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# Neuroscience, Cognitive Psychology, and the Criminal Justice System

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# Neuroscience, Cognitive Psychology, and the Criminal Justice System

## INTRODUCTION

Deborah W. Denno\*, Guest Editor

This symposium on the linking of neuroscience, cognitive psychology, and law derives from a spectacular panel organized for the 2009 Annual Meeting of the Association of American Law Schools (AALS) by Susan Bandes, under the auspices of David Harris and the executive board of the AALS Section on Criminal Justice.<sup>1</sup> Fortunately for the *Ohio State Journal of Criminal Law*, the AALS Criminal Justice Section panel members graciously accepted the *Journal's* invitation to publish their articles in this issue, thereby providing an indelible contribution to a fast-growing field. Although this symposium is one of a number of projects on neuroscientific approaches to the legal system that have been organized over the years, readers will see something very different in the articles that follow. The contributions cover a distinctively important niche—a pragmatic focus on the practices of key law enforcement actors, namely the police, prosecutors, and punishers in the criminal justice community. By examining the decision-making of these individuals and groups in real world circumstances, through a range of brain sciences, the symposium's authors enhance the value that any single scientific discipline can give while also offering proposals that could be implemented immediately.

Such efforts can, of course, be laden with controversy. Cognitive neuroscience is a booming enterprise, either well—or ill—suited to law, depending on one's perspective.<sup>2</sup> As Professor Bandes's conclusion recounts, the AALS panel probed the complexity of this law-science merger with three goals in mind: to examine the interrelationship between neuroscience and substantive criminal law; to incorporate criminal procedure more directly into the examination in a way that past investigations have not done; and to scrutinize cognitive bias in decision-

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\* Arthur A. McGivney Professor of Law, Fordham University School of Law. I thank the faculty managing editors of the *Ohio State Journal of Criminal Law* for enabling me to serve as guest symposium editor, as well as the *Journal's* staff for assistance. I am grateful to Joshua Dressler and Julie Salwen for helpful comments.

<sup>1</sup> The 2009 AALS Criminal Justice Section panel members were Alafair Burke, John Darley, Nita Farahany, and Andrew Taslitz.

<sup>2</sup> Susan A. Bandes, *Conclusion: The Promise and Pitfalls of Neuroscience for Criminal Law and Procedure*, 8 OHIO ST. J. CRIM. L. 119 (2010).

making.<sup>3</sup> Taken together, these goals have resulted in a unique collection of scholarship by authors who are experts on interdisciplinarity.

To their credit, the symposium's authors integrate a number of brain sciences, an achievement reflected in part by the multiple terms used in the symposium's title and in Bandes's and my reference to "cognitive neuroscience."<sup>4</sup> A glance at the definitions of these terms demonstrates their connections to the heart and mind, body and soul, of criminal law and criminal procedure. For example, *neuroscience* is "the branch of the life sciences that studies the brain and nervous system . . . includ[ing] brain processes such as sensation, perception, learning, memory, and movement."<sup>5</sup> *Cognitive psychology* is a branch of the psychological sciences that examines *cognition*, a term that "collectively refers to a variety of higher mental processes such as thinking, perceiving, imagining, speaking, acting and planning."<sup>6</sup> The combined field of *cognitive neuroscience* "is a bridging discipline between cognitive science and cognitive psychology, on the one hand, and biology and neuroscience, on the other,"<sup>7</sup> originated in response to modern advances in brain measurements. While the substantive overlap between neuroscience and cognitive psychology is obvious, their methodology and techniques of measurement, not to mention history and overall orientation, can be profoundly different.<sup>8</sup> The creation of cognitive neuroscience was intended to gain strength from such variations, but it too is not without its detractors.<sup>9</sup> This symposium's authors do a good job of avoiding the mire of potential interdisciplinary conflict as well as recognizing the limits of applying any brain science to law.

An investigation of the criminal justice system typically begins, of course, with the police. Andrew Taslitz's article takes this approach to a more sophisticated level than others in making the point that his title so aptly summarizes: *Police Are People Too: Cognitive Obstacles to, and Opportunities*

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<sup>3</sup> *Id.* at 121.

<sup>4</sup> *Id.* at 119; *infra* text accompanying note 7.

<sup>5</sup> A more complete definition is as follows:

[Neuroscience is] the branch of the life sciences that studies the brain and nervous system. Among the areas of study included under the broadest definition are the physiology, chemistry, and molecular biology of the nervous system; issues of brain development; brain processes such as sensation, perception, learning, memory, and movement; and neurological and psychiatric disorders.

NEUROSCIENCE AND THE LAW: BRAIN, MIND, AND THE SCALES OF JUSTICE 206 (Brent Garland ed., 2004).

<sup>6</sup> JAMIE WARD, THE STUDENT'S GUIDE TO COGNITIVE NEUROSCIENCE 4 (2d ed. 2010).

