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Moral Mentation: What Neurocognitive Studies of Psychopathy May Really Offer the Internalism/Externalism Debate

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Abstract

A persistent debate about moral capacity – and neuroethics – focuses upon the internalism-externalism controversy. Internalism holds that moral judgments necessarily motivate an agent's actions; externalism views moral judgments as not inherently motivating an agent to perform moral actions. Neuroethical discussions of the putative cognitive basis of moral thought and action would be better informed if neurocognitive research would yield data sufficient for validating one side or the other. Neuroscientific studies of psychopaths have been employed in this regard. However, it seems that neuroscientific investigations to date have been inadequate to wholly define the nature of moral knowledge, and thus fail to preferentially support (or foster) an exclusively internalist or externalist view. Thus, moving forward it will be necessary to carefully define questions that neuroscience is employed to address and answer, and to ensure that empirical findings are not distorted to support preconceived theoretical assumptions. In this way, neuroscientific investigations can be used in a conciliatory way to both balance views of processes operative in moral cognition, and raise ethical, legal, and social questions about what research findings actually mean, and what medicine – and societies – will do with such information and meanings.

Keywords

Internalism, Externalism, Psychopathy, Neuroethics, Morality, Cognition, Emotion, Neuroscience

Introduction

Philosophers, legal scholars, social scientists, and psychologists have long questioned the nature of morality and the factors that drive moral judgment and behavior. The rise of biological psychology throughout the twentieth century provided a new lens through which to consider these questions and examine moral theories. Most recently, such pursuits have engaged the neurosciences in an attempt to develop empirically informed theories of moral cognition and action. Such neuroscientific studies of putative mechanisms of moral cognition and behavior has come to be regarded as one of the disciplinary foci of the field of neuroethics.

To be sure, the iterative use of neurotechnologies such as functional magnetic imaging (fMRI), forms of encephalography (namely quantitative electroencephalography

and magnetoencephalography), and neurogenetics have been instrumental to studies of the putative neural correlates of moral thought and behavior. In response to growing opportunities to experimentally formulate and test theories about moral cognition, neuroethics entails another – and perhaps more important – focus, namely, the analysis and proper interpretation and use of neuroscientific methods and data, inclusive of information about the possible neurocognitive processes involved in moral thought and action (Shook and Giordano 2015).

We do not share in the stern (neuro)skepticism that denies that neurotechnologically-enabled insights into brain architectures and processes should affect an understanding of morality. Morality is normative, the skeptics remind us, while scientific knowledge is merely factual – what we think is moral should not be warped by what we know is occurring. Skeptics have a logical point, but only that logical point. If moral ends are treated merely as ends, as static states of affairs either satisfied or not, then they do seem aloof from crude considerations about reaching them. What ought to be done cannot follow from what happens to be, if the skeptical point needs a logical axiom. Yet, that axiom is ambiguous, for there is a sense in which what ought to be can only follow from what happens – an outcome that ought to be done can only follow from preceding events that cumulatively produce that envisioned outcome. Expecting a future state of affairs to come about in the absence of a prior sequence of concrete matters producing that state of affairs is nothing short of expecting a miracle. No set of facts (i.e., what "is") logically implies what should morally happen (i.e., what "ought" to be). All the same, fulfilling what should morally happen surely implies some sequence of factual conditions yielding that outcome. An *ought* materially implies some *is*.

Due to that material implication, an adequate conception of a moral end includes some understanding of effective capacities for fulfilling it. Thinking about people attaining a moral end without any thought to relevant capacities that enable people to attain those ends is a diversion of mere imagination. Disassociating peoples' actual capacities from moral ends and then wondering why people's behaviors are more or less moral is even more futile. A conception of a capacity that has gone unrevised by available knowledge about brain activity controlling behavior is just an item of folk psychology: part of an interesting story about human nature that people have been in the habit of telling each other. Much of what has passed for moral philosophy, something too precious to compare with facts for those neuroskeptics, is nothing but idealized folk psychology. Moral philosophizing tends to fixate on ideal moral ends to the neglect of actual human capacities. Neuroethics need not be controlled by moral theories uninformed by

developmental psychology, cognitive psychology, and neuroscience (Shook and Giordano 2014).

