From Is to Ought
How Scientific Research in the Field of Moral Cognition Can Impact the Criminal Law

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Rapid technological advances in the field of neuroscience and cognitive psychology are claiming to have solved the millennia-old puzzle of moral cognition. If true, our societal structures — and with that the criminal law — would be gravely impacted. This paper concerns itself with four distinct theories stemming from the disciplines above, taking an in-depth look at the Dual Process Theory by JOSHUA GREENE and juxtaposing the findings to the consequentialist and retributivist theories of punishment present in the American Criminal Law Doctrine.

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I. Preface

«In every system of morality, which I have hitherto met with, I have always remarked, that the author proceeds for some time in the ordinary way of reasoning, and establishes the being of a God, or makes observations concerning human affairs; when of a sudden I am surpriz’d to find, that instead of the usual copulations of propositions, is, and is not, I meet with no proposition that is not connected with an ought, or an ought not. This change is imperceptible; but is, however, of the last consequence. For as this ought, or ought not, expresses some new relation or affirmation, ‘tis necessary that it should be observed and explained; and at the same time that a reason should be given, for what seems altogether inconceivable, how this new relation can be a deduction from others, which are entirely different from it.»

A. Historical Classification

Views on moral cognition have undergone several changes throughout the course of history, the conflict between reason and emotion being firmly rooted in its core. Ancient philosophers deemed it «a conflict between divinity and animality». SOKRATES traced the origin of moral judgement back to the daimonion, an inner voice guiding our sense of morality. In the 18th century, DAVID HUME questioned rationalism and swung the pendulum in favor of an emotivistic approach, claiming moral judgement to be the result of «some internal sense or feeling, which nature has made universal to the whole species». In an attempt to refute HUME, IMMANUEL KANT created his rationalist ethical theory, arguing moral judgement to be the result of practical reason guided by the categorical imperative. This domain – once exclusive to what we would now deem «armchair philosophers» –

4 PLATO, Apology, F. J. Church (trans.), 1963, 31 c, d.
5 Maintaining the basic position that «the ultimate ends of human actions can never [...] be accounted for by reason, but recommend themselves entirely to the sentiments and affections of mankind», HUME DAVID, An Enquiry Concerning the Principles of Morals, 1777, prod. J. Mamoun, C. Franks, 2010, Appendix I, Section V.
6 HUME (Fn. 5), Appendix I, Section I.
7 Despite their paradigmatic differences, KANT held HUME in high regard, going as far as saying HUME awakened him from his «dogmatic slumber», KANT IMMANUEL, Prolegomena to Any Future Metaphysics, 1783, G. Hatfield (trans. a. ed.), 2004, XIV.
8 One could have a far-ranging discussion on whether KANT created or discovered the categorical imperative. For its three versions, cf. KANT IMMANUEL, Grundlegung zur Metaphysik der Sitten, 1785, in: I. Kant, Akademieausgabe von Immanuel Kants Gesammelten Werken, Preussische Akademie der Wissenschaften (ed.), vol. IV, 1911, p. 421, 429, 437.
9 Courtesy of MAHLMANN MATTHIAS, Mind and Rights: Neuroscience, Philosophy, and the Foundations of Legal Justice, in: M. N. S. Sellers (ed.), Law, Reason and Emotion, 2017, p. 121 fn. 151. While one might argue that the term cannot be applied to philosophers before certain technological advances – claiming philosophy was a purely mental domain due to the inability to conduct wide-scale research –, it is important to keep in mind that studies are just one of many approaches towards empirical evidence and theories have been refined through observation since ancient times. One can still ponder whether the great minds of the past would have made use of the tools we have at our disposal today (for example fMRI scans) or if they would have regarded certain questions and domains to be

became part of the multidisciplinary empirical movement in the late 19th century, urging psychologists to «abandon their arm-chairs and go into the laboratories» in an attempt to unravel the mysteries of the human mind. Rapid scientific progress gave rise to neuroscience, which claims to have captured the problem of morality at its core – the human brain. But is neuroscience really capable of opening up the black box of cognition?

The following paper will be devoted to apprehending the current state of psychological and neuroscience research on moral cognition and applying the insights to the American criminal law doctrine, structured in style of the *Is-Ought Problem* Hume famously postulated. Commencing with a brief definition of the topics at hand, it will

exempt of the scientific method, surrendering only to the efforts of the mind.  

10 Haidt (Fn. 3), p. 816. It would be naïve to think that the research was purely empirical with no prior theoretical considerations. E.g., Kohlberg recognized the significant relationship between theory and empiricism, labelling it a «spiral circularity», Kohlberg Lawrence, A Current Statement on some Theoretical Issues, in: S. & C. Mogdil (eds.), Lawrence Kohlberg. Consensus and Controversy, 1986, p. 505. Garz supplies an interesting comparison, highlighting its similarity to a shoelace, «which is made up of one piece, then separated and pulled apart at the beginning of the threading only to be rejoined later», Garz Detlef, Lawrence Kohlberg – An Introduction, 2009, p. 30. 


12 Crossing Hume’s gap is the central hardship any scientific theory has to overcome on its journey to impacting philosophy and ethics. The original quote is displayed below the preface.

narrow down to four distinct takes on moral judgement, providing a comprehensive account of the Dual-Process Theory in particular – a blend between neo-emotivistic and cognitivistic approaches. The findings will be juxtaposed against foundational notions of the criminal law, questioning its underlying principles and highlighting the current cleft between what is and ought to be.

B. Terminology and Methodology

When it comes to defining the terms *morality* and *moral judgement*, there is – as with most topics up for philosophical debate – no distinguished meta-definition. However, it is possible to identify certain reoccurring elements and attempt to construct one accordingly. Such conceivable attempt may look like this:

*Morality is a [universal] system of principles and values, distinguishing between good and bad acts. Moral cognition is the individual’s ability to tap into that system, constituting moral judgement and internally nudging the individual towards the moral act.*

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11 This definition is constructed intentionally broad and incorporates elements from several authors, cf. Mahlmann Matthias, Rechtspolitik und Rechtstheorie, vol. 4, 2017, p. 286; Graf Tilman, Ethik und Moral im Grundgesetz: Grenzen der Moralisierung des Verfassungsrechts, vol. 285, 2017, p. 43 f.; Gert Bernhard/Gert Joshua, The Definition of Morality, in: E. N. Zalta (ed.), The Stanford Encyclopaedia of Philosophy, 2017; Turiel Elliott, The Development of Social Knowledge: Morality and Convention, 1983. Haidt, in contrast, defines moral judgement as «evaluations (good versus bad) of the actions or character of a person that are made with respect to a set of virtues held by a culture or subculture to be obligatory», Haidt (Fn. 3), p. 817. This view does not presuppose the existence of absolute moral values and only bases itself on what we unarguably know: their existence in our minds and influence on our behavior. For a similar view, see Tassy S./Le Coz P./Wicker B., Current Knowledge in Moral Cognition can Improve Medical Ethics, in: Journal of Medical Ethics, vol. 34, no. 9, 2008, p. 679. It should be noted that the idea of
While morality constitutes the system on a normative scale, moral cognition and moral judgement can be regarded as the intricate processes that take place in the individual’s mind. These processes are not limited to a priori reasoning and fall under the scrutiny of the scientific method. The inquiry process is divisible into two stages. First, the subjects are supplied with moral stimulus through confrontation with moral dilemmas – situations in which opposing duties are pitted against each other, making it impossible to adhere to one without neglecting the other. The second stage aims to capture the moral response in a format susceptible to further evaluation. This is where the sentiments start to diverge: whilst the psychologist might focus on behavioral aspects, the neuroscientist would consider brain scans to be the decisive piece of evidence. A closer look at subjective, individually manifesting morality does not necessarily lead to a non-cognitivist view of moral relativism; the alternatives will be evident in light of the mentalist and universal moral grammar theory in section II.D, cf. MAHLMANN MATTHIAS, The Cognitive Foundations of Law – An Introduction to the Mentalist Theory of Ethics and Law, in: H. Rottleuhner, Foundations of Law, A Treatise of Legal Philosophy and General Jurisprudence, repr. ed., vol. 2, 2007, p. 76. The scientific method regards the empirical side of the coin, concerning itself with the process of acquiring information through observation and experimentation. Empirical claims are used to describe the is, as in the observable reality of the situation, while normative claims concern themselves with how things should be, the ought, cf. PARDO/PATTERSON (Fn. 11), p. 1220 f.


