

**NEUROPRUDENCE: USING NEUROSCIENCE TO DEBUNK POSITIVISM'S  
SEPARATION THESIS AND CREATE A NICHE FOR NATURALISM IN OUR  
POSITIVE LAWS**

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We often undervalue the virtue of our moral disagreements. Whether one advocates gay marriage, or traditional family institutions; or whether one advocates a woman's right to choose abortion, or the right of the fetus to life; we neglect the beauty that flows from each moral stance. For each stance represents the culture we transmit amongst and between each other, and these values compete for legitimacy within our legal structures. We live in a society of competing moral realities, which often go unnoticed, or become neglected in the human quest to make sense of the laws we create. Positivism's separation thesis further exacerbates this problem.

INTRODUCTION

A major Jurisprudential debate centers on the extent to which moral reasoning and legal reasoning overlap. Naturalists maintain that positive law—human-made law— must comport with some notion of justice or morality to morally bind citizens to comply. For positivists, positive law binds all citizens independent of moral considerations. Natural law, in other words, does not exist.

Recent advances in neuroscience shed light on this pertinent debate. Two studies directly address the extent to which moral reasoning and legal reasoning overlap. Studies by Stephan Schleim, et al. (hereinafter Schleim),<sup>1</sup> and Joshua W. Buckholtz, et al. (hereinafter Buckholtz),<sup>2</sup> identify similarities and differences in parts of the brain that activate during legal and moral reasoning.

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1. Stephan Schleim, et al., *From Moral to Legal Judgment: The Influence of Normative Context in Lawyers and other Academics*, J. SOC. COGNITIVE AND AFFECTIVE NEUROSC. (Mar. 1, 2010), <http://scan.oxfordjournals.org/content/early/2010/02/28/scan.nsq010.full.pdf+html?sid=20bac778-be13-4eb2-938b-9ee830263475>.

2. Joshua W. Buckholtz, et al., *The Neural Correlates of Third-Party Punishment*, 2009 STAN. TECH. L. REV. 5. Appendix.

Another study conducted by Joshua D. Greene, et al. (hereinafter Greene),<sup>3</sup> addresses moral reasoning specifically. With these studies we can address a key aspect of the debate between naturalism and positivism: the separation thesis. The separation thesis constitutes a major tenant of legal positivism. The thesis holds that what the law is and what the law should be are separate inquiries. That is, law and morality are separate.

This essay argues that the separation thesis merely acts as a legal fiction to assist jurists in critiquing legal power structures, but the thesis hinders rather than furthers our understanding of what constitutes law. Neuroscience informs this jurisprudential debate by demonstrating that our cognitive processes overlap when employing legal and moral reasoning. Our understanding of what the law is must reflect this cognitive process. Naturalism and positivism overlap in this regard: what constitutes positive law derives from our normative reasoning, which incorporates our understanding of justice and morality.

Part I describes the naturalism and positivism debate, mainly focusing on the separation thesis. Part II of this essay describes the studies conducted by Schleim, Buckholtz, and Greene. Part III argues that the studies conducted by Schleim, Buckholtz, and Greene provide an answer to the naturalism/positivism debate by demonstrating that the separation thesis is merely a legal fiction that impedes rather than furthers our understanding of what the law is. Lastly, part IV argues that neuroscience secures a place for naturalism in our positive laws by demonstrating that moral reasoning informs the laws and legal structures we create.

## I. NATURALISM VS. POSITIVISM: THE UTILITY OF THE SEPARATION THESIS

The debate between naturalism and positivism centers on the extent to which morality informs our positive laws—Constitutions, statutes, common law, etc.— and whether positive laws that contradict a higher moral code, calling, or reason bind citizens to obey. Naturalist adhere to a higher calling than human-made laws; whereas, positivists maintain that only positive law exists and positive law binds without regard to issues of morality or justice.

### A. NATURALISM

Of the many types of natural law, all natural jurists share a belief that something higher than positive law binds people to obey. Marcus Tullios Cicero maintained that “[t]rue law is right reason in agreement with nature; it is of

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<sup>3</sup>. Joshua D. Greene, et al., *An fMRI Investigation of Emotional Engagement in Moral Judgment*, 293 SCI. 2105(Sep. 14, 2001), <http://www.sciencemag.org/content/293/5537/2105.full>.

universal application, unchanging, and everlasting.”<sup>4</sup> For Cicero, reason derives from a higher source—God<sup>5</sup>— but the human capacity to reason must fully develop in the human mind to facilitate law.<sup>6</sup> Law and morality are inseparable, as absolute values constitute law.<sup>7</sup> Saint Thomas Aquinas, in turn, divided law into three categories: divine, natural, and human.<sup>8</sup> Human laws must measure comparably to higher law, natural or divine, otherwise those human laws constitute no law at all.<sup>9</sup> Martin Luther King reiterated this belief when he wrote that a person has a moral duty to openly and lovingly disobey a human law (such as segregation) that does not square with moral law—i.e., a law that uplifts human personality.<sup>10</sup> For naturalists, the power to bind others to comply with human-made laws inheres in a fixed moral order that humans derive from reason or from God.

The more recent naturalists appeal specifically to reason as a guide to attain just laws that morally bind persons to obey. John Finnis argues that humans are endowed with intrinsic basic goods, each of which we value equally—life, play, aesthetic experience, knowledge, practical reasonableness, sociability, and religion.<sup>11</sup> These goods, for Finnis, are self-evident in that “it is rational to want these goods . . . since they are in general necessary for the framing and the execution of a rational life plan.”<sup>12</sup> From the list of basic goods we employ our practical reason to make moral judgments. We would denounce as unjust human laws that arbitrarily contravene any of the basic goods.<sup>13</sup> For Finnis, then, practical reason serves as our mechanism to derive positive laws geared toward justice by treating each basic good equally.

