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Criminal law, neuroscience, and voluntary acts

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The intersection between law and neuroscience is fertile ground for a variety of issues that implicate both scientific and philosophical questions. In the context of the criminal law, the most fertile ground for inquiry is the interplay between states of mind and judgments of culpability. In their interesting and provocative article, ‘What does neuroscience tell us about criminal responsibility?’,¹ Uri Maoz and Gideon Yaffe consider the degree to which neuroscientific research bears on the question of criminal responsibility. Their article is a thorough and informative account of just how neuroscience can contribute to a better understanding of responsibility for action.

Maoz and Yaffe are clear about the possible impact of neuroscience on law. They believe that ‘[p]otentially, a neuroscientific result could show that a class of people, or, perhaps, even, an individual person, fails to meet, or succeeds in meeting, one of the necessary conditions of criminal responsibility’. (123) The reason they believe this is, among other things, their claim that ‘criminal behavior . . . has its source in the brain.’ (123) This licenses the conclusion that ‘the neural basis of capacities underlying criminal responsibility might shed new light on the standards we apply for individuals having or lacking criminal responsibility.’ (123)

I think Maoz and Yaffe are taking up an extremely important and fundamental issue. But I am not convinced they frame their undertaking in the most perspicuous manner. The problem, I will argue, is that they conflate two dimensions of human agency that are distinct and irreducible.

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¹ Uri Maoz & Gideon Yaffe, *What Does Recent Neuroscience Tell Us About Criminal Responsibility?*, 3 J. L. & BIOSCI. (2016) 120 (citations to the article in the text).

In this comment on their article, I want to suggest that Maoz and Yaffe are at risk in their undertaking. The fault, I will argue, is not with their arguments as such but with the concept of 'voluntary act' they employ. As I read their arguments, Maoz and Yaffe assume that 'voluntariness' is a feature of human acts and that neuroscience can tell us something about voluntariness. I want to suggest that this is a mistake. While we can and, indeed, must assess human action as voluntary or not, that assessment cannot be decided by scientific facts about the brain.

Maoz and Yaffe begin with the story of Michael. Shortly after turning 40, Michael developed a strong interest in child pornography. This was followed by a conviction for child molestation after Michael was found to have inappropriately fondled his 12-year-old stepdaughter. At sentencing, the judge gave Michael the option of avoiding jail by entering a treatment program. Anxious to avoid jail, Michael jumped at the chance. While in the program, Michael acted inappropriately toward female members of staff. He complained of headaches the night before he was supposed to be sentenced, having been failed and been ejected from the treatment program. An MRI was ordered because he showed frank neurological as well as behavioral signs in the neurological consulting room. The MRI revealed a large orbitofrontal tumor. Once the tumor was removed, Michael's bad behavior ceased, his sexual urges for children disappeared, and he successfully completed his program. Several months after returning home, Michael's urges resurfaced together with the return of his tumor. After the tumor was again removed, the urges ceased and Michael remained a free man.

What can Michael's case tell us about the relationship between neuroscientific research and responsibility? The first thing they say is that Michael's criminal behavior 'is no different from anyone else's: such behavior has its source in the person's brain and his environment'. (122) But it is not just criminal behavior that has its source in the brain. In fact, according to Maoz and Yaffe the same is true for sane and insane people alike: 'Sanity, like insanity, depends on capacities brains have. And criminal behavior by the sane, like such behavior on the part of the insane, has its source in the brain.' (123)

Michael's behavior is 'traceable to [his] brain abnormalit[y]'. (121) Once the abnormality is removed, Michael behaves like an upstanding citizen. This, it seems, is a clear case where neuroscience was able to show 'My brain made me do it.' The tumor in Michael's brain may very well be an instance where 'a neuroscientific result could show that . . . an individual person, fails to meet, or succeeds in meeting, one of the necessary conditions of criminal responsibility.' (123)

The crux of Maoz and Yaffe's position on the relationship of neuroscientific research to criminal responsibility is clear. They write: '[N]euroscientific studies might illuminate the neural mechanisms that underlie those features of people in virtue of which they are criminally responsible for their behavior. And so they would help us to understand criminal responsibility better . . .' (123) I think there are reasons to doubt the claim that developments in neuroscience can help us understand criminal responsibility better. This is not to say that neuroscience is irrelevant to judgments of responsibility. However, it is to say that our conception of criminal responsibility can in no way be determined by scientific results.

The line I am attempting to draw is between the conceptual and the empirical. As I draw that line, I want to be as clear as possible about the potential role of neuroscience in understanding key concepts in the criminal law. The key issue is the role neuroscientific

evidence plays in judgments of criminal responsibility. Almost everyone will agree that neuroscience has something to contribute to criminal law. But I think there is more than a little confusion about how to think about the interplay between the conceptual, the empirical and the legal.

Let's start with Michael. It is tempting to say that his tumor is an excusing condition, so that he should get off. But is it really that easy? Stephen Morse suggests not. In what Morse describes as 'the fundamental psycho-legal error',² he argues that causation alone cannot excuse.³ And the reason he thinks this is precisely the same reason given by Maoz and Yaffe: all behavior is caused. As they put it: 'Michael's criminal behavior ... is no different from anyone else's: such behavior has its source in the person's brain and his environment.' (122) Morse, Maoz and Yaffe all agree: if causation is an excuse, then no one is guilty of anything. But they all reject this conclusion.