16 It has to be stressed that the following theories do not provide an exhaustive account on the current discourse of moral judgement – they are intended as a comprehensive overview.

17 Cf. GARZ (Fn. 10), p. 39 f. KOHLBERG was regarded as a leading figure in the cognitive revolution, cf. HAIDT (Fn. 3), p. 816.


19 Lawrence Kohlberg’s wife is dying from a rare form of cancer. A local druggist discovers the only known cure, but charges Heinz more than he can afford. After ex-
haunting every legal means, Heinz decides to break into the store. Should Heinz steal the drug?23

In addition to the interviews, KOHLBERG made use of a variety of survey methods, such as evaluations from close peer groups and tasks on role-taking.24 The interviews were dedicated to bringing forth the subject’s most advanced form of reasoning, and – combined with the subsequent survey methods – sought to detect the underlying deep structures behind moral development.25

B. Requirements for Moral Development

KOHLBERG’s work is centred around the view of morality as an universal justice structure,26 concerning itself with the interdependence of rights and responsibilities.27

He deems three characteristics central for moral development:

(1) Innate universal social institutions such as family, economy, law, and government.28 Adhering to these institutions requires the ability to interchange perspectives through empathizing processes, leading KOHLBERG to conclude that both society and morality are «a structure of interaction between the self and other selves who are like the self, but who are not the self».29

(2) Key concepts – most notably justice – differentiating between various levels of theoretical difficulty.30

(3) Social stimulation as the motor behind moral development, achieved by partaking in social events from institutions listed in (1).31

C. The Stages of Moral Development

Evaluating his results, KOHLBERG created a framework consisting of six hard stages – increasing in sophistication – which he deemed vital for the development of moral judgement.32 The individual can progress

23 Cf. GARZ (Fn. 10), p. 55. The dilemma continues with alternate scenarios aiming to capture the subject’s full scope of moral judgement.
24 Cf. GARZ (Fn. 10), p. 40.
25 Cf. GARZ (Fn. 10), p. 33. KOHLBERG based this on a theory of competence inspired by NOAM CHOMSKY, who differentiates between a subject’s linguistic competence and performance: the competence is based on a theoretical, idealized starting point, while the performance is his actual, displayed use of language, cf. CHOMSKY NOAM, Aspects of the Theory of Syntax, 1965, p. 3 f. KOHLBERG thus did not limit himself to the subjects performance, but sought after his competence in an attempt to unravel innate deep structures of moral judgement. For a comprehensive overview, see GARZ (Fn. 10), p. 31 ff.
26 Regarding justice to be on the forefront of morality is not an unorthodox view. GIBBS claims an adequate morality to require «both the right and the good», suggesting its foundation in empathy and fairness, cf. GIBBS JOHN C., Moral Development and Reality: Beyond the Theories of Kohlberg, Hoffman, and Haidt, 2015, p. 7. Similarly, MAHLMANN regards both altruism and the «justice-as-proportional-equality-principle» to constitute the foundational judgements of morality, regarding empathy as a «central heuristic tool» for moral judgement, cf. MAHLMANN (Fn. 13), p. 587, 593 ff. KOHLBERG deemed the universality aspect of special importance, conducting his studies in various parts of the world.
27 Cf. GARZ (Fn. 10), p. 8. A similar view is held by BAUMARD/ShESKIN, who regard morality as questions concerning neither the good life, nor supererogatory actions, but rather a contractualists conception of proportioning the interests of oneself and others, cf. BAUMARD NICOLAS/
29 KOHLBERG (Fn. 28), p. 398.
30 Justice can be defined as «the interaction of the individual with its social environment in relation to the reciprocity of rights and responsibilities», KOHLBERG (Fn. 28), p. 398. In its most elementary form, justice concerns one-on-one reciprocity, transitioning (with scaling difficulty) to a familial, collective, and ultimately social level, cf. GARZ (Fn. 10), p. 25. This will be apparent when subsequently confronted with his stage theory.
31 «The more the social stimulation, the faster the rate of moral development», KOHLBERG (Fn. 28), p. 402.
32 Hard stage models are to be differentiated from soft stage models. The prior have four distinct
these stages through logical, rational reasoning, transitioning from an egocentric pre-conventional level to a sociocentric post-conventional level. A schematic overview of the mechanisms involved can be found in Figure 1 (see Appendix).  

Preconventional Level  
Stage 1: Comprehension is oriented to immediate punishment and obedience.  
Stage 2: Instrumentally purpose-oriented, “tit for tat”.  

Conventional Level  
Stage 3: Reciprocal interpersonal expectations and relationships, sociological communicative role conditions.  
Stage 4: Subject-subject relationships replaced by subject-system relationships, conformity with the law and social institutions.  

Postconventional Level  
Stage 5: Law as a social contract, the individual’s role in the subject-system view.  
Stage 6: Orientation on universal, moral principles, derived through a thought experiment similar to RAWLS’ veil of ignorance (here: “moral musical chairs”).  

The progression through the stages is correlational to the subject’s age, and it can be noted that most do not make the transition to the postconventional level.  

D. Mentalism and the Universal Moral Grammar Theory  
A more recent cognitive approach can be found in the mentalist theory. Morality, it claims, is based on a higher set of universal principles generating moral judgement, akin to the higher language faculty manifesting itself as spoken language. Drawing in large parts from the works of JOHN RAWLS and

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35 The following account draws from GARZ (Fn. 10), p. 39–46.


34 KOHLBERG regarded the underlying mechanisms to be of cognitive nature, claiming that the moral force in personality is cognitive. Affective forces are involved in moral decisions, but affect is neither moral nor immoral. When the affective arousal is channeled into moral directions, it is moral; when it is not so channeled, it is not. The moral channeling mechanisms themselves are cognitives, KOHLBERG LAWRENCE, From Is to Ought: How to Commit the Naturalistic Fallacy and Get Away with It in the Study of Moral Development, in: T. Mischel (ed.), Cognitive Development and Epistemology, 1971, p. 230 f.


38 Cf. GARZ (Fn. 10), p. 46. The stage model faces several challenges: The observable phenomenon of stage regression, a problematic Stage 4.5, the lack of empirical evidence regarding Stage 6, and a hypothesised cosmic Stage 7. For a deeper dive, consult GIBBS (Fn. 26), Chapter 3, 4.

39 The mentalist theory is hereby regarded a cognitive theory due to its hints towards the cognitive nature of the moral faculty, cf. MAHLMANN (Fn. 13), p. 580; DELTON ANDREW W./ KRASNOW MAX M., Adaptationist Approaches to Moral Psychology, in: J. Decety, T. Wheatley (eds.), The Moral Brain: A Multidisciplinary Perspective, 2015, p. 21. However, it is conceptually distinct from other cognitive approaches, e.g. KOHLBERG’s.

