Empathy and Morality

EDITED BY HEIDI L. MAIBOM

OXFORD
UNIVERSITY PRESS

OXFORD
UNIVERSITY PRESS

Oxford University Press is a department of the University of Oxford.
It furthers the University's objective of excellence in research, scholarship,
and education by publishing worldwide.

Oxford New York
Auckland Cape Town Dar es Salaam Hong Kong Karachi
Kuala Lumpur Madrid Melbourne Mexico City Nairobi
New Delhi Shanghai Taipei Toronto

With offices in
Argentina Austria Brazil Chile Czech Republic France Greece
Guatemala Hungary Italy Japan Poland Portugal Singapore
South Korea Switzerland Thailand Turkey Ukraine Vietnam

Oxford is a registered trade mark of Oxford University Press
in the UK and certain other countries.

Published in the United States of America by
Oxford University Press
198 Madison Avenue, New York, NY 10016

[Insert Cataloguing Data]

9780199969470

9 8 7 6 5 4 3 2 1

Printed in the United States of America on acid-free paper

7

Empathy and Moral Deficits in Psychopathy

ABIGAIL A. MARSH

> In the disaster he brings about he cannot estimate the affective reactions of others which are the substance of the disaster . . . the real psychopath seems to lack understanding of the nature and quality of the hurt and sorrow he brings to others.
>
> —Hervey Cleckley, *The Mask of Sanity*

If there is a single psychiatric condition that is defined in terms of morality, it is psychopathy. Modern conceptions of psychopathy emerged from 19th-century observations that the primary affliction of a subset of criminal and mentally ill populations was a breakdown of the moral faculties. Benjamin Rush described individuals afflicted by apparent "perversion of the moral faculties" (Rush, 1812), and James Cowles Prichard created a diagnostic category, which he termed moral insanity, that was marked by moral or emotional "madness" in the absence of hallucinations or delusions (Prichard, 1837). The contemporary definition of psychopathy reflects these origins, incorporating both deficiencies in moral emotions like empathic concern and guilt and persistent immoral behaviors like deceit, conning, theft, and interpersonal violence (Hare, 1991). Although other psychological conditions, such as borderline personality disorder or post-traumatic stress disorder, are associated with increases in immoral behavior, there is no other disorder for which immorality is such a central feature. Because of this, psychopathy is an important phenomenon for

better understanding the nature of human morality. In learning about individuals in whom moral emotions and behavior are consistently impaired (in the absence of other major cognitive impairments) we may derive important information about the neurocognitive systems that support morality.

Since the development of reliable scales for measuring psychopathy (e.g., Hare, 1991; Forth, Kosson, & Hare, 2003; Lilienfeld & Andrews, 1996), research on psychopathy has burgeoned, driven in part by the practical importance of understanding individuals whose disproportionately violent and criminal behavior is costly to society (Rutter, 2012; Hare, 1993). Understanding the nature of moral deficits in psychopathy is therefore both a pragmatically and a theoretically useful endeavor. This chapter will review the accumulating empirical research that supports the roots of specific moral deficits in psychopathy. In particular, it will explore the evidence that moral deficits in psychopathy emerge from fundamental deficiencies in the capacity for certain forms of empathy and will consider the possible neural basis for these deficits. These findings may illuminate the role of empathy in moral judgments and behavior more broadly.

PSYCHOPATHY

The earliest criteria for assessing psychopathy were formulated by the psychiatrist Hervey Cleckley, whose book *The Mask of Sanity* was first published in 1941 and has since become a touchstone for psychopathy researchers in the modern era (Cleckley, 1988). Cleckley noted that a subset of patients in the mental institutions where he worked were set apart by characteristic features. These features included an absence of afflictions typical in institutionalized patients, such as delusions, "irrational" behavior, suicidality, and "nervousness" or neuroses. These items were included in his original 16 criteria for psychopathy, in addition to items related both to moral emotions (such as a lack of remorse or shame) and to immoral behavior (including untruthfulness and "inadequately motivated" antisocial behavior). Of note, Cleckley also included the failure to learn by experience as symptomatic of psychopathy, as many of the psychopathic individuals he observed persistently engaged in deviant behaviors, seemingly undeterred by the prospect of negative consequences like future incarceration.

More recently, Hare and colleagues applied psychometric techniques to create a reliable instrument for researchers to assess psychopathy in institutionalized populations, called the Psychopathy Checklist (now in its revised form, PCL-R) (Hare, 1991). The PCL-R is a 20-item scale with a maximum score of 40 that was originally created and standardized in male prison

populations rather than patients in mental institutions (Hare, 1991). The selection of items on the scale reflects this fact. It features more items specifically assessing criminal behavior—juvenile delinquency, criminal versatility, revocation of conditional release—in addition to items featured in Cleckley's criteria, for example, lack of remorse and pathological lying. Absent from the PCL-R, however, are the items that Cleckley included to distinguish psychopaths from other mentally ill populations: the absence of nervousness, absence of delusions or irrational thinking, and infrequent suicidality. The ubiquity of the PCL-R and its variants in forensic psychiatry and related disciplines has led to this instrument being described as "the gold standard" for the measurement of psychopathy—sometimes to the extent that the instrument is considered synonymous with the psychopathy construct (Skeem & Cooke, 2010; Skeem, Polaschek, Patrick, & Lilienfeld, 2011; Ermer, Kahn, Salovey, & Kiehl, 2012). That said, drawbacks of this instrument include the requirement that file data or other background information be used when scoring it (meaning that it cannot easily be used in noninstitutionalized samples); its heavy reliance on items assessing criminal behavior (Skeem & Cooke, 2010); and the exclusion of items that assess fear or anxiety, which has led some investigators to supplement the scale with anxiety measures or clinical assessments of anxiety disorders (e.g., Koenigs, Kruepke, Zeier, & Newman, 2012; Marsh et al., 2008).

