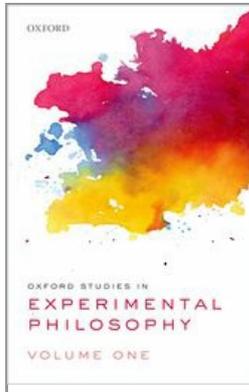


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The Moral Status of an Action Influences its Perceived Intentional Status in Adolescents with Psychopathic Traits*

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[–] Abstract and Keywords

Moral judgments about an action are influenced by the action's intentionality. The reverse is also true: judgments of intentionality can be influenced by an action's moral valence. For example, respondents judge a harmful side-effect of an intended outcome to be more intentional than a helpful side-effect. Debate continues regarding the mechanisms underlying this "side-effect effect" and the conditions under which it will persist. The research behind this chapter tested whether the side-effect effect is intact in

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adolescents with psychopathic traits, who are characterized by persistent immoral behavior, deficient moral emotions, and impairments in some forms of moral judgment. Results showed no differences between healthy adolescents and those with psychopathic traits: both groups judged harmful side-effects to be more intentional than helpful side-effects by an approximately 2:1 ratio. The chapter discusses these results in light of hypothesized mechanisms underlying the side-effect effect, and in light of our current understanding of moral reasoning deficits in psychopathy.

Keywords: psychopathy, callous-unemotional, side-effect effect, moral judgment, intentionality, social norm, adolescents

Judgments of the intentional status and moral status of an action may be reciprocally related. That the moral seriousness of an action is moderated by its intentionality is well established (Malle and Nelson, 2003; Mangan, 1949). Morally bad outcomes that the agent intends are more reprehensible than those that are foreseen, which are in turn more reprehensible than outcomes that are neither intended nor foreseen. The reverse also appears to be the case: that is, the intentional status of an action can also be moderated by its moral valence (Knobe and Mendlow, 2004; Knobe, 2003). For example, a morally bad outcome that is the side-effect of an **(p.132)** intended outcome is typically perceived as more intentional than an identically framed morally good outcome—a phenomenon known as the *side-effect effect*. This effect has been shown to be remarkably robust, emerging across cultures, in young children, and in patient populations with other deficits in moral judgments, including patients with autism and with damage to the prefrontal cortex (Knobe and Burra, 2006; Leslie et al., 2006; Young et al., 2006; Zalla et al., 2010). The present research assesses whether the side-effect effect emerges in individuals with psychopathic traits. Psychopathy is a disorder associated with pervasive immoral behavior and with deficits in some forms of moral reasoning. In assessing whether the side-effect effect remains intact in psychopathy, we may stand to gain an improved understanding of the mechanisms underlying the side-effect effect as well as an improved understanding of moral judgments in psychopathy.

The perhaps paradoxical finding that the moral status of an action affects its perceived intentionality was discovered by Joshua Knobe (Knobe and Mendlow, 2004; Knobe, 2003), in studies probing responses to protagonists whose actions brought about morally good versus bad outcomes. Participants in these studies read the following vignette:

The vice-president of a company went to the chairman of the board and said, “We are thinking of starting a new program. It will help us increase profits, but it will also harm the environment.” The chairman of the board answered, “I don’t care at all about harming the environment. I just want to make as much profit as I can. Let’s start the new program.” They started the new program. Sure enough, the environment was harmed.

Participants were overwhelmingly likely (by a 4:1 ratio) to say that the chairman in this vignette intentionally harmed the environment. But when the moral outcome of the vignette was changed such that the environment was helped rather than harmed,

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ascriptions of intentionality disappeared. Now participants were overwhelmingly likely (again, by a 4:1 ratio) to say that the chairman did *not* intentionally help the environment (Knobe, 2003). The vignette makes clear that the chairman is indifferent to the side-effects of his actions. This means that judging either the harmful or helpful side-effect to be intentional violates established accounts of intentional action, which stipulate that intent and desire must accompany intentional action (Malle and Knobe, 1997). Because the harm and help vignettes differ only in the moral valence of **(p.133)** the side-effect, the effect has been interpreted to mean that moral appraisals influence attributions of intent (Uttich and Lombrozo, 2010). If this is the case, it stands to reason that individuals in whom moral appraisals are defective may fail to exhibit the side-effect effect in response to similar scenarios.

Psychopathy is a developmental disorder associated with a range of moral deficits (Blair, 2007). In both youths and adults, this disorder is characterized by two domains of dysfunction: first, affective and interpersonal processes such as callousness, reduced remorse, and shallow affect; and second, antisocial and under-regulated behaviors, including stimulation seeking, poor regulation of anger, and serious criminal behavior (Forth et al., 2003). Due to the prevalence of immoral behaviors among individuals with psychopathic traits—behaviors that may include aggression, deceit, conning, property crimes, and threats and bullying—potential moral reasoning impairments in this population have been the topic of extensive investigations (Aharoni et al., 2011; Blair, 1995; Blair et al., 1995; Koenigs et al., 2012; Marsh and Cardinale, 2012; Marsh et al., 2011a).