Lastly, John Rawls also relies on reason as our guide to creating just laws. Rawls devised the hypothetical contracting situation known as the original position.<sup>14</sup> Here, persons in society bargain from their own self-interest to create a system of cooperation.<sup>15</sup> The bargain takes place behind a veil of ignorance, which shields each person from knowledge of his or her social status, class, race, and

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4. Marcus Tullius Cicero, *De Republica*, III, xxii, 33.

5. *Id.*

6. Jill Harries, *Cicero and the Jurists: From Citizens' Law to the Lawful State* 54 (2006).

7. *Id.*

8. ST. THOMAS AQUINAS, *SUMMA THEOLOGICA*, pt. I-II, question 3, art. 8 (R. J. Henle, ed., Univ. Notre Dame Press 1993).

9. *Id.* at pt. I, question 95, art. 2, question 96, art. 4, question 93, art. 3.

10. Martin Luther King, *Letter From Birmingham Jail* (1963).

11. John Finnis, *Natural Law and Natural Rights* 85-90 (1980).

12. *Id.* at 82 (quoting JOHN RAWLS, *THEORY OF JUSTICE* 381 (rev. ed., 1999)).

13. *Id.* at 290.

14. RAWLS, *supra* note 12, at 102.

15. *Id.* at 104-05.

natural assets—strength, intelligence, etc.<sup>16</sup> Two principles derive from the original position:

First: each person is to have an equal right to the most extensive scheme of equal basic liberties compatible with a similar scheme of liberties for others.

Second: social and economic inequalities are to be arranged so that they are both (a) reasonably expected to be to everyone's advantage, and (b) attached to positions and offices open to all.<sup>17</sup>

These principles rank in serial order, so society cannot pass a law that diminishes a person or group's liberty in exchange for greater economic opportunity or capital.<sup>18</sup> A just society results when we construct our social, political, and economic institutions based on these principles.

Inherent in Finnis' and Rawls' philosophy lies the claim that morality and justice play an important role in framing our positive laws. We derive our morals and principles of justice from reason. For Finnis, basic goods are those things that we rationally need to fulfill our life plans. For Rawls, the principles of justice forge a system of cooperation that cares for the least advantaged. Since we construct our positive laws, these laws must reflect a society in which we would want to live and cooperate with one another.

## B. POSITIVISM

For positivists, however, morality and law do not necessarily occupy the same space. Positivists concern themselves with the antecedent question, what is law? More important than deciding whether a law is or is not just is deciding whether the thing we are discussing is law. The early positivists delineated three distinct principles: (1) law and morality are separate inquiries (separation thesis); (2) we must study law analytically; and (3) law is a command.<sup>19</sup> John Austin and Jeremy Bentham pioneered these principles. Regarding the latter claim, Austin sought taxonomically to determine what constitutes positive law: any command by a sovereign—a person habitually obeyed by others but who does not habitually obey another—the violation of which results in a sanction.<sup>20</sup>

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<sup>16</sup>. *Id.* at 118-19.

<sup>17</sup>. *Id.* 53.

<sup>18</sup>. *Id.* at 130-131.

<sup>19</sup>. H.L.A. Hart, *Positivism and the Separation of Law and Morals*, 71 HARV. L. REV. 593, 601 (1958).

<sup>20</sup>. John Austin, *The Provenience of Jurisprudence Determined* 11-14 (The Noonday Press, 1958) (1832).

Commands bind people without regard to whether the command flows from a despot, or whether some people consider such commands immoral or evil.

The separation thesis, specifically, became the focus of naturalists' attacks. H.L.A. Hart championed the separation thesis. Hart argued against the naturalist charge that judges do not follow rules when deciding hard cases, where it is difficult to ascertain whether a rule governs: i.e., does a rule that states no vehicles in the park cover roller skates or motor cycles?<sup>21</sup> Judges in the difficult case might invoke moral considerations. However, Hart points out that naturalists make a mistake in assuming that because judges may employ moral considerations that those considerations were always in the rule.<sup>22</sup> Additionally, judges often forward the purpose of legislation, purposes that may be morally neutral as much as evil.<sup>23</sup> Hart states that Austin and Bentham did not mean that moral principles may never form parts of legal rules, but that "in the absence of an expressed . . . legal provision, it could not follow from the mere fact that a rule violated standards of morality that it was not a rule of law; and, conversely, it could not follow from the mere fact that a rule was morally desirable that it was a rule of law."<sup>24</sup>

Today, the separation thesis is best understood as a means of critiquing power structures. If the scope of law and morality were the same, then our appeals to justice would have to take place within the very structure we wish to correct, the legal structure. For example, if a law prohibited public displays of homosexual affection by penalty of death, and law and morality shared the same scope, then a person accused of violating the rule would have to appeal to the law, the very thing condemning her, because she could not argue that the law is unjust or immoral when what is moral or just is law. Separating law and morality facilitates our ability to ascertain the "distance between what the law is and what the law ought to be."<sup>25</sup> This is the primary function of the separation thesis. However, the human brain does not so easily bifurcate moral and legal

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<sup>21</sup> Hart, *supra* note 19, at 606-614.

<sup>22</sup> *Id.*

<sup>23</sup> *Id.*

<sup>24</sup> *Id.* at 599.