The neuroskeptical worry that ethics will be dominated by neurology need not be indulged, either. There is plenty of middle ground for ethics and neuroscience to enhance each other. Ordinary moral psychology is vitally useful for human sociality, without question. Although hominid morality is far older than *Homo sapiens'* ability to talk about people being moral (or not moral), the proclivity for discussing how to be moral is not incidental. Labeling mental events accompanying behavioral habits intensifies their familiarity and allows better anticipatory control. Favoring or disfavoring recognizable mental outlooks thereby guides consequent behaviors; so effective mental outlooks are treated as "moral" insofar as they serve as capacities conducive to moral conduct. Furthermore, the only way to define a moral capacity in precise terms is to relate that capacity to a specific moral end. As a corollary, the contribution of a brain region's activity to a moral capacity cannot be estimated unless that moral capacity has been specified. Nothing happening in the brain correlates with "being nicer to people," but that is not because neuroscience failed to find some neuroanatomical locus for niceness. Rather, it is because "being nice" is just a vague behavioral end, not to mention an indistinct mental notion. Only a specific moral capacity for a concrete moral behavior can be experimentally associated with identifiable brain processes. This is not ontological reductionism, but only scientific empiricism.

Neuroethics can consult both neuroscience and moral psychology with growing confidence as their relevance to ethics becomes more interdependent. That interdependence is secured by their coordination with specific behavioral outcomes: well-defined moral ends. Neither neuroscience nor moral psychology by themselves should dictate matters to neuroethics. Detectable brain activities are not obviously *for* anything, and they mean very little until they are elicited through the exhibition of certain behavioral capacities; while competing views of psychological capacities that float freely from specified behavioral ends lead to abstract debating about what those affairs mean and what they are for. Specified links between psychological capacities and behavioral capacities are therefore essential for empirically associating brain processes with a person's ability to fulfill envisioned ends (Shook and Giordano 2016).

For example, there surely are many brain processes that allow one to fulfill a moral duty towards another. Learning which detectable neural activities in particular are essential processes needed for moral conduct is a goal that requires additional information. Certain brain processes do permit one's capacity for a specific kind of behavior, but it is not yet known whether such behavior is moral – is that behavioral

capacity deployed in order to be moral? (Conduct not done to be moral cannot be moral conduct even if there are morally good results.) And certain mental states do enable one's capacity to perform a specific moral end, but it's not yet known whether such states are moral – is that psychological capacity enacted due to morally worthy states? (Minding what one is doing to fulfill a moral end does not ensure that one is of a moral mind.)

Neuroethics should scrutinize claims about "moral" mental events that are allegedly due to brain processes "for" morality. Consider the following inference, and suppose that premises 1, 2, and 3 are all accurate:

1. Jo has the belief that s/he should state that X is morally right.
2. Jo does state that "X is morally right."
3. Brain activations A, B, C (etc.) are correlated with Jo's pronouncement that X is right.
4. A, B, and C are correlated with Jo's moral belief.
5. Therefore, A, B, and C are processes for morality.

Proposition 4 does not follow from 1–3, because "moral belief" is left ambiguous: is Jo's belief only "moral" because s/he says what we want her/him to rightly say, or because s/he sincerely wants to say what s/he personally thinks is morally right? We easily fill that gap with a fond intuition that 4 normally follows from 1–3. Yet, no given premise establishes a relationship between her/his psychological capacity and behavioral capacity in this situation. Hence, nothing can be concluded about the contributions made by A, B, and C to moral conduct. Experimental protocols should avoid these sorts of fallacious steps, and neuroethics should abstain from heedless theories about moral cognition.

To draw reasonable conclusions about the "moral" work of neurological processes and brain areas, an empirical investigation into the pursuit and achievement of moral ends requires some presumed information about a relationship – whether necessary or contingent, essential, or accidental – between a person's psychological and behavioral capacities. Where can that information come from? Folk psychology provides intuitive assumptions about the normal thinking and typical conduct of ordinary people in daily life. Has behavioral psychology better illuminated the reliable ties between what people affirm as moral and how they really behave themselves? Can neuroscience step in to expose the true connections between how brain works and what actions people perform? All three sources may be needed, although each has its weaknesses. Our neuroethical

concern here is whether recent claims made about moral neuroscience's contributions are fully warranted.