Early assessments of moral reasoning in psychopathy included investigations of the moral/conventional distinction in healthy and psychopathic populations (Blair, 1995; Fisher and Blair, 1998). Moral violations are those that result in harm to a victim (e.g. hitting somebody), in contrast with conventional violations, which result in violations of social norms (e.g. talking out of turn) (Turiel, 1983). Whereas healthy children and adults distinguish moral violations as more serious and less modifiable by changes in social norms relative to conventional violations, psychopathic children and adults may be less likely to make this distinction (Blair et al., 1995; Blair, 1995). When pressed to justify why moral violations are unacceptable, psychopathic respondents are also more likely than controls to refer to social conventions or rules than to the welfare of the victim (Blair, 1995). These findings have led to hypotheses that psychopathy impairs the ability to use information about a victim's pain and distress to generate appropriate judgments about violations that result in victim suffering (Blair, 2005).

That psychopathy is particularly likely to result in moral reasoning impairments for violations that result in harm or distress to a victim has been supported by more recent investigations. Koenigs and colleagues found that, when judging classic trolley dilemmas, psychopaths who are **(p.134)** also low in anxiety are more likely than controls to endorse utilitarian outcomes even when they require personally harming an innocent victim (Koenigs et al., 2012). Glenn and colleagues found that psychopathy reduces support for moral considerations of harm prevention and fairness while minimally affecting support for other moral domains, including domains relevant to social convention, such as

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respect for authority and ingroup loyalty (Glenn et al., 2009). Marsh and Cardinale found that psychopathy is associated with greater acceptance of frightening others (but not causing other emotions, such as happiness, disgust, or anger) (Marsh and Cardinale, 2012). Finally, Young and colleagues found that psychopaths are impaired in judging the moral seriousness of accidental harm—a result that the authors interpret as reflecting impaired appreciation of the emotional impact of even accidental harm to a victim (Young et al., 2012). Together, these results are consistent with the idea that psychopathy reduces the influence of information relating to the distress of a victim when forming moral judgments. In addition, the findings of Young and colleagues suggest that judgments of moral seriousness in psychopathy are influenced by attributions of intention. What has not previously been tested is whether the reverse is also true: does the moral seriousness of an outcome affect judgments of intentionality in individuals with psychopathic traits? Will the side-effect effect emerge in this population?

Whether we expect to observe an intact side-effect effect in psychopathy depends in part on the putative mechanism of the effect—a topic that has been the subject of considerable debate (Knobe, 2010). One framework applied to the effect focuses on the moral emotions a respondent may have upon reading vignettes about harmdoers, such as blame (Alicke and Rose, 2010; Alicke, 2008), in line with the idea that negative affect toward an agent can bias judgments of the agent's intentionality (Malle and Nelson, 2003). The culpable control model posited by Alicke and colleagues assumes that respondents who read the scenario featuring the chairman whose actions either harm or help the environment draw conclusions about the character of the chairman based on his actions: that he is morally reprehensible if he does not care that his actions will harm the environment, but that he is merely not morally admirable if he does not care that his actions will help the environment. Information about morally reprehensible agents is then processed in a sort of "blame validation mode." Inferring that a morally reprehensible agent acted **(p.135)** intentionally facilitates assigning blame for the action (Alicke and Rose, 2010). An alternative mechanism postulated by Knobe (Knobe, 2010; Pettit and Knobe, 2009) is that respondents infer intentionality not via moral emotions but by estimating the distance between the agent's level of concern about the effects of his action and the expected degree of concern for a prototypical protagonist. An agent who is unconcerned about an outcome that most people would find unfavorable may therefore be viewed as being actively in favor of the harmful outcome (Knobe, 2010), perhaps because respondents seek out counter-normative mental states to account for actions that violate norms (Uttich and Lombrozo, 2010).

The two postulated mechanisms predict different outcomes for tests of the side-effect effect in psychopathy. If moral emotions are responsible for asymmetrical attributions of intention following good and bad outcomes, psychopathic traits may lead to a reduced or absent side-effect effect. This outcome should be particularly likely if the morally bad outcome in question is clearly framed as resulting in distress to a victim. This is consistent with findings that moral judgments of psychopaths and non-psychopaths are particularly likely to diverge in response to a victim's suffering or distress. If, however, comparison of the agent's response to a socially normative response is the mechanism by which

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respondents attribute intentionality, the side-effect effect may be intact in psychopathy. This is consistent with the idea that judgments that are made with reference to social norms and conventions are relatively unaffected in psychopathy. With these alternative hypotheses in mind, we set out to assess whether the side-effect effect emerges in adolescents with psychopathic traits as compared to healthy control adolescents.