<sup>25</sup> Robin West, *Three Positivismisms*, 78 B.U. L. REV. 791. West also discusses two different reasons for which persons or groups would want to separate law and morality. West argues that skeptical positivists separate law and morality to avoid universal moral norms, *id.* at 794; whereas, libertarian positivists separate law and morality to avoid relative or popular moral norms. *Id.* I do not discuss either of these because they are both forms of critique, regardless of what West argues. Also, because they actually add nothing to the discussion of what the law is. They merely constitute moral reasons for not including certain moral considerations into legal rules: skeptical positivists would consider relative or popular morals, and libertarian positivists would consider universal moral norms.

considerations, which may render the separation thesis nothing more than a legal fiction that impedes rather than furthers our understanding of what the law is.

## II. NEUROSCIENCE FINDINGS THAT CONCERN MORAL AND LEGAL REASONING IN THE BRAIN

Recent developments in neuroscience inform the debate between naturalism and positivism. Schleim's study demonstrates that moral and legal reasoning in the human brain activate and employ similar brain states. The study also acknowledges differences in active brain states between moral and legal reasoning. Buckholtz's study also demonstrates similar neurological patterns in the brain when people engage in legal and moral reasoning, specifically when determining whether and to what extent another person deserves punishment. Lastly, Greene's study delineates principles that guide humans in making moral judgments.

### A. SIMILARITIES AND DIFFERENCES IN MORAL AND LEGAL REASONING IN THE BRAIN

Oliver Goodenough suggested that neuroscientists conduct a study to determine whether moral or “justice-based thinking occurs separately from rule-based reasoning” to address the problem of the separation thesis in the naturalism/positivism debate.<sup>26</sup> He posited the “modular mind” model, which holds that different parts of the brain are designed for resolving different issues. For example, Phineas Gage suffered a head injury that damaged his ventromedial prefrontal cortex.<sup>27</sup> The damage disabled his ability to make sound moral judgments—he became vulgar, and irresponsible, whereas he once was sociable and responsible—but did not disable his ability to employ rule-based logic.<sup>28</sup> Goodenough hoped to uncover the workings of the mind to understand the law, since the brain appeared to “translat[e] the unarticulated models of natural justice into the articulated rules of positive law,” when undamaged.<sup>29</sup>

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<sup>26</sup>. Oliver R. Goodenough, Mapping Cortical Areas Associated With Legal Reasoning and Moral Intuition, 41 JURIMETRICS J., 429, 439 (2001).

<sup>27</sup>. *Id.*

<sup>28</sup>. *Id.* 434-36.

<sup>29</sup>. *Id.* at 439. Goodenough's argument touches upon another debate in Jurisprudence that closely resembles naturalism and positivism, and that is the debate between realism and formalism. Formalism holds that legal rules are self-sufficient and that legal problems must be resolved through legal rules and the logic deduced from those rules, but without extra-legal content such as justice, or morality. Realism holds that legal rules must conform to the purpose of the law, which is to create a better society, so judges and lawyers should seek to resolve legal

Several years later, Stephan Schleim conducted a study, concluding that regions of the brain associated with moral reasoning also relate to legal reasoning. Participants in the study were shown moral, legal, and neutral situations, which they were to rate as normatively right or wrong.<sup>30</sup> The study showed that whether making a moral or legal judgment, each participant's brain activated in similar regions: the medial prefrontal cortex (PFC), the superior temporal gyrus (STG), and the left temporo-parietal junction (TPJ), to name a few.<sup>31</sup> The PFC acts as a central hub that collects information from emotive parts of the brain before sending the information to the executive function.<sup>32</sup> This is also the damaged part in Phineas Gage's brain. The STG and TPJ are associated with Theory of Mind—parts of the brain designed to think about “the beliefs and intentions of others.”<sup>33</sup> The study indicates that moral and legal reasoning overlap to a large degree when deciding whether something is normatively right or wrong.

Despite these similarities, participants' brains enlisted the left dorsolateral prefrontal cortex (LDLPFC) and the left medial temporal gyrus (LMTG) more in legal than in moral judgments.<sup>34</sup> The DLPFC acts as the executive function of the brain and relates to rule-based logic rather than emotive content. Furthermore, the LMTG “has been associated with semantic tasks.”<sup>35</sup> The study, therefore, demonstrates that legal reasoning relies more on cold logic than intuitive moral heuristics, as speculated by Goodenough. This was confirmed in the study by the fact that participants took longer to react to legal rather than moral situations, which “resembles the overcoming of a prepotent response”—such as a moral intuition.<sup>36</sup> For example, a participant would take longer to judge a situation considered “morally right, yet legally wrong.”<sup>37</sup> Nevertheless, those parts of the brain associated with moral reasoning—theory of mind—still activate during all legal reasoning, as the study showed.

## B. MORAL AND LEGAL REASONING CONCERNING PUNISHMENT

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problems using any means necessary to accomplish the purpose of the law. The natural law and positive law debate centers on the legitimacy of law: what we may call law. The realism and formalism debate centers on solving problems through law. I only address the former.

<sup>30</sup> Schleim, *supra* note 1, at 2.

<sup>31</sup> *Id.* at 5.

<sup>32</sup> Mark Koenigs and Daniel Tranel, *Irrational Economic Decision-Making after Ventromedial Prefrontal Damage: Evidence From the Ultimatum Game*, J. NEUROSCI. 951, 951 (Jan. 24, 2007), <http://www.jneurosci.org/cgi/reprint/27/4/951>.

<sup>33</sup> Schleim, *supra* note 1, at 7.

<sup>34</sup> *Id.*

<sup>35</sup> *Id.* at 8.

<sup>36</sup> *Id.* at 7.