Tentative Roles of Emotion in Moral Decision-Making

Empirical studies examining relations between psychological affairs and behavioral capacities have shown how prosocial emotions, such as guilt and empathy, influence moral judgments and foster social cooperation and cohesion (Mendez 2009). Such research is of evident interest to social science, law, and politics. It may also elucidate ways that neural mechanisms are involved in abnormal psychological states associated with patterns of amoral and anti-social conduct. Prototypic in this regard are investigations of psychopathy that demonstrate psychopaths' atypical patterns of cognitive processing, as well as suggest that the anti-social behaviors characteristic of this condition result from insufficient affective/valuational input to moral decision-making processes (Harenski et al. 2010). Taken together, studies of psychopathy that employ neurotechnological methods may afford a better perspective on those ways that neuroscience could answer questions about the cognitive processes involved in (what is construed to represent) normal moral capacity and moral performance.

Findings that emotions guide moral judgments are hardly surprising given the belief that evolution has promoted cooperation and group solidarity through the development of prosocial dispositions (Mendez 2009). However, evidence of the extent of this connection prompts the question of whether emotions are a necessary feature of moral cognition. More specifically, it is important to ask if the absence of prosocial emotions or emotional dysfunction precludes the capability for moral knowledge. This question for moral neuroscience has practical implications for forensic psychiatry, as a patient's ability to understand moral norms may impact both their clinical and legal treatment. Information about the relationship between emotions and moral judgments can also influence views of, and beliefs about, moral behavior, theories of justice and normative theories of ethics. The role and relative importance of emotions to behavior are factors arousing intense debate.

One of the persistent debates at the core of theorizing about moral capacity revolves around the internalism-externalism controversy. In brief, internalism holds that moral judgments necessarily motivate an agent's actions, while externalism is the contrary view that moral judgments do not inherently motivate an agent to perform moral actions. Nuanced definitions for internalism and externalism, which receive some attention in this essay, incorporate refinements to anticipate objections. Neither side is immune to

empirical problems. For example, psychopathy appears to pose a serious problem for internalism, as the psychopath seems to make normal moral judgments but reveals and exhibits no motivation to act according to moral norms (Zhong 2013). In response to this problem, proponents of internalism have turned to neuroscience to demonstrate that the psychopath is incapable of forming genuine moral judgments due to emotional dysfunction. Proponents of externalism likewise employ empirical neuroscientific data for theoretical support, arguing that emotional input, while usually present, is not a necessary feature of moral knowledge.

If cognitive neuroscientific research would eventually yield the data sufficient for crediting one side or the other with better empirical warrant, then neuroethics should be most cautious among all the interested disciplinary viewpoints about offering any summary judgments. However, we think that some neuroethical perspective should be taken upon the way that the accumulation of studies to date is capable of supporting both internalism and externalism. Reflections on this empirical situation can go deeper than just noting the shifting tides to this debate. Questioning the interpretative assumptions made by both sides, and pondering the adoption of assumptions for framing empirical studies, led us to concur with the philosophical view that neuroscience alone cannot elucidate the nature of moral judgment and moral knowledge to the degree necessary for an adjudication of the internalism-externalism debate.

We begin with an overview of internalism and externalism, to set the stage for discussions of neuroscientific studies of psychopathy and their contributions to an understanding of moral decision-making. We then compare arguments for internalism and externalism, noting their common assumptions and divergent conceptual frameworks. Neuroscience by itself, we argue, will not dictate those methodological and interpretive terms, so neuroscience alone could never yield definitive support for either side of this internalist-externalist debate. There are no "theory-free" empirical results untouched by moral philosophizing here, whether from folk morality or academic ethics. Accordingly, we propose that the full incorporation of relevant empirical research calls into question whether a unitary conception of "moral judgment" has been in place all along.

Denying that neuroscience can decide a debate like internalism vs. externalism is not the larger moral of this story. Rather, neuroethical scrutiny such as ours can open opportunities for creatively re-framing what it actually means to form and act on moral judgments. If theoretical debates do persist, at least the different practical meanings attached to key terms such as "moral judgment" can be exposed and contrasted with clarity.