A variety of self-report measures of psychopathy are also available, which are generally reliably correlated with the PCL-R (Malterer, Lilienfeld, Neumann, & Newman, 2010; Poythress et al., 2010) and obviate the need for file data, permitting psychopathy to be assessed in noninstitutionalized community samples. The use of self-report measures in community samples is consistent with the idea that, like most other psychological disorders (Markon, Chmielewski, & Miller, 2011), psychopathic traits are continuously distributed in the population (rather than being taxonomic in structure) such that information about psychopathy can usefully be drawn from both clinically diagnosed samples and community samples (Edens, Marcus, Lilienfeld, & Poythress, 2006; Guay, Ruscio, Knight, & Hare, 2007; Malterer, Lilienfeld, Neumann, & Newman, 2010).

Views on the factor structure of psychopathy vary (Skeem, Polaschek, Patrick, & Lilienfeld, 2011; Jones, Cauffman, Miller, & Mulvey, 2006), but the classic division of psychopathic traits is a two-factor solution incorporating socio-affective traits termed *callous-unemotional traits* that include lack of guilt or remorse and shallow affect; and antisocial and under-controlled behaviors, like irresponsibility, impulsivity, and poor anger control. Antisocial behaviors observed in psychopathy may also be observed in other deviant populations, but callous-unemotional traits set psychopaths apart and are often referred to as the "core" features of the disorder (Sylvers, Brennan, &

Lilienfeld, 2011). Assessments of children typically focus only on these traits, and a callous-emotional traits specifier has been proposed for children diagnosed with Conduct Disorder using the forthcoming Diagnostic and Statistical Manual V (DSM-V) (Frick & Moffitt, 2010). The two factors that compose psychopathy are strongly positively related, such that higher levels of callous-unemotional traits predispose an individual to increased antisocial behaviors, particularly antisocial behavior that serves an instrumental goal, such as bullying, sexual violence, or assault during the course of a robbery (Blair, 2001; Woodworth & Porter, 2002; Kahn, Byrd, & Pardini, 2012; Viding, Frick, & Plomin, 2007; Dadds, Fraser, Frost, & Hawes, 2005).

MORAL JUDGMENTS IN PSYCHOPATHY

Very early descriptions of psychopathy explained the condition as a disorder of the moral faculties. Prichard, for example, described psychopathy as "a morbid perversion of the natural feelings, affections, inclinations, temper, habits, moral dispositions, and natural impulses, without any remarkable disorder or defect of the intellect or knowing or reasoning faculties . . . " (Prichard, 1837, p. 16). But accumulating research on the neurocognitive basis of morality indicate that the umbrella term "morality" encompasses many different phenomena and that various types of moral judgments may be facilitated by distinct neurocognitive processes (Sinnott-Armstrong & Wheatley, 2012). This suggests that any single disorder or impairment is unlikely to affect all forms of moral reasoning. The goal, therefore, is not simply to determine whether psychopathy affects morality, but what forms of moral judgment it affects, and via what mechanisms.

The earliest investigations of psychopaths' moral judgments aimed to identify qualitative differences in moral reasoning using Kohlberg's method, in which respondents are presented with a complex moral scenario and asked to justify the most appropriate course of action (Kohlberg, 1981). Responses are scored as representing various stages of moral reasoning, which Kohlberg believed emerged progressively during development. These investigations met with mixed results, with some yielding findings that psychopaths reason at a lower level than other antisocial populations (Fodor, 1973; Jurkovic & Prentice, 1977) and others finding no significant group differences (Lee & Prentice, 1988; Trevethan & Walker, 1989).

More consistent findings have emerged from quantitative investigations of the moral/conventional distinction in psychopathic adults and children (Blair, 1995; Blair, Jones, Clark, & Smith, 1995; Fisher & Blair, 1998). In this task, respondents make a variety of judgments about both moral transgressions,