<sup>37</sup> *Id.*

A second study conducted by Joshua Buckholtz found a similar result in determining which parts of the brain activate when people decide whether and to what extent a person deserves punishment.<sup>38</sup> The study “revealed a key role for the right dorsolateral prefrontal cortex” (rDLPFC)—as opposed to the lDLPFC in Schleim’s study—when participants had to decide whether to punish a person “based on an assessment of criminal responsibility.”<sup>39</sup> Interestingly, the rDLPFC also plays a large role in deciding whether to punish unfair offers by a partner in the ultimatum game.<sup>40</sup> So, Buckholtz’s study concludes that the rDLPFC most likely plays a role in deciding whether to punish “norm violations.”<sup>41</sup> Even more revealing, the antecedent decision whether a person is responsible activates those parts of the brain associated with theory of mind, as in Schleim’s study, which activate during moral judgments as well.<sup>42</sup>

Furthermore, Buckholtz’s study found that regions of the brain associated with strong emotions—amygdala, PFC and posterior cingulated cortex—play a significant role in determining how severely to punish a norm violator.<sup>43</sup> Both of Buckholtz’s findings signal a similar role for the “prefrontal cortex and affective brain regions in legal reasoning [] reminiscent of their roles in moral judgment.”<sup>44</sup> Buckholtz found a correlation between his study and Joshua Greene’s study. Greene’s study found that the “lateral prefrontal cortex” activates when participants make an impersonal moral judgment—as in the trolley problem where a person must decide whether to pull a lever that diverts a runaway trolley, which will result in one death rather than five<sup>45</sup>—akin to when Buckholtz’s participants had to make a judgment whether someone deserves punishment. Also, Greene’s study found that the affective regions activate when participants make personal moral judgments—as in the footbridge problem where a person must decide whether to push a heavy person onto the

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<sup>38</sup>. Buckholtz, *supra* note 2, ¶ 3.

<sup>39</sup>. *Id.* ¶ 16, 22-23.

<sup>40</sup>. *Id.* In the ultimatum game, an offeror and offeree must cooperate to take home a set amount of money. The offeror can offer anything, but if the offeree rejects the offer, both leave with nothing. Studies have shown offerees to reject unfair offers, even though they risk losing out themselves, having entered the game with nothing. See Christina Jolls, et al., *A Behavioral Approach to Law and Economics*, 50 STAN. L. REV. 1471, 1489-93 (1998).

<sup>41</sup>. *Id.* ¶ 24.

<sup>42</sup>. *Id.*

<sup>43</sup>. *Id.* ¶17.

<sup>44</sup>. *Id.* ¶ 20.

<sup>45</sup>. Greene, *supra* note 3.



tracks to save five people<sup>46</sup>— akin to when Buckholtz’s participants had to decide how severely to punish another person.

However, Buckholtz qualifies his findings by stating that a difference lies between law and morality in that “assigning punishment to a crime is not a defining characteristic of moral judgment.”<sup>47</sup> Contrary to Buckholtz’s qualification, the fact remains that the decision to punish constitutes a moral judgment both in brain processes and in the act of punishment itself. As Buckholtz observes, “individuals punish . . . in proportion to the moral wrongfulness of an offender’s actions.”<sup>48</sup> Furthermore, Buckholtz makes a profound conjecture that contradicts his earlier qualification. Based on his findings, Buckholtz postulates, “our modern legal system may have evolved by building on pre-existing cognitive mechanisms that support fairness-related behaviors in dyadic interactions.”<sup>49</sup> Before state-sanctioned punishment existed to reinforce societal norms, people “relied on personal sanctions to enforce social norms.”<sup>50</sup> Buckholtz’s study confirms that this personal decision to sanction invokes moral considerations.

### C. MORAL REASONING IN THE BRAIN

To further bolster the correlation between moral and legal reasoning, Joshua Greene’s study sheds light on the inner workings of moral judgments. As mentioned, Greene studied participants’ neural reactions when making moral judgments in the trolley and footbridge problems. Greene found that participants’ brains employed emotive brain regions—PFC, amygdala, etc.—when faced with the personal dilemma of having to decide whether to physically push a person to her death to save five other people. Whereas, participants’ brains employed “classically ‘cognitive’ brain regions”<sup>51</sup>—DLPFC and parietal lobe—when faced with the impersonal dilemma of hitting a switch to divert the trolley to a track that would kill one person to save five.

Greene’s findings lead to the following conclusion:

Characteristically deontological judgments are driven by emotional processes, whereas characteristically consequentialist judgments are

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46. *Id.*

47. Buckholtz, *supra* note 2, ¶ 21.

48. *Id.* ¶ 5.

49. *Id.* ¶ 23.

50. *Id.*

51. Greene, *supra* note 3, at 2106; *see also* Selim Berker, *The Normative Insignificance of Neuroscience*, PHIL. & PUB. AFFAIRS 296, 304 (2009).

driven by “cognitive” processes, and these processes compete for one’s overall moral verdict about a given case.<sup>52</sup>

Interestingly, a later study demonstrated that patients with damage to their ventromedial prefrontal cortex—the area of the brain that projects emotional stimuli to executive functions—tended to invoke utilitarian reasoning when faced with personal and impersonal moral dilemmas, though the patients’ knowledge of “explicit social and moral norms” remained in tact.<sup>53</sup> This later study reinforces Greene’s finding that emotions play an important role in moral judgment.