Studies of Psychopathy to Address the Internalism/Externalism Debate

The question of whether moral judgments are *necessarily* motivational has long been a contested issue in both moral philosophy and moral psychology. When an agent makes a sincere moral judgment, is she always motivated to abide by that judgment? Adina Roskies details this internalist thesis as follows: "If an agent believes that it is right to Φ in circumstances *C*, then s/he is motivated to Φ in *C*" (Roskies 2003). This does not mean, however, that all agents act to fulfill their moral judgments, as the motivation to do so may be outweighed by non-moral considerations. Rather, internalism simply requires that moral judgments elicit a *pro tanto* motivation that has some degree of compelling force. On the other hand, the thesis of motivational externalism, or "externalism," denies that the connection between moral judgments and motivation exists as a matter of conceptual necessity. The externalist position claims that if an agent is to be motivated to act in accordance with her moral judgment, then she must possess an additional desire that is external to the moral judgment itself. For example, the desire to do what is "good/right" can serve to motivate an agent to act according to her moral judgments (Rosati 2016).

Longstanding philosophical discourse has focused on the topic of moral motivation and approached the issue as a question to be answered through traditional reason and reflection. In recent years, philosophers have increasingly turned to empirical neuroscientific evidence to advance the discourse and attempt to resolve the debate. Scientific investigations of psychopathy have proven to be of keen interest in this regard, as the psychopath provides a real-world example of what amounts to an amoral agent. Psychopathy is characterized by the early onset of emotional, interpersonal, and behavioral dysfunctions, exemplified by lack of empathy and guilt, superficiality, unresponsiveness to relationships, grandiosity, and impulsivity (Cleckley 1988).

Recent neuroimaging studies have demonstrated a number of structural and functional abnormalities in brains of individuals with psychopathy, and the internalism/externalism debate has engaged such studies, among others, with considerable interest and enthusiasm. In what follows, we examine data from a number of neuroscientific studies examining psychopathy and reveal that empirical findings provide both support and contradictory evidence for internalism and externalism alike.

Support for Internalism

At the outset, we have reason to doubt that neuroscientific information can conclusively demonstrate that the link between moral judgment and motivation exists necessarily. As Jones has noted, showing an actual connection between judgment and

motivation does not show that it is necessary and holds in all possible worlds (Jones 2006). In this sense, empirical work in the neurocognitive sciences may be more relevant to externalism, as it need only demonstrate that the uncoupling of judgment and motivation is actual to show that it is possible. Internalists nevertheless utilize neuroscience to dissipate the threat posed the psychopath – the prototypical amoral agent who, despite possessing knowledge about moral norms, is not motivated to behave morally. To preserve the theory, philosophers have cited a number of neurocognitive studies as evidence that psychopaths do not make genuine moral judgments (Prinz 2006; Levy 2007), thereby preserving the essential link between judgment and motivation. A number of these studies have compared the neural networks engaged during moral decision-making in psychopathic and non-psychopathic populations.

Research has shown that moral judgments made by normal subjects are characteristically co-incident with emotion, suggesting that the motivational force of judgments is contingent on, or at minimum influenced by, emotions. Prinz has reviewed a number of neuroimaging studies measuring brain activity during morally neutral and morally valanced events and concluded that brain areas associated with emotional response were active when participants made moral judgments (Prinz 2006). The networks involving the amygdala are of interest in these studies, as such networks have been shown to be operative in the processing of emotional information (Blair 2005; Stratton, Kiehl, and Hanlon 2015). Further studies suggest that emotions not only co-occur but also influence the content of moral judgments. Schnall and colleagues demonstrated that the presence of an unpleasant odor or filthy surroundings made subjects more likely to condemn the actions described in a series of vignettes (Prinz 2006; Schnall et al. 2008; Sauer 2012). Wheatley and Haidt showed that experimentally augmented feelings of disgust altered subjects' moral judgments (Prinz 2006; Sauer 2012; Wheatley and Haidt 2005). The results of these studies support the hypothesis that emotions influence and may increase the severity of one's moral judgments. So while an exact role of emotions in moral decision-making remains unclear – and a matter of debate (Zhong 2013; Prinz 2006; Sauer 2012) – there is growing agreement that emotions play a critical role in the formation of moral judgments, at least in normal individuals.