NOAM CHOMSKY, it sets the foundation for a universal moral grammar.\textsuperscript{41} The universal moral grammar theory has two distinct components. The moral grammar component is based on the notion that every natural language contains words to express certain non-reducible deontic operators, which constitute the distinct framework of the human mind and behavior.\textsuperscript{42} This moral grammar is deemed universal because some of its core elements, such as the moral ought, or foundational principles of justice and altruism, are regarded innate to the human mind.\textsuperscript{43} This is derived from the poverty of stimulus argument.\textsuperscript{44}

III. Emotive Account

A. Moral Dumbfounding

JONATHAN HAIDT provides a diametrical approach to cognitive models of morality. Moral judgement, he claims, is a relativistic phenomenon constructed by emotion and society.\textsuperscript{45} He instigates the point by highlighting the phenomenon of moral dumbfounding.\textsuperscript{46}

Julie and Mark are brother and sister. They are traveling together in France on summer vacation from college. One night they are staying alone in a cabin near the beach. They decide that it would be interesting and fun if they tried making love. At very least it would be a new experience for each of them. Julie was already taking birth control pills, but Mark uses a condom too, just to be safe. They both enjoy making love, but they decide not to do it again. They keep that night as a special secret, which makes them feel even closer to each other. What do you think about that, was it OK for them to make love?\textsuperscript{47}

Most participants immediately proclaim the act to be immoral, yet have a hard time justifying this belief, ultimately resorting to statements such as «I don’t know, I can’t explain, I just know it is wrong».\textsuperscript{48} He criticalises KOHLBERG’s exclusive use of reason-heavy dilemmas such as the Heinz dilemma, categorizing them as moral reasoning tasks which shroud the complete picture – namely one with «greater prominence to moral emotions and [...] moral intuitions».\textsuperscript{49}

B. The Social Intuitional Model

Moral judgement,\textsuperscript{50} HAIDT claims, stems from quick and automatic moral intuitions


\textsuperscript{42} Cf. MIKHAIL (Fn. 41), p. 144 ff.; MAHLMANN (Fn. 9), p. 122. This innate moral faculty would enable moral judgements such as impermissible, permissible, and obligatory to be generated, cf. DELTON/KRASNOW (Fn. 39), p. 21.

\textsuperscript{43} For a closer look at the mentioned ontogenesis of morality, cf. MAHLMANN (Fn. 13), p. 605. The term innate is to refer to a system that is largely pre-determined by the inherent structure of the mind, but whose ontogenetic development must be triggered and shaped by appropriate experience and can be impeded by unusually hostile learning environments, MIKHAIL (Fn. 41), p. 144.

\textsuperscript{44} The poverty of stimulus argument states that if a certain cognitive ability cannot be generated by outside stimuli, «at least some of the cognitive structures underlying this ability must be in-born», MAHLMANN (Fn. 9), p. 133. Developmental psychological studies revealed infants and young children capable of making the moral/conventional distinction, providing support towards the inertness of the foundational principles of morality, cf. DELTON/KRASNOW (Fn. 39), p. 21.

\textsuperscript{45} Cf. GIBBS (Fn. 26), p. 1; TASSY/LE COZ/WICKER (Fn. 14), p. 680.

\textsuperscript{46} This term originates from BJÖRLUND F./HAIDT J./SCOTT M., Moral Dumbfounding: When Intuition Finds no Reason, Unpublished Manuscript, 2000. They considers moral dumbfoundedness to be «a state in which “seeing that” conflicts with “reasoning why”», BJÖRLUND/HAIDT/SCOTT (Fn. 46), p. 11.

\textsuperscript{47} HAIDT (Fn. 3), p. 814.


\textsuperscript{49} BJÖRLUND/HAIDT/SCOTT (Fn. 46), p. 11.

\textsuperscript{50} He broadly defines moral judgement as «evaluations (good versus bad) of the actions or character of a person that are made with respect to a
(Link 1 in Figure 2, see Appendix), whereas cognitive moral reasoning\(^{51}\) serves the subsidiary role of post-hoc justification (Link 2).\(^{52}\) Additionally, he proposes that moral judgement should be regarded as an interpersonal process (Link 3, Link 4), putting emphasis on the social and cultural influences, referring to moral emotions as «those emotions that are linked to the interests or welfare either of society as a whole or at least of persons other than the judge or agent».\(^{54}\) These claims are purely descriptive, giving concise account on how moral judgement develops, not how it \textit{ought} to develop.\(^{55}\) For a complete overview of this model and its intricacies, consult Figure 2.

Haidt backs his social intuitionist model with following four arguments:

(1) Empirical research has shown that «the perception of a person or an event leads instantly and automatically to a moral judgement without any conscious reflection or reasoning», operating through the intuitive judgement link (Link 1).\(^{56}\)

(2) Only under very specific conditions is it possible to partake in reasoned judgement and private reflection (Link 5 and 6); in a conventional setting, post-hoc reasoning is deployed (Link 2).\(^{57}\)

(3) Post-hoc reasoning (Link 2) is not a memory of the cognitive processes underlying behavior, but rather a post-hoc justification based on \textit{a priori} moral theories, as is evident from people not being able to identify the reasoning underlying their decision.\(^{58}\)

(4) Illustrated on the basis of psychopaths, moral emotions – unlike moral reasoning – seem to supply the necessary \textit{ought}, dictating moral behavior.\(^{59}\)

### IV. Dualistic Account

#### A. Approach

Around the year 2001, efforts were made to locate a \textit{moral module} in the brain, but they have since failed.\(^{60}\) In what soon turned out

\(^{51}\) Moral intuition is regarded as «the sudden appearance in consciousness of a moral judgment, including an affective valence (good-bad, like-dislike), without any conscious awareness of having gone through steps of search, weighing evidence, or inferring a conclusion», Haidt (Fn. 3), p. 818.

\(^{52}\) Being the adversary to moral intuition, moral reasoning is defined as a «conscious mental activity that consists of transforming given information about people in order to reach a moral judgment», Haidt (Fn. 3), p. 818. Only very rarely does moral reasoning lead to reasoned moral judgement (Link 5); it is rather the result of one’s intuition-based judgement (Link 2).


\(^{55}\) Cf. Haidt (Fn. 3), p. 815.

\(^{56}\) Cf. Haidt (Fn. 3), p. 818.

\(^{57}\) Cf. Haidt (Fn. 3), p. 820 ff. Haidt concedes that the mind has dual-processing properties in (1), yet argues that reasoned judgement rarely takes place in everyday scenarios, cf. Greene (Fn. 53), p. 36. In comparison, the DPT regards moral reasoning as a «ubiquitous feature of moral common sense», cf. Paxton/Greene (Fn. 52), p. 513.

\(^{58}\) Haidt defines \textit{a priori} moral theories as a «pool of culturally supplied norms for evaluating and criticising the behavior of others», Haidt (Fn. 3), p. 822. According to Haidt, reasoning is not only post-hoc, but also biased through «coherence motives» and «relatedness motives», Haidt (Fn. 3), p. 821 f. See also Pretot/Brosnan (Fn. 48), p. 14 f.

\(^{59}\) Cf. Haidt (Fn. 3), p. 823 ff. It can be observed that moral action leads to internal gratification as a reward for altruistic behavior. Upon closer inspection, a paradoxical property of morality becomes clear: moral actions result in the satisfaction of the moral agent only if said agent intends the well-being of others, as opposed to his own, cf. Mahlmann (Fn. 14), p. 293 f.