which are defined as violations of others' rights or welfare and which include, for example, theft, violence, and damaging property, and about conventional transgressions, which are defined as deviations from social norms or rules and which include, for example, talking out of turn (Blair, Jones, Clark, & Smith, 1995). Moral and conventional transgressions are typically judged differently in two respects: moral violations are generally judged to be more serious and also to be less rule contingent (modifiable). In other words, compared to conventional violations, a moral violation like hitting another person is less likely to be judged morally acceptable, and judgments about it are unlikely to change when respondents are informed that there are no rules against the action in the setting where it occurred (Turiel, 1977; Turiel, 1983). In addition, when asked why a moral violation is wrong, respondents tend to refer to its effects on the welfare of the victim. Populations found to successfully distinguish between moral and conventional violations according to these criteria include non-psychopathic criminals (Blair, 1995), children as young as three years of age (Smetana & Braeges,1990), adults with autism (Zalla, Barlassina, Buon, & Leboyer, 2011), and adults with Down's syndrome (Hippolyte, Iglesias, Van der Linden, & Barisnikov, 2010). Evidence exists that the distinction emerges across cultures as well. A study of Amish adolescents found that these respondents distinguished between conventional violations, like working on a Sunday, that would be permissible if God had made no rule against it, as compared to moral violations, like hitting someone, that would be impermissible even if God had made no rule against it (Nucci, 1985). Together, these findings suggest that the moral/conventional distinction arises in the absence of advanced cognitive abilities, advanced Theory of Mind, or learning accrued in a particular cultural context.

Despite this, psychopaths typically fail to distinguish between moral and conventional transgressions. This has been observed anecdotally, for example, during a prison interview, in which the presumed psychopath Ted Bundy listed behaviors he knew to be wrong and jumbled together moral and conventional violations in a way that seems strangely arbitrary: "It is wrong for me to jaywalk. It is wrong to rob a bank. It is wrong to break into other people's houses. It is wrong for me to drive without a driver's license. It is wrong not to pay your parking tickets. It is wrong not to vote in elections. It is wrong to intentionally embarrass people" (Michaud & Aynesworth, 2000, p. 119). Empirical evidence exists as well. In two studies assessing the moral/conventional distinction in psychopaths, Blair and colleagues assessed responses to descriptions of transgressions adapted from the developmental literature, including four moral transgressions (a child hitting another child, a child pulling the hair of another child so that the victim cries, a child smashing a piano, a child breaking the swing in the playground) and four conventional transgressions

(a boy wearing a skirt, two children talking in class, a child walking out of the classroom without permission, a child who stops paying attention to the lesson and turns his back on the teacher). In one study of 20 violent offenders, half of whom were psychopaths, non-psychopathic offenders distinguished between moral and conventional transgressions in terms of judgments of seriousness, modifiability, and the types of rationale used to justify their judgments whereas non-psychopathic offenders did not (Blair, 1995). This indicates that the moral/conventional test can distinguish psychopathic offenders from non-psychopathic offenders. Interestingly, psychopathic respondents tended to err in treating conventional violations like moral violations in terms of seriousness and modifiability. Psychopaths were also markedly less likely than non-psychopaths to justify their judgments by referring to the victim's welfare. Over half (52.5%) of non-psychopaths' justifications of moral violations referred to victim welfare, whereas only 17.5% of psychopaths' justifications did (neither group used any welfare-based justifications in response to conventional violations). Psychopaths were markedly more likely to refer to conventions or rules (52.5%) than non-psychopaths (35%) when responding to moral violations.

A follow-up study largely replicated this result, finding again that non-psychopathic offenders distinguish between moral and conventional violations in terms of seriousness, modifiability, and welfare-based rationale, whereas psychopathic offenders distinguished between moral and conventional violations only in their judgments of seriousness (Blair, Jones, Clark, & Smith., 1995). And again, psychopaths were markedly less likely than non-psychopaths to refer to victims' welfare in response to moral violations (3.75% vs. 27% of responses). The PCL-R item that best predicted participants' responses was a "core" moral emotion item: lack of remorse or guilt.

A recent study (Aharoni, Sinnott-Armstrong, & Kiehl, 2012) did not find a significant relationship between psychopathy and performance on a moral/conventional distinction task that assessed modifiability judgments (but not permissibility or justifications). However, significant negative associations were found between task performance and both the affective and antisocial facets of the PCL-R. Among the moral violations that best distinguished offenders with high and low psychopathy scores was the one item that described victim distress: "Annoyed by her sarcastic attitude, a man pulls a flight attendant's hair, causing her to scream."

The results of early studies on the moral/conventional distinction in psychopaths, as well as the results of a study assessing children with psychopathic traits (Fisher & Blair, 1998) are interpreted by Blair in support of Violence Inhibition Mechanism (VIM) model and the updated Integrated Emotion Systems (IES) model (Blair, 2005; Blair, 1995). Under this model, distress

cues such as facial expressions and vocalizations of fear or sadness are unconditioned stimuli that developing children come to associate with moral violations, thereby learning to avoid engaging in these behaviors. But the neurocognitive deficits associated with psychopathy prevent psychopaths from using information about a victim's distress to generate appropriate judgments about violations that result in victim suffering, making these individuals difficult to socialize (Blair, 2005). This model neatly explains psychopaths' impairments in judging the seriousness and modifiability of moral violations, as both types of response require an appreciation of the distress the violation causes the victim. (Is hitting someone permissible? No, because it would cause the person distress. Would hitting be permissible if the rules said it's all right to hit? No, because hitting would still cause the person distress.) The model does not specify whether psychopaths fail to learn the seriousness of moral transgressions because they fail to *recognize* the distress that results from moral violations, or whether they fail to *care* that these violations results in distress, but either mechanism could presumably yield the observed effects.