However, the emotional input that is characteristic of moral judgments in normal individuals tends to be markedly absent in the psychopath (Harenski et al. 2010; Blair 2005; Stratton, Kiehl, and Hanlon 2015). There is considerable literature to suggest that cardinal traits of psychopathy (e.g., lack of empathy, remorse, guilt, and shallow affect) reflect, and/or are the product of, dysfunction of networks involving the amygdala. Structural imaging studies reveal that individuals with robust psychopathic traits have

decreased volume and morphological deficits of the amygdala (Stratton, Kiehl, and Hanlon 2015). Functional neuroimaging investigations have demonstrated reduced amygdalar activation during the processing of affective stimuli when adult psychopaths are asked to rate the severity of moral violations (Harenski et al. 2010, Stratton, Kiehl, and Hanlon 2015). Psychopaths also show impairment on aversive conditioning and passive avoidance learning tasks, both of which are reliant upon functional integrity of amygdala networks (Blair 2005). In addition to amygdalar dysfunction, psychopaths also display reduced activation of the ventromedial prefrontal cortex (vmPFC) in response to emotional stimuli. Given efferent connections between the amygdala and the vmPFC, Blair hypothesized that moral attitudes may be reliant upon stimulus-outcome processing subserved by an amygdalar-vmPFC network (Stratton, Kiehl, and Hanlon 2015, Blair 2008). In this model, amygdalar activation by a conditioned stimulus provides input to the vmPFC, which represents this information as a valenced outcome. This process, thought to be essential for moral reasoning, is dysfunctional in psychopaths.

In that the characteristic features of psychopathy are due, in part, to severe emotional dysfunction, and because emotions play a critical role in moral judgments in normal subjects, some philosophers have turned to psychopathy literature to support internalism. Prinz argues that the psychopath's emotional deficiencies prevent him from making genuine moral judgments (Prinz 2006). To support this conclusion, he points to Blair's studies demonstrating that psychopaths have difficulty recognizing negative emotions in others, are not amenable to fear conditioning, experience pain less intensely than normal subjects, and are undisturbed by distressing photographs (Blair et al. 1997; Blair et al. 2001; Blair et al. 2002). Unable to experience fear, empathy, remorse, and guilt, the psychopath lacks the moral knowledge required to make genuine moral judgments. While the psychopath may acknowledge that certain criminal acts are 'wrong,' Prinz denies that such moral statements constitute genuine beliefs in the absence of emotions, stating: "Can one sincerely attest that killing is morally wrong without being disposed to have negative emotions towards killing? My intuition here is that such a person would be confused or insincere" (Prinz 2006, 32). The claim fortifies an internalist stance, in that, it argues that psychopaths are unmotivated by moral norms because they are incapable of forming genuine moral judgments.

An appeal to the intuition that psychopaths do not make genuine moral judgments as evidence for the necessity of emotions for moral judgments begs the question. This is clear if the argument is distilled as follows:

P1: Psychopaths have no negative emotions, such as fear

P2: Psychopaths do not make genuine moral judgments *(intuition)*

C: Emotions are necessary for moral judgments

Prinz advances the claim that psychopaths' emotional dysfunction precludes them from understanding morality. While neuroscientific studies demonstrate that psychopaths lack patterns of amygdalar-vmPFC activity involved in emotional aspects (and influence) of moral thought, neuroscience does not, and likely cannot, define what is required to make an 'authentic' moral judgment. There is thus insufficient neuroscientific evidence to derive the conclusion that the emotional abnormalities of the psychopath prevent the acquisition of moral knowledge. In response to Prinz's claims, an externalist could (and likely would) simply dispute his intuition (Liao 2016).