\(^{60}\) It is now widely believed that the neural mechanisms behind moral cognition also participate in
to be a hallmark study, GREENE et al. sought out to find the neural mechanisms behind moral judgement. 61

Subjects were presented a wide array of moral and non-moral dilemmas and observed through the lens of an fMRI scan. The moral dilemmas were divided into personal and impersonal categories, involving variations of the so-called Trolley Problem. 62 The standard trolley scenario is as follows:

You are at the wheel of a runaway trolley quickly approaching a fork in the tracks. On the tracks extending to the left is a group of five railway workmen. On the tracks extending to the right is a single railway workman. If you do nothing the trolley will proceed to the left, causing the deaths of the five workmen. The only way to avoid the deaths of these workmen is to hit a switch on your dashboard that will cause the trolley to proceed to the right, causing the death of the single workman. Is it appropriate for you to hit the switch in order to avoid the deaths of the five workmen? 64

In the footbridge variant, 65 there is no longer a fork and the switch is replaced by a large man on a footbridge over the tracks. It is then questioned whether it is appropriate to push the stranger off the bridge onto the tracks below, stopping the trolley with his large body and saving the five workers.

B. Results

In the standard trolley scenario, most participants regarded it appropriate to flip the switch. 66 In the footbridge scenario, however, most people chose not to push the large man. 67 The fMRI scans revealed the footbridge scenario to recruit subject’s emotions to a higher degree, while judgements concerning the standard trolley scenario were found to be more closely resembling those of non-moral dilemmas. 68 Subject’s reaction times showed emotionally incongruent responses in the moral-personal condition (e.g., when participants responded «appropriate» to the footbridge scenario) to take longer than emotionally congruent responses. The other two conditions (moral-impersonal and non-moral) exhibited a trend in the opposite direction. 69

A new set of experiments further distinguished between easy moral-personal dilemmas and difficult moral-personal dilemmas based on subject’s reaction times. 70 Fo-

62 Personal dilemmas involve actions that «(a) could reasonably be expected to lead to serious bodily harm, (b) to a particular person or a member or members of a particular group of people, (c) where this harm is not the result of deflecting an existing threat onto a different party», Greene et al. (Fn. 61), p. 2107 f. en. 9.
64 Cf. Supplemental Data to Greene et al. (Fn. 61). There has been criticism as to why this variant — suggesting the subject to be at the wheel of the trolley — was regarded as impersonal and not personal, cf. Paro Michael S./ Patterson Dennis, Minds, Brains, and the Law: The Conceptual Foundations of Law and Neuroscience, 2014, p. 59 f.
65 This variant was first introduced by Thomson Judith Jarvis, Killing, Letting Die, and the Trolley Problem, in: The Monist, vol. 59, no. 2, 1976, p. 207 f.
66 Greene et al. (Fn. 61), p. 2105.
67 Greene et al. (Fn. 61), p. 2105.
68 Greene et al. (Fn. 61), p. 2107. Decisions in the moral-personal condition were coupled with higher activation of brain areas associated with emotion (Brodmann Area 9, 10, 31, 39) and significantly lower activation in areas associated with working memory (BA 7, 40, 46) compared to decisions in the moral-impersonal and non-moral conditions. For a compilation of alternate findings, cf. Schleim (Fn. 18), p. 189 ff.
69 Greene et al. (Fn. 61), p. 2107.
70 Greene J. D. et al., The Neural Bases of Cognitive Conflict and Control in Moral Judgement, in: Neuron, vol. 44, no. 2, 2008, p. 392. The aim was to test the hypothesis that different patterns of neural activity in response to the same class of moral dilemma are correlated with dif-
cusing solely on the difficult moral-personal dilemmas, they found increased dorsolateral prefrontal cortex activity (associated with cognitive control) when participant’s chose «appropriate» as opposed to «inappropriate»; a choice they consider to be in line with utilitarian decision making.\textsuperscript{71}

C. The Dual-Process Theory

The findings were compiled into a theory coined the Dual-Process Theory: moral cognition, so the Dual-Process Theory, stems from both intuitive emotional responses and more controlled cognitive responses.\textsuperscript{72} In special situations – as is the case with moral dilemmas such as the trolley problem – they play competing roles.\textsuperscript{73} This process has been visualised in Figure 4 (see Appendix).

GREENE compares the human brain to an SLR camera, which can operate in two complementary modes (automatic and manual).\textsuperscript{74} It is supposed to exemplify an «elegant solution to the ubiquitous design problem, namely, the trade-off between efficiency and flexibility».\textsuperscript{75} The automatic mode is subconscious, guided by reflexes and intuition, serving us well in our day-to-day life; the underlying processes are emotional.\textsuperscript{76} The manual mode is dedicated to general-purpose reasoning; it operates on a conscious level and allows us to recognize and adhere to certain rules.\textsuperscript{77}

The line between conceptual claims and descriptive conclusions is blurred in regards to the Dual-Process Theory, with GREENE stating to intend only the latter.\textsuperscript{78} The normative content that follows will be evaluated below.

V. Foundation of the Criminal Law

A. Purpose

The criminal law can best be characterised as an act-guiding system, deployed to maintain certain societal standards.\textsuperscript{79} It rests on several pillars and underlying maxims, some of which have explicitly been codified in Section 1.02 of the Model Penal Code.\textsuperscript{80}

\textsuperscript{71} This is used as an analogy for the Dual-Process Theory, cf. GREENE (Fn. 72), p. 696.

\textsuperscript{72} GREENE (Fn. 72), p. 696. MIKHAIL acknowledges this problem, but deems moral judgement to be on a level of complexity where simple deontological and consequentialist principles do not provide sufficient explanation, cf. MIKHAIL (Fn. 40), p. 103.

\textsuperscript{73} Cf. GREENE et al. (Fn. 61), p. 2107. GREENE clarifies the dual in Dual-Process to concern the type of processing, as cognitive outputs typically mirror their underlying processes, cf. GREENE JOSHUA D., Beyond Point-and-Shoot Morality: Why Cognitive Neuroscience Matters for Ethics, in: Ethics, vol. 124, no. 4, 2014, p. 697.


The resemblance to morality becomes apparent at first glance. Both the criminal law and morality constitute a system of values designated to influence behavior.\(^{81}\) However, there are discrepancies regarding their tools of guidance. While the criminal law imposes a wide array of external, government-induced sanctions for failing to follow conduct,\(^{82}\) morality avails to inward-facing, psychological means of punishment.\(^{83}\)

Justifying the necessary measures to fulfil the criminal law’s act-guiding purpose has resulted in the development of punishment theories, most prominently those of consequentialism and retributivism.\(^{84}\)

### B. Theories of Punishment

The consequentialist theory justifies punishment by its beneficiary future consequences, namely deterrence and incapacitation; punishment is regarded as a \textit{prima facie} wrong, only justified in light of excluding greater evil.\(^{85}\) Built on utilitarian soil, the forthbringing of greater social benefit than social harm provides sole grounds for justification.\(^{86}\)

On retributivist grounds, punishment is regarded as the justified reaction to wrongdoings of the actor, regardless of its future benefits.\(^{87}\) It has intrinsic worth and is to be proportioned to the desert of the actor.\(^{88}\)

There are also mixed accounts, incorporating elements of both consequentialism and retributivism. Most notably, HART distinguishes between three justificatory issues, namely (1) the aim, (2) subject, and (3) intensity of punishment.\(^{89}\) While the aim ought be utilitarian (1), he deems it impermissible to deliberately punish the innocent (2) or excessively punish the guilty (3).\(^{90}\)

Impacting our understanding of these two philosophical strands would lead to a fundamental change in the criminal law doctrine, and it is the science of moral cognition – namely the Dual-Process Theory – that claims to be able to do just that.\(^{91}\)