If the failure to respond to the distress of a victim is central to psychopaths' moral deficits, one would expect other moral reasoning tasks that hinge upon responding to a victim's distress to also find impairments in psychopathy. The evidence for this is clear but limited, in part because many moral judgment tasks do not systematically manipulate victim distress or include task stimuli that highlight it. For example, the commonly used "trolley" scenarios typically manipulate whether the harmful act is intentional versus unintentional (accidental or merely foreseen) (Young, Koenigs, Kruepke, & Newman, 2012; Marsh et al., 2011a), or personal versus impersonal (requiring physical contact with the victim or not) (Greene, Sommerville, Nystrom, Darley, & Cohen, 2001; Crockett, Clark, Hauser, & Robbins, 2010). Koenigs and colleagues (Koenigs, Kruepke, Zeier, & Newman, 2012) investigated the responses of psychopathic and non-psychopathic inmates to trolley dilemmas featuring personal harm (e.g., pushing one person off a bridge to stop a runaway train car from hitting five people) or impersonal harm (e.g., pulling a switch to divert a runaway train car from hitting five people). In either scenario, sacrificing one victim to save five others is the utilitarian choice, but most respondents avoid this outcome if saving the five requires personally harming the victim. Non-psychopathic criminals generally followed this pattern, whereas psychopaths were more likely to endorse personally harming the innocent victim in order to save the others. It should be noted that this psychopathy sample was limited to only respondents scoring 30 or greater on the PCL-R and that group differences in response to personal harm were only obtained for psychopaths with low anxiety scores (sometimes called primary psychopaths), but not psychopaths with high anxiety scores.

Koenigs and colleagues suggest that the higher cutoff score explains why they observed group differences in judgments of personal harm dilemmas whereas two previous studies assessing how psychopathy affects judgments of similar scenarios did not. Cima and colleagues (Cima, Tonnaer, & Hauser, 2010) used a cutoff score of 26, and Glenn and colleagues (Glenn, Raine, & Schug, 2009; Glenn, Raine, Schug, Young, & Hauser, 2009) assessed correlations in a community sample with no cutoff score. This explanation runs counter, however, to findings that psychopathy is more accurately described as a continuum than a taxon (Edens, Marcus, Lilienfeld, & Poythress, 2006) and that, in related neurocognitive tasks, similar findings can be observed across the psychopathy spectrum in both incarcerated and community samples (Glenn, Iyer, Graham, Koleva, & Haidt, 2009; Aharoni, Antonenko, & Kiehl, 2011; Vanman, Mejia, Dawson, Schell, & Raine, 2003; Patrick, Bradley, & Lang, 1993). An alternative explanation is that neither Cima and colleagues nor Glenn and colleagues assessed anxiety in their samples. Koenigs and colleagues only found more lenient moral judgments regarding personal harm in low-anxiety psychopaths, whereas high-anxiety psychopaths looked similar to controls. When all the psychopaths were considered together in this study, psychopathy was not significantly related to judgments of personal harm.

Together, these findings could be interpreted as refuting the idea that moral judgments in psychopathy are impaired at all (Cima, Tonnaer, & Hauser, 2010). Trolley dilemmas are a staple of neurocognitive assessments of morality, and it seems counterintuitive that psychopaths, whose moral behavior is so obviously aberrant, respond to these dilemmas similarly to controls. But an alternate interpretation is that perhaps psychopathy does not impair judgments of trolley dilemmas because these dilemmas do not target the crux of psychopaths' moral deficits. If psychopathy predominantly impairs moral judgments that require a representation of a victim's distress, trolley scenarios are not ideally suited for capturing this impairment. None of the scenarios describe the victims' responses to their fate—there are no mention of the screams, tears, or anguished expressions that occur during an actual fatal trolley crash. And although the personal harm scenarios are considered more emotional in nature, it is not because victims' emotional reactions are amplified in these scenarios. Rather, these scenarios aim to increase respondents' presumed emotional reaction to causing the death of an innocent victim. One might argue that in the personal scenarios the victim's distress would be more salient to the respondent, but evidence for this mechanism is lacking. And because other features also distinguish the two types of scenarios it would be difficult to attribute any response patterns to this detail or to rule out alternate mechanisms, such that responses to personal harm scenarios represent a general distaste for violence or normative beliefs about the appropriateness of violent behavior.