Greene’s study has important implications in the debate between naturalism and positivism for three reasons. First, his study helps us distinguish and delineate underlying moral principles that the human brain employs. With such a finding we can conjecture that certain moral judgments potentially yield universal results. At minimum, we can posit a universal moral mechanism for moral reason. Second, Greene’s study demonstrates that some of our moral judgments—those that inflame the emotions—act at an unconscious level.<sup>54</sup> Goodenough expressed that morals may act at an unconscious level, though eventually reaching consciousness in the form of valid truths.<sup>55</sup> These morals inform our conscious reason when framing our positive laws. Third, Greene’s study coupled with Buckholtz’s study indicates similar neural substrates<sup>56</sup> for legal and moral reasoning, which indicates that we either cannot or should not attempt to conceptually sever morality and the law.

### III. AN ANSWER TO THE NATURALISM/POSITIVISM DEBATE THROUGH NEUROSCIENCE

With these important studies in mind, we can begin to understand the workings of the human mind when engaged in moral and legal reasoning to inform our understanding of what the law is, thereby providing an answer to the utility of the separation thesis. First, these studies demonstrate that the separation thesis

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<sup>52</sup>. Berker, *Supra* note 51, at. 301. Deontology holds that persons should not use others as a means to an end, but always as an end in themselves. Consequentialism, better known as utilitarianism, strives to create the greatest good for the greatest number of people.

<sup>53</sup>. Michael Koenigs, et al., *Damage to the Prefrontal Cortex Increases Utilitarian Moral Judgments*, 446 NATURE 908, 910 (Mar. 21, 2007), <http://www.nature.com/nature/journal/v446/n7138/full/nature05631.html>.

<sup>54</sup>. See Fiery Cushman, et al., *The Role of Conscious Reasoning and Intuition in Moral Judgment: Testing Three Principles of Harm*, 17 PSYCHOL. SCI. 1082, 1086-1088 (2006).

<sup>55</sup>. Goodenough, *supra* note 26, at 439.

<sup>56</sup>. Neural substrates are brain regions that underlie a certain kind of information processing. See Buckholtz, *supra* note 2, ¶ 17.

acts merely as a legal fiction that hinders rather than furthers our understanding of what the law is. Second, moral reasoning informs our positive laws whether we intend such a result or not. Therefore, the separation thesis serves no purpose in our understanding of what constitutes law.

#### A. THE SEPARATION THESIS IS A LEGAL FICTION

At best, the separation thesis acts as a legal fiction geared toward critiquing power structures. We may choose to bifurcate law and morality to determine how far our positive laws stray from our moral principles according to positivists. Yet, neuroscience demonstrates that those parts of the brain associated with moral reasoning are at work when we engage in legal reasoning. Furthermore, it would be strange to suppose that we do not have some preconceived notion already of what the law is supposed to be, especially if, as Buckholtz suggests, our system of norm compliance evolved from fairness considerations. If a positive law punishes public acts of homosexual affection with penalty of death, Schleim's study teaches that our moral minds will work in congruence with our legal minds to determine whether an act is normatively right or wrong. Additionally, Buckholtz's study teaches that when deciding the level of punishment, our brains invoke areas associated with strong emotions that work in personal moral dilemmas—those that act at an unconscious level. The scope of law and morality, in other words, share the same space in our brains, and our brains moralize the content of law.

The utility of the separation thesis loses its force when we envision a world where the brain completely bifurcates moral and legal considerations when we make normative judgments. Damage to the PFC causes the brain to approach moral dilemmas using utilitarian-like reasoning. Also, the example of Phineas Gage demonstrates that the PFC plays a central role in our ability to make sound moral judgments in our everyday lives. If our brains were damaged in this manner, then we could reproduce the positivist world governed by the separation thesis. Utilitarian reasoning, though employing parts of the brain associated with legal and moral reasoning, is the closest we can get to reproduce the positivist world. Not only would we not be able to construct a stable society, since all people would suffer from an inability to conform to moral norms and to act responsibly, but in those cases where our moral intuitions would normally prompt us to act or react, we would instead coldly calculate the outcome. For example, in the event we were to decide whether to put to death a defector from the law against public displays of homosexual affection, rather than activating those highly emotive parts of the brain that decide the degree of punishment, we would apply rule-based reasoning and execute.

Furthermore, we would lose our ability to fully develop the capacity to morally critique a legal regime if the brain completely bifurcated moral and legal reasoning. As Buckholtz's and Greene's studies demonstrate, we depend in large part on the emotive parts of our brains to make moral judgments. Without these parts fully active, we risk replicating the same systems through cold-utilitarian logic employed by the DLPFC. We could not adequately critique the law that punishes public displays of homosexual affection, because we would lose one of the most salient aspects of such a critique, human emotion—the personal nature of condemning a fellow human to death for showing affection to another human being, and our complicity in such a decision—that could otherwise alter our decision. We would not appreciate the distance between what the law is and what the law should be because the rule controls, and so long as we can justify our decision based on the greatest good for the greatest number, we could risk condemning a minority population's happiness for the majority's happiness.

A true understanding of what the law is and how the law derives its legitimacy must consider the cognitive mechanisms involved in the law-making process. Morality plays a large part in the whole process. So, we must understand morality's place in our legal structure as derived from our mental structure. Therefore, the separation thesis serves no legitimate purpose.

#### B. MORAL COGNITIVE PROCESSES INFORM OUR POSITIVE LAWS

We often hear, as well, the legislative body discussing the moral value of laws as they are enacted. As Goodenough pointed out, those morals that act at an unconscious level inform our positive laws. For example, the civil rights laws were passed at a time when various communities watched as segregation protestors were beaten, hosed down, and imprisoned for asserting their rights. The Supreme Court in *Brown v. Board* wrote a passionate opinion denouncing segregation.<sup>57</sup> We can surmise that the Justices' passions were inflamed and that moral heuristics informed their decision to render segregation unconstitutional.<sup>58</sup> Subsequently, those same personal emotions prompted legislators to pass the Civil Rights Act. One can hardly doubt the role morality played in passing these laws.