### C. The Normative Impact of Science

The issue at hand is as follows: the scientific method can reveal the way things \textit{are}, yet this observation states not what \textit{ought} to be.\(^{92}\)

Assuming the Dual-Process Theory to be a true account of the operations underlying moral judgement, it is not yet clear how this

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82 Cf. WILSON (Fn. 79), p. 6 ff.
83 Cf. MAHLMANN (Fn. 14), p. 293 f.
84 Cf. WILSON (Fn. 79), p. 53 ff.; PARDO/PATTERSON (Fn. 64), p. 179 f.
85 "All punishment in itself is evil. [...] if it ought at all to be admitted, it ought only to be admitted in as far as it promises to exclude some greater evil"., BENTHAM JEREMY, An Introduction to the Principles of Morals and Legislation, repr., 1907, Chapter XIII §1 II; GREENE JOSHUA D./ COHEN JONATHAN, For the Law, Neuroscience Changes Nothing and Everything, in: Philosophical Transactions of the Royal Society B, vol. 359, no. 1451, 2004, p. 1776.
86 Cf. WILSON (Fn. 79), p. 58; PARDO/PATTERSON (Fn. 64), p. 183 f.
90 Cf. HART (Fn. 89), p. 1–27.
91 There are many dissenting opinions, most notably that of STEPHEN MORSE, who believes the law ought not be phased by recent neuroscientific findings, cf. MORSE STEPHEN J., Neuroethics: NeuroLaw, in: University of Pennsylvania Law School, Public Law Research Paper no. 17/9, 2017, p. 22. However, he concurs that if science \textit{avert} able to fundamentally impact those foundational notions, the criminal law ought take notice, cf. MORSE (Fn. 91), p. 45.
92 Recall HUME’s dictum, quoted below the preface.
leads to a normative conclusion, and if it does, to which.

When it comes to changing the criminal law doctrine, (at the very least) three arguments have to be supplied. First, empirical findings (in this case the fMRI results) need to be linked to a mantling theory (Dual-Process Theory). A further argument needs to connect said theory to a normative claim, e.g. deontology being faulty. The criminal law can be reached when deontology is linked to retributivism. Alternatively, the empirical evidence could point towards free will being an illusion, and the criminal law could be reached through subsequent linking of free will to retributivism.

In both examples, the is-ought barrier is seemingly crossed. How can the conclusion umping by others is not just punishment in retributivist terms» be reached from mere brain scans? The answer is hidden in the modalities of said ought. It is used as a shorter form of »should do XY because it is the right thing to do«. There is a certain belief component attached, which in turn has to be based on something. For example, the normative claim «you ought not punch others» means «you should not punch others because it is the wrong thing to do». This can be reduced to the belief that punching others is wrong because it causes harm to them. If science (or any other form of empirical proof) were to show that getting punched by others is beneficial to one’s physical health and mental well-being (say, by awakening dormant healing abilities and causing the releasing dopamine and serotonin), that normative claim could be considered largely debunked.

Empirical observations that verify or falsify foundational notions of normative claims thus have an indirect influence on the claim itself.96

VI. Direct Approach to Rejecting Retributivism

A. Linking Emotion and Deontology

GREENE observes that when decisions are made with cognitive77 regions of the brain, they result in characteristically consequentialist judgement; when it comes to judgement that is in line with characteristically deontic principles — namely being justified in terms of rights and duties — the areas of the brain responsible for emotive responses are active.

Going back to the camera example, he considers this dichotomy between the automatic and manual mode to highlight that both have their respective strengths and weaknesses and should be used accordingly.98 The automatic mode is fast and efficient, yet requires prior trial-and-error experiences to shape it, lest its well-functioning would be

96 This thought is also shared by SINGER, who suggests that scientific advances »do not themselves imply any normative conclusions, but [they] undermine some conceptions of doing ethics which themselves have normative conclusions«, SINGER Peter, Ethics and Intuitions, in: Journal of Ethics, vol. 9, no. 3/4, 2005, p. 349.
97 Within the boundaries of the DPT, the term cognitive is not to be understood synonymous to information processing, as emotions also involve information processing. Rather, it is used as an antonym to emotion, in a sense that it does not succumb to automatic behavioral responses, involving an unbiased reasoning process, cf. GREENE (Fn. 53), p. 40.
98 Cf. GREENE (Fn. 73), p. 203; GREENE (Fn. 53), p. 37 ff. His terminological use of consequentialism and deontology is not congruent with standard philosophical usage, which is why he refers to it as «characteristically consequentialist» and «characteristically deontological». A statement is «characteristically consequentialist» when it is justified by utilitarian cost-benefit reasoning and harder to justify in deontological terms, and vice versa (with «characteristically deontological» judgement being justified in terms of rights and duties), cf. GREENE (Fn. 72), p. 699 f.
99 Cf. GREENE (Fn. 72), p. 714.
akin to a «cognitive miracles». Thus, while judging based on deontic yardsticks is most practicable in everyday life, one should rely on manual mode (implying cognitive reasoning) when it comes to dealing with unfamiliar moral problems; he terms this the No Cognitive Miracles Principle. This tension, according to his Central Tension Principle, stems from the inherent disparity in cognitive design between efficiency and flexibility.

Instead of localizing a first principle and deriving an answer from there, deontology is akin to deriving the first principle from the intuitively right answer. These claims are backed by a large body of independent research.

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100 These trial-and-error experiences can result from genetic transmission, cultural transmission or personal experience, as «these are the only mechanisms known to endow human automatic cognitive processes with the information they need to function well», GREENE (Fn. 72), p. 714.

101 Unfamiliarity can be the result of recent cultural development or moral disagreement. In the latter case, the «conflicting intuitions» causing the disagreement should be dropped for the sake of using manual mode, so GREENE (Fn. 72), p. 716 ff., 725. Why? Because our automatic mode is not equipped to tackle unfamiliar moral problems and make good intuitive judgement, regardless of what is meant by good, cf. GREENE JOSHUA D., Reply to Driver and Darwall, in: S. M. Liao (ed.), Moral Brains: The Neuroscience of Morality, 2016, p. 174. Good automatic judgement without prior shaping experience is a paradox — or in GREENE’s words – a cognitive miracle.

102 GREENE (Fn. 72), p. 715. Deontology is regarded as unfit as it displays an emotional affinity towards more personal force and mere spatial proximity. The insignificance of personal force is highlighted by pointing out that it should not make a difference morally whether the man in the footbridge scenario was instrumentalised through physical force (pushing him off) or a switch (opening a trapdoor below), cf. GREENE (Fn. 72), p. 713. In regards to spatial proximity, GREENE deems it paradox that we regard it deeply wrong to abandon a bleeding stranger on the side of the road (even if it would result in us having to replace our leather car seats), yet we do not feel an obligation to save the lives of countless people in impoverished parts of the world through a donation of lesser or equivalent value than the to-be-replaced seats, cf. GREENE JOSHUA D., From Neural “Is” to Moral “Ought”: What are the Moral Implications of Neuroscientific Moral Psychology?, in: Nature Reviews, vol. 4, 2003, p. 848. For a further read on the paradox of the situation, cf. SINGER PETER, Famine, Affluence, and Morality, in: Philosophy & Public Affairs, vol. 1, no. 3, 1972. A similar example is provided by PETER UNGER, who compares refusal to donate to proven charitable organisations with allowing a trolley to kill a child rather than diverting it, destroying one’s precious vintage Bugatti in the process, cf. UNGER PETER, Living High and Letting Die: Our Illusion of Innocence, 1996, p. 135 ff.