In support of the idea that trolley scenarios are poorly suited for capturing moral judgment deficits in psychopathy are the results of studies that explicitly assess responses to victims' outcomes and do find that psychopathy predicts distinct judgment patterns. For example, two recent studies have assessed the correspondence between psychopathic traits and responses to the Moral Foundations Questionnaire (MFQ) (Haidt & Graham, 2007; Aharoni, Antonenko, & Kiehl, 2011; Glenn, Iyer, Graham, Koleva, & Haidt, 2009). This measure assesses the importance of five systems, or foundations, in respondents' moral judgments: Harm/Care (concerns about violence, suffering, and compassion); Fairness/Reciprocity (concerns about equality and justice); Ingroup/Loyalty (concerns about loyalty and the treatment of ingroup versus outgroup members); Authority/Respect (concerns about obedience and hierarchical relations); and Purity/Sanctity (concerns about moral disgust and purity). Using a large community sample, Glenn and colleagues found that psychopathy predicted reduced concerns about harm and fairness, but was relatively unrelated to other moral domains such as authority and ingroup loyalty (Glenn, Iyer, Graham, Koleva, & Haidt, 2009). Aharoni and colleagues found much the same results in a sample of offenders, among whom concerns about harm and fairness were also more strongly related to psychopathy scores than were concerns about other moral domains (Aharoni, Antonenko, & Kiehl, 2011). In both studies, the strongest predictor of total psychopathy scores was judgments regarding harm/care. The harm/care subscale of the MFQ includes items like, "[It is relevant to consider] whether or not someone suffered emotionally," and "It can never be right to kill a human being." Fairness judgments are assessed using items like, "[It is relevant to consider] whether or not someone acted unfairly" and "I think it's morally wrong that rich children inherit a lot of money while poor children inherit nothing." Thus, both subscales include items that allude to victim suffering, although the harm/care subscale does so most explicitly.

A still more explicit focus on victim suffering was employed by Marsh and Cardinale in a recent set of studies assessing the influence of psychopathy on moral judgments about behaviors that evoke specific emotions in the victim (Marsh & Cardinale, 2012a; Marsh & Cardinale, 2012b). The stimuli used in these studies were written statements that vary in moral permissibility and would cause a target to experience one of five basic emotions: anger ("You are a disgrace"), disgust ("I never wash my hands"), fear ("I could easily hurt you"), happiness ("You are the nicest person I know"), or sadness ("I don't want to be friends anymore"). In both studies, respondents were drawn from community samples and assessed using a self-report measure of psychopathy. During the task, they read each statement and were asked whether it would ever be morally acceptable to make that statement to another person. In both studies,

the only judgments associated with psychopathy scores were judgments about causing others fear. Although violations resulting in anger and fear were on average viewed as equally serious by the study participants, high psychopathy scorers judged violations that cause fear to be significantly more permissible, but did not differ in their judgments of the other violations. The results of these studies provide the most targeted evidence to date that psychopathy is most closely linked to impaired moral judgments when making those judgments require reference to information about a victim's distress, particularly fear.

To summarize, the most consistent moral deficits in psychopathy emerge in paradigms that that focus on the issue of victim suffering. Trolley dilemmas, which neither describe nor manipulate the suffering of victims, have not reliably been found to predict psychopathy scores. By contrast, investigations of moral versus conventional violations, which require considering victim distress in order to differentiate between two types of transgressions, have been more reliably linked to psychopathy. Similarly, investigations of various moral foundations have found those that the subscales relevant to victim suffering are most closely associated with psychopathy. And a novel task that assesses moral judgments about evoking specific emotions in victims finds that psychopathy most strongly affects judgments about causing a victim one particular kind of emotional distress: fear.

EMOTIONAL RESPONDING IN PSYCHOPATHY

That psychopathy is particularly likely to impair moral reasoning in response to victims' distress, fear in particular, is significant. One of the most durable findings in the psychopathy literature is that this disorder also impairs the capacity to experience fear (Aniskiewicz, 1979; Birbaumer et al., 2005; Herpertz et al., 2001; Lykken, 1957; Marsh et al., 2011b; Rothemund et al., 2012; Flor, Birbaumer, Hermann, Ziegler, & Patrick, 2002). The parallel between the emotion that psychopaths fail to respond to in victims and the emotion they fail to experience suggests a possible empathic basis to moral reasoning deficits in psychopathy. That is, the emotions that psychopaths fail to respond to in victims may mirror the emotions they tend not to experience themselves.

Fear can be defined as the aversive state that accompanies the anticipation of a punishment or other negative event and promotes avoidance and escape behaviors (Stein & Jewett, 1986; LeDoux, 2000; Panksepp, 1998). Psychopathy has been linked to deficient fear responding from the earliest formal descriptions of the disorder. It will be recalled that among Cleckley's defining criteria is the "absence of nervousness or psychoneurotic manifestations." Cleckley describes the prototypical psychopath as "incapable of anxiety" (p. 340) showing

"immunity from . . . anxiety or worry" (p. 339), and being "free from . . . nervousness" (p. 339). His case studies largely describe psychopaths as relaxed, affable, charming, and prone to engage in a variety of risky and reckless behaviors with seemingly little thought to the possibility of danger or punishment (for example, imprisonment). These descriptions are consistent with current thinking that psychopathy is a predictor of recidivism, perhaps because psychopaths are not sufficiently deterred by the threat of future punishment (Corrado, Vincent, Hart, & Cohen, 2004; Hare, 2006).

Empirical data aimed at assessing psychopaths' responses to the threat of punishment also supports the idea of impaired fear responding. The first assessment of psychopaths' behavioral responses to anticipated negative outcomes was conducted by Lykken (Lykken, 1957), who created a sort of mental maze that subjects were given 20 trials to learn. At each choice point in the maze four choices were available, and one of the four choices would result in an electrical shock applied to the respondent's finger. Relative to controls, psychopaths were significantly slower to learn to avoid selecting the choices that resulted in shock. This is consistent with the idea of an impaired fear response. The fear learning system is conserved across species and has been well delineated by researchers studying humans and nonhuman animals (LeDoux, 2003; Schoenbaum, Chiba, & Gallagher, 1998). The system is described as promoting the acquisition of an avoidance response for aversive events and is dependent upon an intact amygdala (Bechara, Damasio, Damasio, & Lee, 1999).

