was sufficient grounds to kill in a duel (Baldick, 1965).12 In the nineteenth century, a killing could be partly excused if the act was provoked by false arrest (Coker, 1992). By the later twentieth century, false arrest had disappeared entirely from the cultural consciousness but new forms of provocation, such as domestic abuse, had come to be recognized (see Coker, 1992; Nourse, 1997). 13 In some cultures, it currently is considered justified to kill sisters or daughters who 'dishonor' their families. In other cultures and time periods, infanticide was unremarkable and slaves were expendable. These exceptions to 'Thou shalt not kill' don't quite swallow the rule. But they do call into question the existence of a universal moral sense when the horrendous murders of one culture are the justified honor killings of another.

- 11 Here Kahan and Nussbaum survey and analyze literature on the social constitution and biological bases of emotion.
- 12 Indeed, dueling was instituted by early European governments as the legal method of settling disputes, in lieu of a trial. Later, the 'judicial duel' fell from favor and was banned by the same legal systems. How times—and mores—change.
- 13 The doctrine of provocation is incorporated into the Model Penal Code, § 210.3 (1980).

If a society's laws express its values, then the elasticity of those values calls into question whether they provide a particularly solid indicator of a brain-based ethics. Even if such universals exist, the best The ethical brain shows is that they are likely to be malleable and may be ethically neutral. It thus would fall to each society to mobilize or restrain those predispositions to achieve what its members have determined to be the good. This requires more of us than a reliance on innate qualities illuminated by the torch of modern neuroscience. It requires ethical interpreters of neuroscientific findings rather than 'ethical brains'. It requires us to strive to define and realize 'the good' while understanding our own limitations. And, it may require leaving behind the basic fantasy of The ethical brain-that the technologies and insights of any science can wholly perform such ethical work for us.

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### An Honest Incoherence

## Reviewed by Steven Ros

Open University, UK Email: s.p.r.rose@open.ac. doi:10.1017/S17458552060

The growth in neuroscie wake a whole library of b pret the new brain science the mythical 'lay reader'. tival flavour to the titles are Social, Bisected, Creeresponsible for a couple it was Conscious, whos now somewhat regret, century, which at least claims. Now Michael Gacognitive neuroscientist two of the above adject version, Ethical. His titles.

Steven P. Rose, Ph Professor at University Comemory has led to variou (Russia) and the Ariens K for excellence in public cober of the Research Defe Science. He was the 1996

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#### An Honest Incoherence

Reviewed by Steven Rose

Open University, UK Email: s.p.r.rose@open.ac.uk doi:10.1017/S1745855206003097

The growth in neuroscience has swept along in its wake a whole library of books endeavouring to interpret the new brain sciences and their implications to the mythical 'lay reader'. There is a peculiarly adjectival flavour to the titles their authors choose: brains are Social, Bisected, Creating, Emotional. I've been responsible for a couple myself—in my callow youth it was Conscious, whose reductionist certainties I now somewhat regret, and more recently 21st-century, which at least makes fewer conceptual claims. Now Michael Gazzaniga, a leading American cognitive neuroscientist and already responsible for two of the above adjectival brains, offers a third version, Ethical. His title, and text, draw on his

experience as a member of the President's Council on Bioethics, and reflect the long-standing interest in the field of his publisher, the Dana Foundation. The Foundation's dual functions (and I write as a member of its European branch) are both to act as a public advocate for the potential of the neurosciences and, increasingly, to discuss its ethical implications; the very name neuroethics is attributed to its current Chair, the newspaper columnist William Safire, and the Foundation sponsored one of the first conferences in the field in 2002, from which perhaps we can date this new growth industry.

The terrain has become familiar. The original conference had papers on the ethical implications of the neural basis of social behaviour, morality and decision-making, on legal responsibility, brain enhancement and brain-computer interfacing. The following year a special issue of Scientific American waxed hyperbolic. Its front cover offered 'Better brains' and the titles of the articles inside formed a dream prospectus for the future: 'Ultimate selfimprovement', 'New hope for brain repair', 'The quest for a smart pill', 'Mind-reading machines', 'Brain stimulators', 'Genes of the psyche', 'Taming stress'. These, it seems, are the promises offered by the new brain sciences, bidding strongly to overtake genetics as the Next Big Scientific Thing. The phrases trip lightly off the tongue, or shout from lurid book covers. There is to be a 'post- (or sometimes trans-) human future' in which 'tomorrow's people' will be what one of the editors of this journal has described as 'neurochemical selves'. Where the 1990s were the so-called Decade of the Brain, this current decade is apparently the Decade of the Mind-or, as one of the field's leaders, Eric Kandel, has described it in his new autobiography, the Decade of Brain Therapeutics. The President's Commission in the US, the Nuffield Foundation and Demos in the UK, and most recently an ambitious nine-nation Citizens' Jury across the EU sponsored by the King Baudouin Foundation have tackled the questions. There are university departments, new journals, a plethora of conferences. All the signs are there of a new academic niche being carved out in which socially concerned neuroscientists past the age at which ambition confines them to the laboratory and the

Steven P. Rose, PhD, is a neurobiologist, Professor Emeritus of Biology at the Open University, and visiting Professor at University College London. His research on the cellular and molecular mechanisms of learning and memory has led to various international honors and medal awards including the Sechenov and Anokhin Medals (Russia) and the Ariens Kappers medal (The Netherlands). In 2002 he was awarded the Biochemical Society medal for excellence in public communication of science and in 2004 The Edinburgh medal. He has been a Council member of the Research Defence Society and a member of COPUS, the Committee on the Public Understanding of Science. He was the 1996 President of the Biology Section of the British Association for the Advancement of Science.