Another argument often used to defend internalism is based upon the inability of psychopaths to distinguish moral and conventional transgressions. Apropos, Blair assessed psychopaths' response to the moral/conventional transgression task (MCT), a test initially developed to determine if children could distinguish between moral and conventional transgressions (Blair 1995; Blair et al. 1995; Nucci and Turiel 1978; Shoemaker 2011). The test requires subjects to: (1) determine if the action in the scenario is permissible; (2) rate the seriousness of the transgression; (3) justify why an action was or was not permissible; and, (4) determine if the wrongness of the action is dependent on an authority figure. Results demonstrated that psychopaths, unlike non-psychopathic children and adults, judged moral and conventional transgressions similarly and were less likely to justify their judgments with reference to the victim's welfare. Interestingly, psychopaths judged all transgressions to be authority-independent, a quality usually assigned to only moral transgressions. This finding disproved Blair's prediction that psychopaths would declare both moral and conventional transgressions to be authority-dependent. Blair interpreted this tendency as the psychopaths' desire to demonstrate they had reformed and learned the rules of society, causing them to overcompensate and declare all transgressions were authority-independent rather than risk classifying moral transgressions as authority-dependent.

Levy has noted that psychopaths' performance on the MCT provides evidence that they lack moral knowledge, thereby endorsing the view that psychopaths are incapable of forming authentic moral judgments and supporting the internalist stance (Levy 2007). Levy fortifies these assertions with neuroscientific findings about dysfunction of amydalar networks in psychopaths, which contributes to their inability to categorize harms in terms of their effect on the emotional states of others. Because psychopaths are

unable to grasp the distinct nature of moral transgressions, Levy posits that they have a reduced sense of moral responsibility. Sauer also employed the MCT as a test of one's ability to form moral judgments, stating:

> Moral judgment requires the capacity to understand a certain subclass of prescriptive social rules as non-conventional, transgressions of these norms as more serious, generalizable wrong… and the validity of these rules as neither based on social acceptability nor dependent on authority. (Sauer 2012, 98)

Given these criteria, the ability to understand differences between moral and conventional transgressions becomes an essential element of moral judgment. Pro Levy, Sauer relates the psychopath's failure to distinguish moral and conventional transgressions to their lack of emotions and inability to perceive the "special" character of their violations. He concludes, pro the internalist view, that emotional responsiveness is necessary for moral judgment.

However, recent empirical work has questioned the validity of the MCT. Aharoni et al. used a modified version of the MCT to assess moral decision-making in 109 incarcerated psychopathic offenders (Aharoni, Sinnott-Armstrong, and Kiehl 2012; Godman and Jefferson 2017). This version of the MCT employed a forced-choice method in which subjects were informed that exactly half of the test scenarios were morally wrong, removing the incentive to over-rate all acts as moral transgressions. The authors found that performance on the task was not related to psychopathy scores, but was instead correlated with IQ and antisocial characteristics. Dolan and Fullam re-assessed the MCT in adolescent offenders and also failed to find an association between psychopathic traits and task performance (Dolan and Fullam 2010; Levy 2014).

Shoemaker has directly criticized the significance of the moral/conventional distinction, arguing that the distinction is not reflective of a unitary concept but represents, rather, several sub-distinctions that sometimes overlap (Shoemaker 2011; Godman and Jefferson 2017). He deconstructed the moral/conventional distinction into 3 primary dimensions: (1) the permissible/impermissible distinction; (2) the more serious/less serious distinction; and, (3) the authority dependent/authority independent distinction. These sub-distinctions do not necessarily map onto each other or the overall moral/conventional distinction, causing Shoemaker to conclude that the moral/conventional distinction cannot bear the weight of determining the moral responsibility of psychopaths.

Even if the moral/conventional distinction and evidence of psychopaths' inability to make this differentiation were upheld, we believe that these finding are insufficient to conclude that psychopaths lack moral knowledge. The inability to distinguish between moral and conventional transgressions is certainly significant to the internalism/externalism debate, insofar as it demonstrates a deficiency in the kind of moral understanding that is required to make moral judgments. However, we maintain that psychopaths' performance on the MCT does not provide adequate stand-alone evidence that they lack of moral knowledge.