Also consistent with the notion of an impaired fear response are the results of a paradigm in which psychopathic and non-psychopathic participants were given the choice between an immediate shock and a delayed shock (Hare, 1966). Most non-psychopathic participants preferred the immediate shock rather than the dread that accompanies waiting for a delayed shock, explaining their choice as resulting from a desire to "get it over with" (p. 27). By contrast, psychopaths were indifferent between the two options, selecting them in nearly the same proportions throughout the task. The psychopaths claimed that, "waiting for the occurrence of delayed shock bothered them very little" (p. 27). Combined, these data are consistent with the idea that psychopathy impairs the generation of a fear response under conditions of impending threat and that this is a defect in emotional processes subserved by primitive subcortical structures.

Psychophysiological data also support the notion that psychopaths' responses to an impending aversive outcome are muted. During conditions of anticipated threat, psychopathy reduces skin-conductance responses, an index of palmar sweat (Aniskiewicz, 1979; Birbaumer et al., 2005; Herpertz et al., 2001; Lykken, 1957; Rothemund et al., 2012; Flor, Birbaumer, Hermann, Ziegler, & Patrick et al., 2002); fear-potentiated startle responses, an index of

the contraction of the muscles around the eye following a startling noise (Herpertz et al., 2001; Rothemund et al., 2012; Levenston, Patrick, Bradley, & Lang, 2000); and distress-related facial expressions, indexed as the contraction of the corrugator muscle underlying the brows (Herpertz et al., 2001; Rothemund et al., 2012). When primary psychopaths are distinguished from secondary psychopaths, these differences are particularly pronounced for primary psychopaths who more strongly exhibit the core callous-unemotional personality features of the disorder (Aniskiewicz, 1979; Lykken, 1957). These findings are consistent with the comments of the psychopaths tested by Hare (Hare, 1966) as well as with anecdotal reports from psychopaths who claim they do not "not really understand what others meant by 'fear'" (Hare, 1993, p. 53).

Empirical data also support that subjective experiences of fear are reduced in psychopathy. In one recent paradigm (Marsh et al., 2011b), healthy children and adolescents and those with psychopathic traits underwent an autobiographical recall paradigm adapted from a task developed by Scherer and Wallbott to measure subjective experiences of emotion across cultures (Scherer & Wallbott, 1994). Respondents recalled events in their own lives during which they had felt anger, disgust, fear, happiness, and sadness. They then reported on how they felt physiologically during these experiences. Specific items were selected to correspond to changes linked to activation of the sympathetic ("fight or flight") and parasympathetic nervous system. Items composing the index of sympathetic activation included changes in breathing, heart rate, and muscle tension. When reports of changes in sympathetic activity were analyzed, a significant group by emotion interaction was found such that the psychopathic adolescents reported experiencing less sympathetic activation during frightening experiences than did healthy adolescents, whereas no group differences were observed for other emotions. These data omitted the responses of two psychopathic adolescents who claimed never to have felt afraid, and so they could not provide a relevant recent event. No healthy adolescents reported never having been afraid. At the end of the task, participants were asked how often and how strongly they experienced the various emotions in daily life and again, the groups differed only in their responses to fear, which psychopathic adolescents claimed to feel less often and less strongly than healthy adolescents.

It should be noted that psychopaths do not appear to be generally without emotion. For example, anger appears to be intact and perhaps enhanced in psychopaths. Anger is the high arousal state that follows frustration or perceived threat and, behaviorally, is closely linked to aggression against the source of frustration or threat (Blair, 2012). Two recent studies found that psychopathy is associated with intact or heightened physiological and subjective anger responses. Lobbestael and colleagues (Lobbestael, Arntz, Cima,

& Chakhssi, 2009) found that total psychopathy scores, as well as callous-unemotional traits scores, among individuals with antisocial personality disorder were unrelated to physiological changes during an anger induction task. And Hicks and Patrick (Hicks & Patrick, 2006) evaluated angry responding using a variety of self-report scales and found elevated anger responding in psychopathy, an effect that was primarily accounted for by antisocial behavior factor scores. Positive excitement is another emotional state that appears to be intact in psychopathy. This state is distinct from happiness, which is associated with goal attainment, and is the state that accompanies the anticipation of a reward (i.e., an appetitive outcome) and that promotes acquisition or achievement of the reward (Berridge, Robinson, & Aldridge, 2009). Although comparably little data exist that explicitly assess positive excitement in psychopathy, what data do exist suggest that psychopathy either minimally affects the motivational salience of rewarding stimuli (Blair et al., 2004) or may even increase it (Bjork, Chen, & Hommer, 2012; Scerbo et al., 1990). So, for example, Bjork and colleagues (Bjork, Chen, & Hommer, 2012) found that psychopathy predicted faster reaction times when responses were rewarded, but not when they were unrewarded. Little direct empirical evidence exists regarding psychopathy and experiences of disgust or happiness; of all other emotions sadness may be the next-most likely to be significantly impaired (Marsh & Blair, 2008; Dawel, O'Kearney, McKone, & Palermo, 2012), although some direct evaluations of sadness in psychopathy find no significant effects (Marsh et al., 2011b).