Which takes us back to Michael. If Michael cannot simply claim 'the tumor made me do it', then why does he get off? Maoz and Yaffe gesture at an answer to this question in the following remark: 'If it could be shown, for instance, that people with orbitofrontal tumors like Michael's typically meet the law's criteria for insanity, then such research would provide some support for the claim that Michael was not criminally responsible for his behavior by supporting the claim that he had an insanity defense.' (123)

Maoz and Yaffe make two points. First, consider the quote above regarding the association of persons with orbitofrontal tumors and insanity. Although the association is between tumors and insanity, it could just as easily have been between insanity and any other characteristic. Suppose it turned out that there was a high correlation between a rare blood type and insanity. Just as with states of the brain, such evidence would be relevant and possibly probative. Its strength as evidence would come not from the nature of the condition but simply from the strength of the statistical correlation. In assessing Michael's guilt, or the availability of the defense of insanity, the brain evidence *qua* evidence enjoys a qualitative status no different from any other type of evidence. It is a mistake to say, as Maoz and Yaffe do, that 'neuroscience can ... inform our understanding of the features of human beings in virtue of which they are criminally responsible for their behavior.' (122)

The second argument by Maoz and Yaffe concerns the role of neural mechanisms in judgments of criminal responsibility. This is their claim: '[N]euroscientific studies might illuminate the neural mechanisms that underlie those features of people in virtue of which they are criminally responsible for their behavior.' (123) The example they provide is voluntary action. As they say, correctly, 'criminal responsibility requires a voluntary act.' (124) It is certainly true that evidence regarding underlying neural mechanisms is potentially useful in assessments of responsibility. But the issue is *how* such evidence is useful. Two points are apt for comment.

The first point concerns integration of neuroscientific evidence into the criminal law. The criminal law requires evidence of mental states, among them intention and recklessness. Can neuroscience illuminate the content of these mental states at the level of individual assessment? This is an empirical issue and the evidence, to date, suggests that

² Stephen J. Morse, *Culpability and Control*, 142 U. PA. L. REV. 1587, 1660 (1994).

³ For a recent, detailed discussion of the point, see Michael S. Moore, *Stephen Morse on the Fundamental Psycho-Legal Error*, 10 CRIM. LAW & PHILOS. 45, 89 (2016).

neuroscience is a long way from making a definitive contribution. The trouble lies with the primary technical tool of neuroscience, the fMRI.⁴

The second issue is conceptual. In order to employ neuroscientific evidence in the criminal law context, it is necessary to have perspicuous legal concepts to which neuroscientific evidence might be attached. Consider voluntary action. Maoz and Yaffe point out that ‘criminal responsibility requires a voluntary act’. (5) Their definition of voluntary act is as follows: ‘a voluntary act is a bodily movement guided by a conscious mental representation of that bodily movement.’ (5) Maoz and Yaffe devote a large part of their article to discussion of Libet’s experiments in connection with voluntary action. Regrettably, the conception of voluntary action they advance is arguably confused.

In defining voluntary action as they do, Maoz and Yaffe assimilate voluntariness into psychology. They think voluntariness is a state of mind. This is an error. Voluntariness is not a psychological notion: it is a normative notion. As John Hyman notes,⁵ ‘the basic function of the concept is to inform the appraisal of individual conduct and in particular the assessment of innocence and guilt, and we cannot understand its structure if we do not understand its function, any more than we can understand the structure of the liver if we believe its function is to make blood . . .’ (77)

How do we assess the voluntariness of an act? Hyman suggests ‘a certain thing is done voluntarily if, and only if, it is *not* done out of ignorance or compulsion. This is not the same as saying that it *is* done knowingly and freely.’ (77) Voluntariness is best understood negatively. An act is voluntary unless it is the product of ignorance or compulsion.

Neuroscience is potentially quite useful in making judgments about criminal responsibility. At the moment, the science is not quite sufficiently developed to do more than provide a promise for the future. Additionally, more work needs to be done in figuring out just what we mean when we employ some of the key concepts of the criminal law, chief among them the notion of a ‘voluntary act’. Maoz and Yaffe clearly think that neuroscience can make a real contribution to enhancing the tools of the criminal law. However, they are modest in their claims for the power of neuroscience to fundamentally change the way we think about criminal responsibility. They are clearly not suffering from what Stephen Morse has termed ‘Brain Overclaim Syndrome’.⁶

⁴ For an excellent assessment of the limits of fMRI technology, see Walter Glannon, *What Neuroscience Can (and Cannot) Tell us About Criminal Responsibility*, in 13 *LAW AND NEUROSCIENCE: CURRENT LEGAL ISSUES* 14, 31 (Michael Freeman ed., 2011).

⁵ The discussion that follows relies upon JOHN HYMAN, *ACTION, KNOWLEDGE AND WILL* (OUP, 2015).

⁶ Stephen Morse, *Brain Overclaim Syndrome and Criminal Responsibility: A Diagnostic Note*, *FACULTY SCHOLARSHIP*, 2006 Paper 117, http://scholarship.law.upenn.edu/faculty_scholarship/117.