However, morality also played a role in passing the segregation laws in the first place. Just as slaveholders invoked the bible as an authority to moralize slavery,

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<sup>57</sup> *Brown v. Board of Education*, 347 U.S. 483 (1954).

<sup>58</sup> See Herbert Wechsler, *Toward Neutral Principles of Constitutional Law* 73 HAR. L. REV. 1, 26-35 (1959) (arguing against the Court's decision in *Brown v. Board of Education* due to a lack of restraint and logical principles).

whites invoked moral superiority over newly freed blacks. Nevertheless, as will be argued below, morality itself shifts as a cultural bi-product that reinforces the type of society a population wishes to construct. This fact does not speak against morality's place in positive law, which, regardless of our attempts to conceptually sever, remains fixed in the human brain, absent unforeseen damage.

Law's legitimacy derives from moral and legal—rule-based—reasoning. Hart's assessment that just because we believe a law is immoral does not mean it is not law, or just because we believe something is moral doesn't make it law is merely a tautology. Whether positivist like it or not, naturalism subtly, and at times expressly, influences our positive laws. The legal purpose legitimates the law and binds people to follow just as much as the moral reason for following the law. While it is true that if we deem a law immoral it does not ipso facto invalidate the law, this is only because we have a structure by which laws become invalid—held unconstitutional or abolished or amended by state or federal legislative bodies. Positivism neglects that the words drafted into law are prompted by the semantic and moral structures in the brain. Logic without emotion does not lead to sound decision-making, as demonstrated by Phineas Gage. Legitimate laws require a fully compatible brain with the ability to utilize moral and legal considerations in normative decision-making—lawmaking.

Unless psychopaths compose our legislative bodies,<sup>59</sup> our laws are framed in accordance with our cognitive model, which incorporates legal and moral considerations in lawmaking. These laws bind all citizens to comply, because they incorporate moral considerations, whether politicians consciously consider those moral reasons, or whether they creep in from unconscious neural wiring. Cases will arise when some group may claim that a law is immoral or unjust—for example, laws that do not recognize gay marriage but recognize heterosexual marriage. Those claims do not make the law immoral or unjust and therefore not binding. We must remember that undermining the separation thesis does not undermine the other positivist tenants that hold law is a command, or that we should study law analytically. The opposing moral claim in some cases merely constitutes a reality that moral considerations in law reflect the composition of the legislative body and the majority's moral principles. However, the minority groups' appeal to morality may influence the

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<sup>59</sup>. See Sabrina Weber, et al., *Structural Brain Abnormalities in Psychopaths—A Review*, 26 BEHAV. SCI. LAW, 7-28 (2008) (explaining that psychopaths suffer from damage to the frontal cortex, like Phineas Gage, possibly the amygdala, and lack empathy, emotion, appreciation for wrongfulness of violent action); see also Alison Abbott, *Abnormal Neuroscience: Scanning Psychopaths*, 450 NATURE, 942, 943 (Dec. 12, 2007) (explaining that psychopath features, such as lack of empathy, may fit well with certain jobs, such as police officers or politicians).

law to change. This point will be discussed more below. The point here is that the fact that morality influences our positive law in all respects undermines the force and utility of the separation thesis.

### C. POSITIVISM'S REBUTTAL TO FINDINGS IN NEUROSCIENCE

Positivist may rebut that even if neuroscientists discovered that the same parts of the brain are implicated when people engage in moral and legal reasoning, the brain recruits these regions to achieve different tasks than those used for pure tasks of moral reasoning when engaged in legal reasoning. Just because a correlation exists between the brain regions associated with moral and legal tasks does not mean a causal link exists between moral and legal tasks in the brain.<sup>60</sup> We should leave open the possibility that further studies in neuroscience will uncover causal mechanisms that suffice to form what we may rightly call a moral-mental task, and another for a legal-mental task. However, the human brain is so complex, composed of so many neurons, coupled with the “thousand trillion trillion molecules in the human body,” that we may never describe “in detail all of the underlying processes.”<sup>61</sup> The complexity of human behavior poses the same problem for science. Nevertheless, scientist often rely on an “effective theory,” which is a “framework created to model certain observed phenomena without describing in detail all of the underlying processes.”<sup>62</sup> For example, rather than attempt to solve an equation that determines human behavior, we use the “science of psychology,” which creates an effective theory of “free will.”<sup>63</sup> Likewise, we use neuroscience to model observed phenomena. What neuroscience shows us now is that moral and legal reasoning overlap.

The evidence now supports that those parts of the brain associated with moral reasoning nonetheless activate when a person engages in legal reasoning. Furthermore, theory of mind was found in all three studies to underlie all legal and moral judgments. As will be argued in more detail below, theory of mind forms the evolutionary basis of our ability to transmit culture—which includes our moral and legal norms—and create society. Since morality and legality evolved through our cultural transmissions, they are part and parcel of the institutions and laws we construct. That theory of mind activates for both legal

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<sup>60</sup>. See Buckholtz, *supra* note 2, ¶17, cmt. A56 (“A common criticism of fMRI is that it is inherently correlation. Brain activity changes are *correlated* with changes in the independent variable, but one cannot say definitively that the independent variable *caused* those brain activity changes.”).

<sup>61</sup>. Stephen Hawking, and Leonard Mlodinow, *The Grand Design* 32 (2010).

<sup>62</sup>. *Id.* at 32-33.

<sup>63</sup>. *Id.* at 33.

and moral tasks argues strongly against the separation thesis, notwithstanding the immediate lack of an explicit causal link.