<sup>7</sup> *Id.*

<sup>8</sup> *Id.* at 3–15; DICTIONARY OF COGNITIVE SCIENCE: NEUROSCIENCE, PSYCHOLOGY, ARTIFICIAL INTELLIGENCE, LINGUISTICS, AND PHILOSOPHY xviii–xxv (Olivier Houdé et. al. eds., Vivian Waltz trans., Psychology Press 2004) (1998).

<sup>9</sup> WARD, *supra* note 6, at 3–15.

for, *Police Getting the Individualized Suspicion Judgment Right*.<sup>10</sup> In *Police Are People Too*, Professor Taslitz contends that, along with the entire population, police possess subconscious psychological forces that can impair their ability to make good judgments, in particular, determinations concerning whether there is reasonable suspicion to stop or frisk, or probable cause to search or arrest. Efforts to comprehend the sources and operation of such psychological forces should enable the creation of mechanisms for containing the errors and biases that may result.

Taslitz begins by discussing the two ways that Fourth Amendment error can occur: first, by ensnaring the guilty by “pure luck” rather than by constitutional evidentiary dictates, and second, by searching or seizing innocent parties or, at a minimum, those selected without evidence.<sup>11</sup> Such mistakes appear with some frequency and their potential consequences are substantial. According to Taslitz, a particularized inquiry requirement, which involves a duty to investigate and evaluate evidence carefully, may reduce much of this error. At the same time, enforcing such a requirement contravenes an academic trend that hails the value of police intuition and hunches—a perspective which, in Taslitz’s eyes, has benefits but also drawbacks because intuitions can be biased and erroneous. Taslitz recommends instead that “intuitive decision making” by police complement, not replace, more conscious “systematic thinking,” which is characterized by rules and guidelines that promote accountability and justified decision-making.<sup>12</sup>

Relying upon voluminous and cutting-edge research, Taslitz accomplishes a tour de force investigation of police competency in producing the constitutionally required individualized suspicion judgment, especially in the context of the quick decisions made by “street cops,”<sup>13</sup> the police on the beat who perform the great majority of warrantless U.S. searches, seizures, stops, and arrests. In so doing, Taslitz analyzes studies on the capacity to form accurate initial conclusions about others, spanning from information on how first impression judgments are made (by both police and civilians) to the cognitive impact of a range of influences, including individual facial features, fundamental attribution error, cognitive load, empathy, and resistance to changing first impressions. Taslitz balances his argument by also providing an overview of the advantages of intuitive thinking by police, such as the ability to recognize behavioral patterns and anomalies while curbing complacency and rigidity. By constructing a cost-benefit analysis based on the plusses and minuses of both systematic and intuitive thinking processes, Taslitz argues for a requirement that police provide specific facts to validate their judgments and individualize suspicion so that the suspicion can be tied to a particular person or place. This goal encompasses a duty to investigate bolstered

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<sup>10</sup> Andrew E. Taslitz, *Police Are People Too: Cognitive Obstacles to, and Opportunities for, Police Getting the Individualized Suspicion Judgment Right*, 8 OHIO ST. J. CRIM. L. 7 (2010).

<sup>11</sup> *Id.* at 9.

<sup>12</sup> *Id.* at 12–13.

<sup>13</sup> *Id.* at 13.

by the additional duties of reasonably evaluating the information that is acquired and reasonably explaining the actions the police have taken. Overall, Taslitz's piece is an exemplary application of psychological research to police decision-making because it demonstrates how the challenges of human cognition can conflict with the legal system's goals of justice and fairness, even as our instincts and intuitions can also help us rapidly respond to challenges.

Such themes also resonate with other criminal justice actors and decision-making issues, as Alafair Burke so eloquently argues in *Prosecutorial Agnosticism*.<sup>14</sup> According to Professor Burke, most legal ethicists and prosecutors embrace the prevailing view that an ethical prosecutor should act as a "supreme juror" and pursue criminal charges only against those defendants the prosecutor perceives as guilty beyond a reasonable doubt.<sup>15</sup> This precept holds even though, as a constitutional matter, a prosecutor need only show probable cause (an objective standard divorced from the prosecutor's personal beliefs about guilt). Ethical rules that govern prosecutors are similarly undemanding.

Burke challenges the notion of prosecutor as supreme juror by examining specific cases and hypotheticals that prosecutors regularly pursue even when they are personally uncertain of a defendant's guilt, noting that courts also have encouraged prosecutors to engage in inconsistent charging decisions. Likewise Burke dismisses arguments raised by proponents of the supreme juror requirement that prosecutors are acting ethically as long as they are assured that a defendant was factually involved in an incident, as opposed to the unethical-acting prosecutors who press charges despite their doubts that they are implicating the right person. According to Burke, this so-called distinction between factual and legal guilt is wrong both descriptively and normatively, often resting on fragile justifications such as the belief that the defendant is guilty of something if not of the specific crime charged. Indeed, not only do prosecutors routinely pursue charges against defendants with questionable legal guilt, but there are also good reasons why this prosecutorial perspective could result in charges against defendants with questionable factual guilt.