Moral transgressions can be defined by their consequences for the rights and welfare of others, and are differentiated from conventional transgressions by the presence of a victim (Blair 1995). Given what is known about psychopaths' emotional (dys)function, it is unsurprising that studies have shown psychopaths to be significantly less likely to justify their judgments by reference to the victim's welfare. Such findings do not, however, indicate that psychopaths are *incapable* of identifying victims or the emotional state of others. Indeed, many psychopaths explained their judgments with reference to a victim's welfare (Blair 1995), and a number of studies demonstrate that psychopaths are capable of evaluating the emotions of others. Decety and colleagues presented visual depictions of social interactions to psychopaths and found that those with a high-level of psychopathy accurately identified the emotions of the subjects in the interactions, including the victims of harmful actions and the recipients of helpful actions (Decety et al. 2015). Dolan et al. found that psychopathic traits were not associated with marked difficulties in reading basic and complex emotions from facial expression (Dolan and Fullam 2004).

These empirical results suggest that, despite their decreased empathy, psychopaths possess knowledge of others' thoughts and feelings. So, while empathy and other emotions may be important (if not required) to motivate psychopaths to act according to their moral judgments, empirical findings do not support that these qualities are wholly necessary for moral judgment itself.

Support for Externalism

As previously stated, neuroscientific evidence may be somewhat more useful to support an externalist view, which needs only to show that separation between moral judgment and motivation is *possible*. Of note, this does not obligate the belief that judgment and motivation are not *usually* linked but that this link is not a conceptual necessity. Because psychopathic criminal offenders provide real-world examples of a lack

of moral motivation, externalists turn to neuroscientific information about processes involved in and/or subserving interactions of emotion, decision-making and actions as evidence that psychopaths form genuine moral judgments.

Evidence for this is provided by studies demonstrating that psychopaths make the same moral judgments as non-psychopathic individuals. For example, Glenn et al. presented psychopaths with personal moral dilemmas (defined as those involving salient harm to another individual), impersonal moral dilemmas (those not involve harm to another individual), and non-moral dilemmas (Glenn, Raine, and Schug 2009). While neuroimaging demonstrated that psychopaths had reduced amygdalar activity during emotional moral decision-making, there was no significant relationship between psychopathy scores and the proportion of utilitarian responses to personal moral dilemmas (Glenn et al. 2009). Cima et al. found similar results (Cima, Tonnaer, and Hauser 2010): psychopaths, like healthy subjects and non-psychopath delinquents, judged impersonal moral actions to be more permissible than personal moral actions, even though both types of harms led to utilitarian gains. Furthermore, there were no group differences in moral judgments for either impersonal or personal scenarios, with psychopaths no more likely to support utilitarian outcomes than other test subjects. Cima and colleagues concluded that these results do not support the hypothesis that emotional processes are necessary for moral judgments, but instead indicate that psychopaths understand distinctions between right and wrong but do not use such knowledge to guide their actions.

These findings suggest that psychopathic individuals use alternative strategies to compensate for their diminished emotional processing, enabling them to make moral judgments. Indeed, Glenn and colleagues found that psychopathy is associated with increased activity in the dorsolateral prefrontal cortex during moral decision-making (Glenn et al. 2009). Likewise, Kiehl et al. demonstrated increased activation of cortical regions in psychopaths during processing of affective stimuli (Kiehl et al. 2001). Such studies suggest that psychopaths rely heavily on abstract reasoning to process moral information. Glenn and colleagues summarized the findings of these cognitive and imaging studies:

> Although [psychopaths] may cognitively *know* the difference between right and wrong (i.e., the moral judgment), they may not have the *feeling* of what is right and wrong, and thus lack the motivation to translate their moral judgments into appropriate moral behavior. (Glenn et al. 2009, 910)

Cima et al. agreed, stating that normal emotional processing may be unnecessary for forming moral judgments, yet is likely important in generating an appreciation of moral distinctions and in guiding actions (Cima, Tonnaer, and Hauser 2010).

Such studies may offer evidence that psychopaths do in fact make genuine moral judgments, thus upholding both the psychopath as a paradigm for the separation of moral judgment and motivation and the externalist view. Yet, these studies, like those cited by the internalists, do not answer the (primarily conceptual) question: *What is a genuine moral judgment?* Assuming that the presented data are accurate, it becomes clear that psychopaths respond to moral dilemmas in a manner similar to non-psychopathic controls, despite differences in patterns of amygdalar and prefrontal cortical network activation.