#### IV. A CASE FOR NATURALISM USING NEUROSCIENCE

Our moral judgments occur in a systematic manner, which may provide a case for universal morality, or a universal mechanism for moral judgment, that buttresses an argument for naturalism's place in our positive law structures. Our laws and legal structures reflect the type of culture we transmit amongst and between one another, which include our cultural transmissions of moral values. Positivism's remaining tenants provide a means for understanding how our morals gain legitimacy—through the process of becoming positive law.

##### A. UNIVERSAL MORALS OR UNIVERSAL MORAL MECHANISM

Undermining the separation thesis does not undermine the other positivist tenants. Nor do I suggest that we should undermine the tenant that holds that law is a command, or that we should study law analytically. As to the former tenant, we can surmise that moral values that inform our legal reasoning once enacted into law, backed by a sanction, legitimate these moral values as prescriptive norms. The latter tenant provides the backdrop of this section's argument: neuroscience informs our understanding of what the law is.

Findings in neuroscience buttress an argument for naturalist principles of moral reason as a necessary component to legitimate our positive laws. We can utilize the studies discussed in this article as well as future studies that expose the inner workings of the human brain to derive uniform principles of morality, expressed when humans employ legal—rule-based—reasoning. Eventually, we may pinpoint moral neural wirings congruent with our legal neural wirings that forge a necessary component of sound (just?) legal norms. The reader will remember the principles of justice posited by both Finnis and Rawls. With respect to Finnis, we may find that those self-evident goods—life, knowledge, play, etc.—actually invoke strong emotional tendencies indicative of moral judgments in favor of policies that reinforce these goods. With respect to Rawls, we may find a similar strong emotional tendency toward liberty in a hierarchy of principles, and a personal stake in the well-being of the least advantaged persons in society.

Additionally, the studies pinpoint a large part that utilitarian reasoning plays in both our legal and moral reasoning. Finnis and Rawls argued against utilitarian thinking. Utilitarianism, in their view, cannot lead to justice as what makes the greatest good for the greatest number neglects the minority—something Martin

Luther King considered immoral and unjust, therefore illegitimate. Also, utilitarianism treats all basic goods posited by Finnis as incommensurate—one good is bound to have greater value for a greater number. Finnis considered the basic goods commensurate. Nevertheless, our brains utilize rule-based reasoning in our moral judgments in impersonal situations. These findings do not undermine the philosophy of Finnis or Rawls, but simply teach that we cannot avoid utilitarian reasoning. Nor should we. Utilitarian reasoning reaches both legal and moral parts of our brain. We may conclude that utilitarianism forms a universal moral compass that informs our positive laws in impersonal situations.

However, a naturalist may argue, if we consider utilitarian reasoning a necessary moral component to the legitimacy of our positive laws, we risk creating a precarious moral system whereby we balance rights and values away, thereby rendering no moral values absolute. Even if we accept that under the utilitarian model our morals become precarious, we may still posit that a universal moral mechanism exists in our brains. Our brains all utilize this type of moral reasoning. Neuroscience identifies this moral mechanism that occurs in our natural reasoning processes. The law is a product of our moral mechanism, which follows physical laws that we may derive using neuroscience. If we posit a universal moral mechanism, we need not consider our morals precarious, because each moral judgment shares equal validity within our moral mind. The only difference between competing morals is that one moral value gains legitimacy through legal processes, as will be discussed below.

Before I move on, I must clarify how it is that we may consider competing morals valid with respect to one another, though we cannot consider either value invalid, yet maintaining that we may consider these varying values absolute. First, my meaning of “absolute” is purely existential. As a society, we must account for impending social, economical, and political changes. We unduly limit ourselves if we consider “absolute” only those moral values thought fixed for all time. For this reason, moral “absolutes” are those moral values that exist as a result of cultural transmissions. Second, remember that in the trolley and footbridge problem, the same brain that judges the former situation morally valid to flip the switch, but the latter situation immoral to push the heavy person invokes seemingly contrary moral principles. In both situations the salient difference lies in the emotional impact in brain processes, yet both situations pose the same moral dilemma: kill one person to save five. Nevertheless, both moral judgments are equally valid, though seemingly contradictory.



Modern physics justify this phenomenon of competing realities under a “Model-dependent realism” theory.<sup>64</sup> “If there are two models that both agree with observation, . . . then one cannot say that one is more real than another.”<sup>65</sup> Stephen Hawking and Leonard Mlodinow make the following observation:

Model-dependent realism applies to the conscious and subconscious mental models we all create in order to interpret and understand the everyday world. There is no way to remove the observer-us-from our perception of the world, which is created through our sensory processing and through the way we think and reason. Our perception—and hence the observations upon which our theories are based—is not direct, but rather is shaped by a kind of lens, the interpretative structure of our human brains.”<sup>66</sup>

Applying this theory to morality may cause some naturalist unease, because if all moral judgments are equally valid, then a moral judgment that justifies genocide is equally valid to a moral judgment that considers genocide immoral. Morality becomes subjectively relative with no objective value and therefore incapable of morally binding others.

However, even if morality occurs in the human brain through subjective observations of objective manifestations in the world, morality appears objective through the cultural input we derive through our lives in a given society, and we treat morality objectively through the positive laws we enact. Buckholtz conjectured that “our modern legal system may have evolved by building on pre-existing cognitive mechanisms that support fairness-related behaviors in dyadic interactions.”<sup>67</sup> To fully appreciate the value and possibility of this conjecture consider the function that those parts of our brain associated with theory of mind serve. The reader will remember theory of mind was found to play a large role in both moral and legal reasoning in personal and impersonal moral dilemmas. Culture separates humans from other animals. “Culture consists of massive collections of complex skills and knowledge which are transferred from person to person through . . . language and imitation.”<sup>68</sup>

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<sup>64</sup> *Id.* at 46.