103 Deontic judgement is regarded as a remnant of our emotion-driven primal past, operating the quick, automatic responses for the up-close scenarios our ancestors faced, hereby being nothing more than the rationalisation of our intuitive emotional behavior, the «“cognitive” expression of our deepest moral emotions», GREENE (Fn. 72), p. 699; GREENE et al. (Fn. 70), p. 398; GREENE (Fn. 53), p. 62 ff.

104 GREENE (Fn. 72), p. 725. This is illustrated in a striking experiment: ordinary folk and professional philosophers are presented with cases similar to footbridge (harm as means) and switch (harm as side effect) in mixed order. When participants (ordinary folk and philosophers alike) were presented footbridge first, they were biased towards answering switch to be impermissible as well. When presented with switch first, the Doctrine of Double Effect was evoked 50 % more frequently in the philosophers, providing a congruent answer to footbridge (conforming to the differentiation between means and side effect). Further questioning revealed that the philosophers adjusted the theory underlying their decision to be consistent with their choice in the scenarios; thus, the philosophers that deemed footbridge and switch impermissible (in that order) committed a mistake somewhere, as they failed to invoke the Doctrine of Double Effect. What are the implications? The Doctrine of Double Effect, GREENE claims, is not the underlying principle where judgement is derived from, but simply the codification of our intuitive judgement. For a detailed account on the difficulty of biting this metal bullet, cf. GREENE (Fn. 72), p. 719 ff.

105 GREENE (Fn. 72), p. 700 ff. The weight lies not on the individual studies, but their entirety, as «each piece, taken in isolation, is open to alternative interpretations», GREENE (Fn. 72), p. 706. For further studies he cites, cf. GREENE (Fn. 53), p. 41 ff.; GREENE (Fn. 73), p. 204 ff.
B. Linking Deontology and Retributivism

GREENE knows that deontology and retributivism are two conceptually distinct moral theories, yet he regards them virtually indistinguishable within the domain of punishment.\(^{106}\) Two arguments are supplied:

(1) Consequentialism is seen as the antagonist to both deontology in the field of morality and retributivism in the field of punishment theories. Theories which are opposed to the consequentialist account in the latter field are founded on notions of retributivism to some degree.\(^{107}\) Thus, strengthening the consequentialist position leads non-consequentialists – and with that retributivists – to shaky ground.

(2) Traditional proponents of deontology tend to endorse punishment on retributivist grounds.\(^{108}\)

A wide array of evidence is provided for this claim.\(^{109}\)

\(^{106}\) Cf. GREENE (Fn. 53), p. 78 en. 6.
\(^{107}\) Cf. GREENE (Fn. 53), p. 75.
\(^{108}\) Cf. GREENE (Fn. 53), p. 75. This notion can best be observed in regards to IMMANUEL KANT.
\(^{109}\) Studies revealed ordinary people to be conceptually inclined with consequentialist principles of punishment (as means of deterrence), yet sway to the retributivist account of desert when confronted with a tangible case, cf. CARLSMITH K. M., DARLEY J. M./ROBINSON P. H., Why Do We Punish? Deterrence and Just Deserts as Motives for Punishment, in: Journal of Personality and Social Psychology, vol. 83, no. 2, 2002, p. 286 f., 289, 292 f. Participants were found to disregard consequentialist means even when directly confronted with them, punishing in proportion to the emotional outrage they felt, cf. GREENE (Fn. 53), p. 50–55. Neuroimaging studies of the ultimatum game confirmed these results, with participants choosing to punish as an ends itself – in spite of no deterring impact – followed by increased activation of the anterior insula and caudate nucleus (both brain regions associated with emotions), cf. RILLING J. K. et al., The Neural Correlates of Theory of Mind within Interpersonal Interactions, in: NeuroImage, vol. 22, no. 4, 2004, p. 1697, 1700 ff. A cross-cultural study on the moral condemnation of harmless actions revealed higher socio-economic status (=SES) and age – thus more developed cognitive capacities – to lead to consequentialist responses (not condemning harmless actions). The opposite (low SES and young age) lead to characteristically deontological decision making, cf. GREENE (Fn. 53), p. 55 ff. Moral judgement could better be predicted by offensiveness than harmfulness, cf. HAIDT J./KOLLER S. H./DIA M. G., Affect, Culture, and Morality, or Is It Wrong to Eat Your Dog?, in: Journal of Personality and Social Psychology, vol. 65, no. 4, 1993, p. 624 f. While the majority of scenarios tested for do not provide a direct link between the condemnation of harmless actions and deontology, the results are identical in the broken promise case, which GREENE labels as a case of «downtown deontology», GREENE (Fn. 53), p. 57. The studies are thus primarily a confirmation of the cognitive nature of consequentialism and should be apprehended cautiously for means of linking emotional, punitive punishment to deontology.

\(^{110}\) Cf. MAHLMANN (Fn. 9), p. 111.
\(^{111}\) Cf. MAHLMANN (Fn. 9), p. 116 f.; MAHLMANN (Fn. 14), p. 274 f.
in the significantly lower reaction times). Characteristically consequentialist judgment, on
the other hand, can never be reached by automation; it is always the result of a slower
weighing process recruiting distinct areas of the brain (dorsolateral prefrontal cortex). MAHLMAN
deems this self-refuting, regarding the very core of utilitarianism, namely
the principle of utility, to be derived from a deontic notion.

The latter must not hold true. The innate, natural expression of human psychology –
namely that of justice – satisfies the impartiality requirement of morality without hav-
ing to fall back to deontic notions. However, is this innate, natural expression of human psychology used to justify conse-
quentialism not based on the very same emotional intuitions GREEENE criticises de-
ontology for? Not necessarily. GREEENE never claimed consequentialist judgment to be
void of emotion, quite the contrary:

GREEENE sympathises with HUME’s allegation that all moral judgement has an affec-
tive basis. GREEENE differentiates between the «alarm-like», emotional urge of deon-
tological judgement and the consequentialist weighing process, which, while it too is sub-
ject to emotion, takes these into account as relevant factors. This reminds of SIDGW-
wick’s solution, who differentiated between perceptual, dogmatic, and philosophical intu-
tion, avoiding the predication by assigning the intuition underlying consequentialism to the more sophisticated, latter kind.

D. Deontology as Heuristics

GREEENE makes it clear that the frequent accusations of him being opposed to emotion-based moral judgements are false, as he attributes strengths and weaknesses to both
modes (automatic and manual).

This seems to miss the crux of such accusations. One might imagine a computer with
two pre-installed programs: Program A is able to create vivid, captivating stories based
on the input of a few key words. Program B is able to solve any mathematical question
posed, akin to a calculator. It can now be said that the computer has two different
programs with their respective strengths and weaknesses, which is what GREEENE claims
the dual-processing mind to have. If, however, Program B were also capable of con-
ceiving stories of the same calibre as Program A, only taking longer to do so, it would
vastly discredit Program A.

It is clear that heuristic-like judgements have a strong practical benefit for everyday life, as
we cannot ponder about every miniscule decision. However, assigning efficiency as
the only advantage means settling for automatic mode not due to its superiority in that
field, but real-life practicability: if one had enough time at their disposal, the factually
correct answer to any question would result from manual, cognitive thinking. The fre-
quent accusations turn out to be true, as GREEENE is discrediting deontology on a
conceptual basis by writing it off as heuristics.