Conclusions: Toward a Conciliatory View – and Approach

This empirical situation leads us to ask if the *source* of moral judgments is essential to their authenticity. Presumably, the internalist view would argue that moral judgments that result from abstract reasoning processes rather than emotional input are not 'authentic.' Of course, this statement, as we have seen, begs the question at hand. But the externalist view is mistaken to conclude that psychopaths possess true moral knowledge by virtue of the fact that they verbally respond to moral dilemmas in the same way as controls. This conclusion is grounded in the assumption that moral knowledge is not contingent on a particular thought process, which is the premise that internalists reject when they cite the emotional input that characterizes normal decision-making. Thus, it seems that neuroscientific investigations to date have been inadequate to wholly define the nature of moral knowledge, and therefore fail to preferentially support (or foster) an exclusively internalist or externalist view.

We have pointed out ways that neuroscientific evidence, by itself, does not appear to be sufficient for describing the nature of moral knowledge. This does not mean, however, that the internalism/externalism debate has nothing to gain from neuroscience. To the contrary, studies of the neural networks involved in moral cognition reveal two important findings. First, emotional input is a feature of moral judgments in non-psychopathic individuals. Second, the emotional dysfunction of psychopaths correlates with the absence of moral motivation. These data focus the debate and lead us to question if emotions, understood as one of many inputs to (moral) decision-making processes, are essential to the formation of authentic moral judgments. The link between (moral) emotions and compliance with moral norms is notably significant to psychiatry,

as it informs predictions about the relative validity and value of therapeutic interventions intended to mitigate or prevent psychopathic behaviors.

Neuroscientific studies, such as those discussed, can also call into question any strict determination of the interalism/externalism disagreement. For example, it may be the case that humans are not universally motivated, or unmotivated, by moral judgments. Rather, the degree to which moral judgments motivate agents to act may differ across circumstances and individuals. Zhong takes this approach, arguing that emotions, while not causally necessary for moral judgment, may titrate the severity of moral judgment (Zhong 2013). On this view, the emotions associated with a moral judgment will influence the extent to which the judgment overrides other considerations in favor of an action. To support his claims, Zhong points to studies demonstrating that psychopaths and non-psychopaths often make similar moral judgments, explaining these findings with reference to the cognitive, non-emotional mechanisms that both groups use to process moral information. Emotional input is therefore significant to moral motivation insofar as it alters the severity of moral judgments.

Even if we do not accept this argument, we have reason to question whether *all* moral judgments made by non-psychopaths are dependent on emotional input. Let us consider two ways that this might not be the case. First, there may be a subset of moral dilemmas that do not provoke a significant emotional response. Empirical data already support this claim. Studies by Greene and colleagues, for example, revealed that normal subjects' brain regions show similar patterns of activity when these subjects respond to impersonal moral dilemmas and non-moral dilemmas (Greene et al. 2001). Unless judgments elicited by impersonal moral dilemmas do not constitute authentic moral judgments, this finding gives us reason to doubt that emotional input is necessary for all moral understanding. Second, the emotions triggered by moral dilemmas may be morally irrelevant. On this reading, the presence of moral emotions should have no impact on an agent's moral judgments. Greene and Singer take this stance, arguing that moral emotions are an evolutionary byproduct and fail to track "moral truths" (Singer 2005; Greene 2008). As such, there may be reason to ignore emotionally driven moral intuitions in favor of more reasoned conclusions.

Continued investigations of brain structures and functions that are involved in moral cognition are sure to advance this discussion. The information gained from these studies is important not only to the philosophical debate at hand but also to forensic psychiatry and the justice system which look to empirical data about psychopathy to inform judgments about criminal responsibility and what could – and should – be done about criminal behavior (Giordano, Kulkarni, and Farwell 2014). It is important to remember,

however, that neuroscience is unlikely to provide definitive answers to the conceptual questions that drive the current version of the internalism/externalism debate. Moving forward, it will therefore be necessary to carefully define the questions that neuroscience is employed to address and answer, and equally vital to ensure that empirical findings are not distorted to support preconceived theoretical assumptions. In this way, neuroscientific investigations can be used in a conciliatory way. Not only to balance views of processes operative in moral cognition, but to bring together the sciences and humanities to both address questions about human morality, and iteratively raise ethical, legal and social questions about what research findings actually mean, and what medicine – and societies – will effect through the use of such information and meanings.

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