Specific impairments in subjective fear are related to a final interesting fear-related finding in psychopathy, which is that psychopathy also impairs the ability to recognize when *others* are experiencing fear. A number of studies have assessed the degree to which psychopathy affects the recognition of various emotions from the face, body, and voice and have consistently shown that the form of emotion recognition most affected by psychopathy is fear recognition (Marsh & Blair, 2008; Dawel, O'Kearney, McKone, & Palermo, 2012). This effect appears to be unrelated to the age or sex of respondents (Marsh & Blair, 2008) and is more strongly related to the callous-unemotional factor of psychopathy than to the antisocial behavior factor (Dawel, O'Kearney, McKone, & Palermo, 2012). Psychopathy also affects the ability to determine which behaviors will elicit fear in another person (Marsh & Cardinale, 2012a). In the moral judgment task described earlier, psychopathy not only affected respondents' moral judgments about causing others fear, it reduced their ability to identify which behaviors would cause others fear. These two judgments were also correlated, such that respondents who less accurately identified statements like, "I could easily hurt you" as frightening also judged these statements as more morally permissible.

To summarize, the evidence is fairly strong that psychopaths do not feel fear as strongly as non-psychopaths and that this deficit does not extend across other emotions. In some psychopaths the experience of fear may be essentially absent (such as, perhaps, the psychopath quoted by Hare and the two youths assessed by Marsh and colleagues) but, in keeping with the idea that psychopathy is a continuum rather than a taxon, fear is likely muted to varying degrees rather than absent in most individuals with psychopathic traits. This pattern parallels the findings for emotion recognition in psychopathy; whereas psychopathy is associated with impaired recognition of fearful emotional expressions, recognition of other expressions appears relatively unaffected.

EMPATHY AND MORAL JUDGMENTS IN PSYCHOPATHY

Returning to the consideration of moral deficits in psychopathy, the fact that psychopathy impairs the recognition of others' fear—for example, fearful facial expressions—may be particularly important to consider because responses to expressions like these have been strongly linked to empathic concern, defined as a concerned or sympathetic response to another's distress (de Waal, 2008). It has been suggested that the ability to recognize another's distress is critical for the experience of empathic concern (Nichols, 2001). This is compatible with data that fearful emotional facial expressions elicit empathic concern and the desire to help from people who perceive them, even subliminally (Marsh & Ambady, 2007). Data on emotion recognition in psychopaths suggest that this fundamental empathy mechanism is impaired in psychopaths. What is this basis of this mechanism? There is not yet a consensus on how emotional facial expressions are recognized, but clearly the parallels between psychopathic deficits in emotion recognition and emotional experience are hard to miss. The one emotion that psychopaths clearly seem not to feel strongly—fear—is the emotion that they have the most difficulty recognizing in others. That the experience and recognition of emotions are linked has previously been observed across a number of emotions, including fear (Buchanan, Bibas, & Adolphs, 2010). This suggests that, in response to others' fear, people typically experience a low-level form of empathy sometimes termed *emotional contagion*, which is the ability to be affected by and share the emotional state of another (de Waal, 2009). It has been suggested that we exploit this low level emotional contagion in order to recognize emotions expressed by other people (Goldman & Sripada, 2005). Impaired empathic responding to others' fear may be the source of psychopaths' fear recognition deficits and, by extension, their deficits in empathic concern. This empathic breakdown appears to render others' expressions of fear literally meaningless in individuals with psychopathic traits.

Here a potential link between empathic deficits and moral judgments in psychopathy also emerges. It will be recalled that deficits in moral judgment most reliably occur in psychopathy when the task highlights or manipulates the distress of victims. And, when various forms of victim distress are compared, the strongest moral judgment deficits are observed for fear (Marsh & Cardinale, 2012a). Perhaps psychopaths' moral responses to victims' fear are impaired the same way their responses to fear expressed in the face or voice are impaired: their own muted capacity for fear leaves them unable to recognize or understand the victim's fear and thereby formulate the appropriate concerned reaction to it. So, for example, in studies assessing the moral/conventional distinction, the distress of potential victims, whether explicitly stated (e.g., ". . . and the victim cries") or requiring inference on the respondent's part (How would a victim react to being hit or pushed off a swing?) are presumed to drive the average respondent's judgment that the actions are not acceptable because they cause distress. This is also the reason the actions are viewed as impermissible and not dependent on social rules. Psychopathic respondents presumably fail to generate any empathic response to fear-relevant distress cues in these scenarios, and are thus left to engage in a qualitatively distinct process in order to arrive at a judgment. For example, they may recruit semantic information about societal rules to answer the question. Presumably this occurs in response to both moral and conventional violations, which is why psychopaths' judgments tend not to distinguish between these types of violations.