E. Interim Conclusion

It seems that both retributivism and deontology share common roots in emotional soil –
one that consequentialism is not based on. Judging by the premise that these

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112 GREEENE (Fn. 53), p. 65; for his account on the reaction times, cf. GREEENE et al. (Fn. 61),
p. 2107; GREEENE et al. (Fn. 70), p. 390; PAXTON; GREEENE (Fn. 52), p. 521 f.
113 GREEENE (Fn. 53), p. 64.
114 Cf. MILL JOHN STUART, Utilitarianism, 1863, in: John Stuart Mill, Utilitarianism, Batoche Books
(ed), 2001, p. 41 ff. The usual objection is dismissing MILL’s account as fallacious, yet there is
good reason to regard it as deductively valid, cf. MILLGRAM ELIHU, MILL’s Proof of the Principle
115 GREEENE et al. (Fn. 70), p. 397; GREEENE (Fn. 53), p. 64.
116 Cf. GREEENE (Fn. 53), p. 64.
117 See SIDGWICK HENRY, The Methods of Ethics, 1874, J. Bennett (ed), 2015, Chapter 8;
GREEENE, Ethics, p. 724.
118 Cf. GREEENE (Fn. 72), p. 714. Automatic mode relying on deontology and manual mode on
consequentialism.
119 As elaborated in section VI.C, GREEENE is in-
clined to follow HUME’s account that all moral
judgement stems from affect; it is the differen-
tiation between «alarm-like» emotions and an
emotional weighing process that is crucial in this
regard, and what is meant with emotional soil.
roots are indeed capable of discrediting deontology, bridging the gap to retributivism requires little extra effort. Nevertheless, it is a daring assumption to make.

VII. Indirect Approach to Rejecting Retributivism

A. Presupposed Picture of the Law

The criminal law regards persons as conscious and rational agents with the capacity to enact control over their own actions (so called practical reasoners). This view houses on a folk psychological framework: action is causally explained through certain mental – not brain – states such as desires, beliefs, intentions, and plans.

120 Pardo/Patterson claim that this does not undermine even a subset of retributivist views, as correlating a theory to emotional areas of the brain is a mere observation and does not prove the theory to be incorrect (only showing how things are, not how they ought to be). Greene, they claim, provides no independent criteria that determines consequentialist reasoning to be more correct than its deontic counterpart, see Pardo/Patterson (Fn. 64), p. 189 f.

This view is a strawman. While Greene did suggest deontology to be on the wrong path towards moral truth, he never claimed consequentialism to have discovered such either. Instead, he simply regards consequentialism as the current best available standard for public decision making, Greene (Fn. 53), p. 77; also Greene (Fn. 101), p. 175. Deontological decision making is discredited by its link to moral intuition, thus prone to morally irrelevant influences (e.g., mere spatial proximity).


When talking about actions and behavior, we consider a certain someone – a person pulling the strings – to be in charge. While it is up for debate whether we should narrow this personhood down to humans only, there is mutual agreement on agency being a necessary attribute ascribed to said person. In the criminal law’s retributivist sense, only those agents that can be blamed for their actions deserve punishment. Thus, the presupposed picture is that of a free agent.

B. The Problem of Free Will

This notion of free will entails the ability to do otherwise, to act as an uncaused causer. It stands in contrast to determinism: the idea that the world in its current state is completely determined by (i) the laws of physics, and (ii) past states of the world. How do the two relate?

123 A distinct feature of this personhood being their status as a morally responsible agent and a special kind of control exclusive to them, see Eshleman Andrew, Moral Responsibility, in: E. N. Zalta (ed.), The Stanford Encyclopedia of Philosophy, 2016. This thought can be taken further, questioning whether the status of being a person is exclusive to humans or if it includes or ought to include certain (nonhuman) animals as well. Darwin made a famous conjecture regarding this, saying that »any animal whatever, endowed with well-marked social instincts, would inevitably acquire a moral sense or conscience, as soon as its intellectual powers had become as well developed, or as nearly developed, as in man«, Darwin Charles, The Descent of Man, and Selection in Relation to Sex, 1871, in: J. T. Bonner, R. M. May (eds.), The Descent of Man, and Selection in Relation to Sex, 1981, p. 71 f.


125 Greene/Cohen (Fn. 85), p. 1777; Morse (Fn. 91), p. 16; Morse (Fn. 81), p. 54.

126 Greene/Cohen (Fn. 85), p. 1777. There are different types of determinism, but for the sake

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There are three main approaches to this conundrum, namely those of hard determinism, libertarianism, and compatibilism.\(^{127}\)

Hard determinism deems free will and determinism to be incompatible, advocating the latter to be true.\(^{128}\) Libertarianism, too, is built on incompatibilist grounds, yet it regards determinism to be false.\(^{129}\) Compatibilism, as the most common view among professional philosophers,\(^{130}\) presumes the previous two approaches to be conceptually mistaken in regards to free will: rather than being an uncased causer, ‘agents must simply have the capacity to determine their actions by reasons and to act in light of those reasons and are not compelled to act in the ordinary meaning of compulsion’.\(^{131}\) The criminal law operates under this compatibilist framework of ‘practical rationality’ even in absence of genuine free will.\(^{132}\) Causation is thus not a per se excusing condition and has to be linked to compromised rationality; believing otherwise would be what MORSE terms the ‘fundamental psychosocial error’.\(^{133}\)

C. The Curious Case of Mr. Puppet

GREENE/COHEN maintain the position that the dualist position of the criminal law cannot be upheld.\(^{134}\) What MORSE regards as the «fundamental psychosocial error», they understand as the gap between folk intuition and the compatibilist view of the law.\(^{135}\) The example of Mr. Puppet aims to highlight this discrepancy:

Mr. Puppet is a hypothetical person that has been genetically scripted by a scientist who sought after designing a human to commit a specific crime. This scientist controlled every variable of Mr. Puppet’s life, every single event — from his infancy to his teenage years — with 95% accuracy. Just as the scientist predicted, Mr. Puppet committed said crime. Can Mr. Puppet be deemed guilty?\(^{36}\)

1. Approaching from Neuroscience

The Mr. Puppet argument presupposes determinism and targets the law’s compatibilist stance. For proof of said determinism, one might point towards the studies of BENJAMIN LIBET, which revealed subject’s decisions to be made 350–400 milliseconds before they were consciously aware of their intention to act.\(^{137}\) LIBET adds that there was a timeframe of 100 milliseconds between conscious intention and performance, during which the subject could assert a veto over his decision.\(^{138}\)

Free will seems largely debunked. After all, how much freedom is really left when human decisions once deemed their own are revealed to be that of their subconscious? Our consciousness would turn out to be a mere byproduct of subconscious brain activ—

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\(^{127}\) GREENE/COHEN (Fn. 85), p. 1777; MORSE (Fn. 81), p. 45.

\(^{128}\) GREENE/COHEN (Fn. 85), p. 1777.

\(^{129}\) GREENE/COHEN (Fn. 85), p. 1777.

\(^{130}\) Survey results showing that 56% are either compatibilist or tend to compatibilism, see BOURGET DAVID/CHALMERS DAVID J., What do Philosophers Believe?, in: Philosophical Studies, vol. 170, no. 3, 2014, p. 476, 490.

\(^{131}\) MORSE (Fn. 81), p. 48.

\(^{132}\) PARDO, PATTERSON (Fn. 64), p. 199. Criminal responsibility is thus not dependent on the notion of free will and fully compatible with determinism, cf. MORSE (Fn. 122), p. 533.


\(^{134}\) The kind of mind-body dualism concerned with here is that of the mind as a non-physical mental entity that has an impact on the physical realm, see GREENE/COHEN (Fn. 85), p. 1784.

\(^{135}\) GREENE/COHEN (Fn. 85), 1777. They argue that the law ought to reflect the «moral intuitions and commitments of society», GREENE/COHEN (Fn. 85), p. 1778.