<sup>65</sup> *Id.*

<sup>66</sup> *Id.*

<sup>67</sup> Buckholtz, *supra* note 2, ¶ 23.

<sup>68</sup> V.S. Ramachandran, *The Tell-Tale Brain: A Neuroscientist’s Quest for What Makes Us Human* 117 (2011).

This ability to imitate depends on theory of mind, which allows us to take another person's point of view.<sup>69</sup>

The ability to employ theory of mind depends in turn on our deployment of mirror neurons. Mirror neurons work in the following manner: the same neurons that fire when a person completes an action, say reaching for a ball, also fire when that same person watches another perform the same action.<sup>70</sup> These mirror neurons most likely form the basis of our evolution of culture, including our language.<sup>71</sup> We learn to empathize with others. We learn to take on another's point of view. We learn to anticipate the intentions of others. We learn our moral values within our cultural transmissions through language, and the actions and preferences of others. For this reason, we find that those parts of the brain associated with theory of mind activate in our moral and legal reasoning. Both morality and legality evolved through our cultural transmissions. They are part and parcel of the institutions and laws we construct. Morality therefore derives from objective cultural transmissions that we subjectively internalize, some of which become hardwired in our neural circuitry, some of which continue to develop through our cultural learning processes.<sup>72</sup>

Model-dependent realism allows us to understand that competing moral realities coexist and are equally valid. The only difference is that one moral system gains legitimacy through legal sanctions. This argument does not aim to justify genocide. We must remember that we transmit culture amongst and between one another. If a society, like the United States, does not consider genocide a moral option, then we will not value genocide. In this manner, we control our moral values. Furthermore, model-dependent realism allows us to account for the existence of competing moral values. It is not enough just to say that a competing moral value is wrong, because someone is holding to that moral belief that was transmitted in some form. We account for these moral realities through model-dependent realism.

## B. MORAL LEGITIMACY OF THE LAW

Neuroscience secures naturalism's stake in the debate of law's legitimacy by demonstrating that morality informs our positive laws. A law binds citizens to comply so long as and to the extent that those aspects of moral reasoning constituent of a normal functioning brain are in working order. This

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<sup>69</sup>. *Id.* at 117-118.

<sup>70</sup>. *Id.*

<sup>71</sup>. *Id.*

<sup>72</sup>. *Id.* at 117-135.

understanding of law reinforces Cicero's naturalist exposition that true law is right reason in agreement with nature, and Finnis and Rawls' understanding that practical reason must guide our framing of positive laws with a view to justice. Our laws reflect the cultural transmissions of morality and justice that inhere in a given society.

Some naturalists and positivists may argue that morality under this system becomes the will of the majority, but majority rule does not guarantee justice because majority rule is based on might, not right.<sup>73</sup> Nevertheless, as argued under the Model-dependent realism thesis, those laws enacted through the legislative process consist of a valid moral reality based on observable cultural transmissions. As the neuroscience studies show, moral reasoning takes place with legal reasoning when making normative decisions, such as what is culpable or unacceptable behavior. And, moral reasoning takes place when deciding the related question, what constitutes adequate punishment? At every point in the law making process, in other words, moral reasoning takes place. Might does not make the normative value right or wrong. Cultural transmissions make the value right as such normative judgments constitute a moral reality.

Furthermore, those moral realities in the minority that lack prescriptive force maintain their validity and inform our law making process. Our history in the United States is replete with examples of the majority imposing its will on a minority, which eventually leads to a change toward equality: slavery abolished by the Thirteenth Amendment;<sup>74</sup> segregation held unconstitutional by the Supreme Court,<sup>75</sup> repeal of Don't Ask, Don't Tell by legislative Act.<sup>76</sup> Many of these changes come about through petitioning, protest, and civil disobedience. Such activities are cultural transmissions in themselves that forge moral realities, which may gain a consensus capable of prescriptive force through the law making process. Despite the fact that some changes may take time, rendering a minority captive to the majorities moral will under law, society begins and ends under this evolutionary process. Might does not make right. Moral realities make right. Might legitimates a moral reality with prescriptive force.

## CONCLUSION

Positivism's separation thesis carries no force or utility in our understanding of what the law is. Our understanding of law requires an understanding of what

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<sup>73</sup> HENRY D. THOREAU, *Resistance to Civil Government*, in WALDEN AND RESISTANCE TO CIVIL GOVERNMENT 226, 227 (William Rossi, ed., 2d ed. 1992) (1849).

<sup>74</sup> U.S. CONST. amend. XIII.

<sup>75</sup> *Brown v. Board of Education*, 347 U.S. 483 (1954).

<sup>76</sup> Don't Ask, Don't Tell Repeal Act of 2010, Pub. L. No. 111-321, 124 Stat. 3515.

legitimizes law in its prescriptive force. We find law's legitimate force in our cognitive faculties, which employ moral reasoning in all aspects of our legal judgments. Positive laws reflect the moral realities we learn and develop through cultural transmissions.

Neuroscience provides a positive outlook for our future understanding of moral and legal reasoning. We should take care to consider the neural workings of the human brain because understanding how the brain works reveals the cognitive processes that bring about the legal structures we create. The separation thesis is best understood as a relic of an outdated mode of analytical reason. Neuroscience provides the future outlook. Naturalism takes on a new look with neuroscience, and insulates itself into our positive law structures.