That psychopaths resort to moral judgment strategies like the recruitment of semantic knowledge about rules is supported by recent neuroimaging evidence. It will be recalled that Marsh and Cardinale (Marsh & Cardinale, 2012b) assessed moral judgments to emotionally evocative statements during a functional magnetic resonance imaging (fMRI) brain scan. During this task, moral judgments about statements that evoke anger, disgust, happiness, or sadness in the listener did not vary across groups. By contrast, high psychopathy scorers judged statements that would elicit fear (which are primarily threats) as more morally permissible than did low psychopathy scorers, a pattern that was matched by a significant difference in amygdala activation across groups. That low psychopathy scorers recruited the amygdala preferentially when judging frightening statements (but not other negative statements) supports the possibility of an empathic response to the stimuli during the task. High psychopathy scorers did not exhibit any increase in amygdala activation for these judgments. Instead, across judgments of all negative statements, high psychopathy scorers showed relatively increased activation in the dorsolateral prefrontal cortex, a region of the brain that is involved in facilitating abstract reasoning (Glenn, Raine, Schug, Young, & Hauser, 2009). This finding parallels those of a number of prior studies of psychopathy, in

which activation in the dorsolateral prefrontal cortex is found to be elevated in respondents with higher psychopathy scores during morally relevant decisions, for example, trolley car dilemmas (Glenn, Raine, Schug, Young, & Hauser, 2009) and the prisoner's dilemma (Rilling et al., 2007). This supports the idea that psychopathic traits increase reliance on abstract reasoning about rules instead of the emotional input that individuals without psychopathic traits preferentially use in order to arrive at moral judgments (Glenn, Raine, Young, & Hauser, 2009).

The types of moral reasoning paradigms in which behavioral differences emerge as a function of psychopathy, then, may be those for which abstract rule-based reasoning or other non-empathic strategies do not yield sufficient answers. When empathic concern is the default response in controls and a critical contributor to their moral judgments, psychopaths' moral judgments may be most likely to differ from controls. But when controls primarily engage in abstract reasoning about rules, weighing utilitarian gains across outcomes, or deploying emotional systems that are not impaired in psychopathy, such as anger (Rozin, Lowery, Imada, & Haidt, 1999), the task is less likely to identify group differences. This explanation can account for recent findings, for example, that psychopaths' judgments of accidental harm to a victim are more lenient than non-psychopaths' judgments (Young, Koenigs, Kruepke, & Newman, 2012). This suggests that psychopaths relied overly much upon the semantic information that people are not held responsible for true accidents that harm others—for example, when a pedestrian steps in front of a car and leaves the driver insufficient time to stop being hitting the pedestrian. People who are not psychopathic also know this rule, but in considering the action they would also be expected to experience empathic concern when imagining hitting someone with their car and judge this action more severely as a result.

Much remains unknown about moral reasoning in psychopathy. Although the evidence is substantial that moral judgments that rely on recognizing and responding to fear and similar forms of distress are impaired in psychopathy, what specific other forms of distress may be affected is less clear. Far less is known about the neurocognitive basis of sadness relative to fear, and how the experience or recognition of sadness is affected by psychopathy is relatively understudied. Abundant research has recently been conducted assessing empathic responses to pain (Lamm, Decety, & Singer, 2011), but how psychopathy might affect responses to the suffering that accompanies pain is also relatively poorly understood. Finally, how the various moral emotions affected by psychopathy—including empathic concern, remorse, and guilt—may be interrelated, and how they may affect moral reasoning in psychopathy, is an important topic for future study.

CONCLUSIONS

The case of psychopathy presents a strong case that some forms of moral reasoning rely on intact empathic responses to victims' distress, particularly fear, and therefore are reliant on basic emotional processes. There are many compelling reasons to focus on the rational basis of moral judgments (Cima, Tonnaer, & Hauser, 2010), but interpreting psychopaths' moral reasoning deficits as primarily rooted in rationality presents several difficulties. For one, as Nichols has argued (Nichols, 2002a), it is difficult to identify a rational defect that is present in psychopaths but that is absent in populations (e.g., very young children, autistic adults) that reliably draw the moral/conventional distinction. For another, the evidence seems to suggest that psychopathic deficits in moral judgments are more likely to emerge the more the moral reasoning task requires the consideration of victims' distress, particularly fear. This phenomenon can be observed both across tasks and within tasks (e.g., Aharoni. Sinnott-Armstrong, & Kiehl, 2012; Marsh & Cardinale, 2012a). Deficits in responding to others' fear in moral judgment tasks closely parallels findings that the fear system appears to be generally defective across a variety of neurocognitive paradigms in psychopaths. Finally, recent neuroimaging research suggests that psychopaths' deficits in both fear processing and moral reasoning are linked to dysfunction in evolutionarily ancient subcortical structures like the amygdala, the function of which is primarily affective. This suggests that the empathic deficits that lead to moral reasoning deficits in psychopathy emerge from basic affective processes.

These points are among the accumulating evidence that supports the presence of circumscribed deficits in moral reasoning in psychopathy. In better understanding the nature of these deficits, including their neurodevelopmental origins, we may gain an improved understanding not only of the nature of psychopathy, but of the nature of human morality.