\(^{136}\) LIBET/PATTERSON (Fn. 85), p. 1780.


\(^{138}\) LIBET (Fn. 137), p. 529, 537 f. This veto ought not be understood as a kind of free will, but rather as a free-n-lon, see HAGGARD PATRICK, Neuroethics of Free Will, in: J. Illes, B. J. Sahakian (eds.), The Oxford Handbook of Neuroethics, 2011, p. 221. A critical analysis on the scientific validity and conclusions can be found in MORSE (Fn. 122), p. 551.
ity on which the agent has no influence – he did not make the decision, it was his brain.  

This notion has to be rejected. A readiness potential in the brain is far from a decision, and subconscious brain activity preceding conscious one is not proof of determinism, but rather how one would expect the brain to operate. There are also several methodological concerns. A 400 millisecond delay between conscious and subconscious processes for pointing a finger at a clock under strict laboratory settings does not translate into everyday action capacity involving decisions magnitudes more complex. There are scenarios in which humans have to consciously choose to act in a span shorter than 400 milliseconds – the swing/no swing decision of a professional baseball player being an example. 

This does not rule out that one day, neuroscience might be able grant full insight into the ‘mind’s clockwork’ and reveal our thoughts to be nothing more than red neurons firing against blue neurons. Current neuroscience, however, is still far from that.

2. Approaching from Physics

Determinism – on a conceptual level – seems to be built on false notions of physics. The idea of a fully causal universe is based on Newtonian physics, yet ever since the discovery of quantum mechanics, we know this account to be incomplete. Assuming quantum mechanics to cause truly random events, the world in its current state would be the result of (1) the laws of physics, (2) the past state of the world, and (3) random quantum mechanical events. This randomness seems to be incompatible with determinism.

There are two ways to tackle this argument. First, the premise of quantum mechanics as a truly random force of nature might be mistaken. The accounted randomness of quantum-mechanical events is based on a form of the Copenhagen interpretation, and there is an ongoing discourse in the field as to whether that holds true. For the sake of the argument, we can assume quantum mechanics to be truly random. What follows? Causal determinism would lose its footing, as future events could not be deduced from past world states anymore. This, however, is neither proof of the reality of free will, nor the retributivist precondition of desert. Human action – in the sense of an uncaused causer – is no more free in a fully random universe than a fully determined one.

D. The Curious Case of Mr. Puppet Continued

In regards to GREENE/COHEN’s argument, we ought to presume determinism to hold at

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140 Cf. MORSE (Fn. 122), p. 550.


142 In the scenario of a 90 miles per hour pitch from less than 60 feet away, the batter has less than half a second to make a conscious decision, cf. PARDO, PATTERSON (Fn. 64), p. 129, fn. 31.

143 GREENE/COHEN state the example of a futuristic scanner that might be able to track every neuron and neuronal connection in the brain, analyse the data and visualise the human decision-making process (red neurons vs blue neurons), cf. GREENE/COHEN (Fn. 85), p. 1781.

144 Cf. GREENE/COHEN (Fn. 85), p. 1780.

145 This interpretation states that there is no definitive position of a particle prior to its observation; once observed, it leads to a wave function collapse, and only then does it have a concrete state beyond a mere wave function probability, cf. BOHM DAVID, A Suggested Interpretation of the Quantum Theory in Terms of ‘hidden’ Variables, I, in: Physical Review, vol. 85, no. 2, 1952, p. 167 ff.

146 There are alternate interpretations of quantum mechanics which do not hold footing in true randomness, advocating a deterministic account instead, for example the De Broglie-Bohm Theorem, see BOHM (Fn. 145), p. 169 ff. Another possible solution – and part of a more recent debate – would be the many-worlds interpretation, which assumes a corresponding universe for each possible state of the wave function to exist, see EVERETT HUGH, The Theory of the Universal Wave Function, 1956, p. 63 ff.
least partially true, as the following question would not arise if definitive proof of free will were present: Can Mr. Puppet be deemed guilty? After all, the law regards him as rational as any other member of society, his actions a reflection of his desires and beliefs. Yet the intuitive reaction is no, Mr. Puppet ought not be blamed, at least not in a retributivist sense. He cannot be regarded guilty, as he was not at fault; his actions were carried out by him, yet not his own. Blaming him for what he did seems wholly out of place – he was simply a victim of «neuronal circumstances».

It is not intended for Mr. Puppet to be exempt from all punishment and free to roam the streets, as consequentialist principles of deterrence and incapacitation would still apply. Only the retributivist component of genuine moral blame would be alleviated.

Criticising the law for diverging from the folk’s incompatibilist intuition seems hypocritical coming from GREENE, as he now bases an argument off the same moral intuitions he deemed unreliable and biased in regards to deontology. Even if humans were intuitively incompatibilist, one would commit the original naturalistic fallacy to assume this statement to be of any direct normative value. MORSE deems it a form of «neuroarrogance» to expect fundamental notions of human behavior and the law to change based on a science that has not been able to provide a solution to the mind-body problem.

This leads to an important question: Why does the burden of proof lie on the incompatibilist theories? The law’s compatibilist account has provided no genuine proof either – the construction of «practical reason» seems to be a placeholder until the mind-body problem is resolved. Would it not make more sense to stray from retributivist notions until humans have been proven to be free agents? By asserting blame in state of such uncertainty, the maxim of in dubio pro reo is violated – a glaring error when considering that the criminal law’s act-guiding purpose could be fulfilled on wholly consequentialist grounds.

VIII. Conclusive Remarks

It is not without reason that the discourse on moral cognition is ongoing in such a fierce manner. After all, the stakes could not be any higher. When GREENE first pre-
presented his DPT seventeen years ago, he was subject to a plethora of critique. To this day, his essays are being cited upwards of two-hundred times a year and remain integral to the discourse of moral cognition. The potential impact is immense, and if true, would extend to the deepest corners of our lives, the criminal law being a rather proximate one.

However, one should not overplay the findings. Not only is the DPT based on neuroscientific data which is highly susceptible to methodological errors, but it also stands in competition to several other theories – some more sophisticated than itself. The dual-process theory resembles a further argument – albeit a strong one – in the ongoing debate on human thought and morality; a debate that has remained inconclusive since millennia. The battle of Hume and Kant, once exclusive to the domain of the mind, has now been taken to the laboratories.

The criminal law is founded on the same notions that are currently at stake. As science advances, these might change, but for now, lawmakers ought not worry.

about the mind, then that’s the wrongest we’ve ever been about anything. [...] We’ll be in deep, deep trouble if we have to give it up.» Fodor Jerry A., Psychosemantics: The Problem of Meaning in the Philosophy of Mind, 1987, p. xii. Schleim (Fn. 18), p. 195.

156 «Voodoo correlations», statistical smoothing, circular analysis, and reverse interference, to name some of the current issues with neuro data, cf. Mahlmann (Fn. 9), p. 118 f.
IX. Appendix

Figure 1, the cognitive reasoning process behind moral judgement; retrieved from Haidt (Fn. 3), p. 815.

Figure 2, the links of the social intuitionist model; retrieved from Haidt Jonathan, Figures for «The Righteous Mind: Why Good People are Divided by Politics and Religion», 2012, Chapter 2 Figure 2.4 (accessed July 27th, 2019).
Figure 3, the act-tree approach in regards to footbridge (left) and bystander (right); retrieved from MIKHAIL (Fn. 50), p. 119.

Figure 4, an overview of the Dual-Process Theory; retrieved from PAXTON/GREENE (Fn. 52), p. 514.