With the support of cognitive science literature, Burke contends that, contrary to popular belief, agnostic prosecutors may protect the innocent more effectively than supreme juror prosecutors whose guilt-seeking focus and tunnel vision may result in a range of behavioral and perceptual biases. These biases include selective information processing, which starts when the prosecutor believes in the defendant's guilt, and the resulting failure to identify exculpatory evidence or revisit a conclusion. Likewise, this bias has reverberating effects given that judges, jurors, and other prosecutors heavily rely on the initial prosecutor's screening and belief in the guilt of the defendant and therefore may be less diligent in forming their own conclusions. Prosecutors would be more fair if they served as "vigilant agnostics" in light of evidence demonstrating the extent to which

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<sup>14</sup> Alafair S. Burke, *Prosecutorial Agnosticism*, 8 OHIO ST. J. CRIM. L. 79 (2010).

<sup>15</sup> *Id.* at 79–80.

personal viewpoints can impair neutrality.<sup>16</sup> Overall, then, Burke provides a highly nuanced and persuasive integration of practical lawyering and empirical cognitive research to demonstrate the dangers of prosecutors' personal beliefs on decision-making, as well as to call into question the supreme juror requirement.

A comparably compelling article is John Darley's account of the cognitive biases of punishers which he presents in *Citizens' Assignments of Punishment for Moral Transgressions: A Case Study in the Psychology of Punishment*.<sup>17</sup> In *Citizens' Assignments of Punishment*, Darley uses research from neuroscience and cognitive psychology to examine the moral judgments involved in an individual's "punishment impulse," specifically an individual's motivation for assigning a particular level of punishment to the wrongful actions of another person.<sup>18</sup> Darley also investigates the extent to which people's intuitive levels of punitiveness can be modified. For example, if the punishment impulse is not static and citizens are capable of altering their opinions about the degree of punishment they think others deserve, then the harsh sentences in the United States can start to decline and criminal justice practices can become more humane.

In a clever assessment of these dynamics, Darley relies on studies conducted using one of two major paradigms: "sentencing scenario" or "experimental game."<sup>19</sup> Some of these studies included neural imaging of brain processes, which allowed localization of the brain areas involved in the decision making. The results were analyzed according to classic theories of punishment (e.g., retribution, incapacitation, utilitarianism). In sentencing scenario studies, a respondent reads brief hypotheticals in which an actor has committed a moral wrong that the respondent can either exculpate or punish according to a specified scale of seriousness (for example, a certain number of years in prison). In experimental game studies, on the other hand, two or more respondents face intricate dilemmas, typically computerized, in which respondents are able to impose fine-based punishments on other respondents for behaviors that they view as moral violations. Differing trust situations are tested and all respondents are anonymous so that any "retaliatory responses"<sup>20</sup> that one respondent feels toward another will not be affected by personal feelings or ties. Research results from both the sentencing scenario and experimental game paradigms can then be examined via a dual process theory that frames the two types of decisions that study respondents can make—either reasoned decisions (which follow rules and implicate abstract areas of the brain) or intuitive decisions (which occur automatically and without

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<sup>16</sup> *Id.* at 80–81.

<sup>17</sup> John M. Darley, *Citizens' Assignments of Punishments for Moral Transgressions: A Case Study in the Psychology of Punishment*, 8 OHIO ST. J. CRIM. L. 101 (2010).

<sup>18</sup> *Id.* at 101.

<sup>19</sup> *Id.* at 102–03.

<sup>20</sup> *Id.* at 103.

conscious scrutiny and implicate “social-cognitive and emotional responses” of the brain).<sup>21</sup>

According to Darley, sentencing scenario studies indicate that citizens make punishment decisions based on retributive motives that are often formed intuitively from quickly-created beliefs of what a crime deserved. While experimental game studies report similar kinds of results, they reveal an added feature: respondents are actually willing to inflict real punishments on other people (an outcome that can only be surmised from sentencing scenario studies). Darley’s discussion of the implications of these results also incorporates a thorough evaluation of other, more traditional, psychological research such as that conducted on the sentencing decisions of magistrates and judges. In so doing, Darley takes a striking stand: retributive punitiveness is not inevitable. There is evidence, for example, that both individuals and groups have made conscious efforts to engage in reasoned (rather than intuitive) decisions about the punishments they intend to inflict on others and therefore act independently of culturally punitive pressures. Likewise, individuals are able to learn more humane methods of practicing criminal justice or, alternatively, substituting just-deserts intuition with forgiveness or restorative justice. In sum, then, Darley concludes a superb piece with a message delivered from science to law: while research shows people lean toward retaliation in their moral judgments, those people can change. And so can our criminal justice system.

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This symposium’s articles on neuroscience, cognitive psychology, and the criminal justice system provide a comprehensive and evenhanded perspective on the topic in the context of the critical decisions made daily by different law enforcement actors. May this forum be the first of many on this interdisciplinary relationship.

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<sup>21</sup> *Id.* at 113.