Method

Participants

Participants were thirty-seven male and female adolescents aged 10 to 17. They were recruited from the local community using fliers, newspaper advertisements, and recruitment tables at community events. Of these participants, twenty-three were healthy controls and fourteen were classified as adolescents with psychopathic traits. The two groups of participants did not significantly differ in age, gender distribution, or average IQ (Table 5.1). A trained clinician assessed all children using the Schedule for Affective (p. 136)

Table 5.1. Participants and clinical measures

Variable	Healthy control (N = 23)	Psychopathic traits (N = 14)	p-value
Age, y (SD)	14.1 (1.8)	14.2 (2.1)	> 0.05
IQ, mean (SD)	108.1 (12.7)	100.1 (10.0)	> 0.05
Male sex, no. (%)	12 (52%)	9 (64%)	> 0.05
Pediatric psychopathic trait rating scale scores, mean (SD)			
Antisocial Process Screening Device	5.5 (3.9)	28.8 (4.6)	< 0.001
Psychopathy Checklist: Youth Version	—	24.3 (3.4)	—

Disorders and Schizophrenia for School-Age Children—Present and Lifetime Version (Kaufman et al., 1997). Exclusionary criteria for both groups included psychosis, pervasive developmental disorders, Tourette’s syndrome, mood or anxiety disorders, neurological disorders, IQ < 80, or medical illness severe enough to require treatment. Adolescents were classified as psychopathic following a score ≥ 20 on the Antisocial Process Screening Device (Frick and Hare, 2002) and a score ≥ 20 on the Psychopathy Checklist: Youth Version (Forth et al., 2003). Participants in the comparison group were required to score < 20 on the Antisocial Process Screening Device. This study was approved by the institutional review board at the National Institute of Mental Health. The parent or legal guardian of each participant provided written informed consent before the study began; participants provided informed assent.

Clinical measures

The Antisocial Process Screening Device (APSD; Frick and Hare, 2001). The APSD detects antisocial behavior in youths, including psychopathic traits and conduct and

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impulsivity problems. The twenty-item parent-completed scale has a three-factor structure comprised of the following dimensions: Callous/Unemotional, Narcissism, and Impulsivity. Consistent with prior studies (Finger et al., 2008; Marsh et al., 2008; Marsh et al., 2011b) a score of ≥ 20 was chosen as a cutoff score for classification of high psychopathic traits.

(p.137) *Psychopathy Checklist: Youth Version (PCL:YV; Forth et al., 2007)*. The PCL:YV was adapted by Hare and colleagues to measure psychopathic traits in adolescents. Based on a semi-structured interview and collateral information, two trained researchers assessed interpersonal, affective, and behavioral features related to psychopathic traits in youths. The two researchers demonstrated good inter-rater reliability ($R=0.91$). The PCL-YV is comprised of a twenty-item rating scale. Consistent with prior studies (Finger et al., 2011; Marsh et al., 2011a; White et al., 2012) a score of ≥ 20 was chosen as a cutoff score for classification of psychopathic traits.

Experimental task

The experimental task was adapted from tasks previously used to assess the side-effect effect in studies of children (Pellizzoni et al., 2009). Three vignettes were generated, each with three variants that featured, respectively, a positive, negative, or neutrally valenced outcome, for a total of nine scenarios. One sample vignette featured one child showing a frog to another child (with three possible outcomes). The variants of this vignette read as follows:

This story is about a boy named Andy. Andy has found a frog in his yard. Now, Andy loves frogs. A girl in Andy's neighborhood named Nicole [*positive: loves frogs too; negative: hates frogs; neutral: has never seen a frog before*]. Andy wants to bring the frog over to Nicole's house. If he brings the frog over, she will [*positive: be happy; negative: get upset; neutral: see a frog for the first time*]. Andy says, "I don't care that Nicole will [*positive: be happy; negative: get upset; neutral: see a frog for the first time*]. I am going to bring the frog over because I want to." So Andy brings the frog over to Nicole's house and she [*positive: is happy; negative: gets upset; neutral: sees a frog for the first time*].

Two additional vignettes were created: one featured a child playing a CD that causes another child to be happy, get upset, or tap her foot; and one featured a child who tells ghost stories that cause another child to be happy, get upset, or fall asleep. Because distinctions in moral reasoning between individuals with and without psychopathic traits are most likely to emerge in the context of victim distress, the consequence of all the negatively valenced scenarios was a child becoming upset.

Three versions of the task were created, and each child completed only one version. Each version featured one of each vignette (frog, CD, ghost stories), with the valence of the vignette counterbalanced across versions. **(p.138)** So, for example, one version of the task featured the neutral frog vignette, the negative CD vignette, and the positive ghost

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stories vignette; another version featured the positive frog vignette, the neutral CD vignette, and the negative ghost stories vignette, and so on. The side-effect effect task was programmed using Eprime, which allowed the order in which participants read the vignettes to be randomized across participants. After reading each vignette, participants answered three questions:

- (1) Does the agent *care* [about the outcome of the side-effect]?
- (2) Did the agent [cause the outcome of the side-effect] *on purpose*?
- (3) Was [the outcome of the side-effect] a *good* thing?

Questions were answered using a five-point scale (1 =definitely no; 5=definitely yes). Participants completed testing on a PC laptop in a single testing session in a private testing room at the National Institute of Mental Health. While they completed the measure, participants were monitored by a researcher who provided participants with clarification as needed. For most children, the measure was administered as part of a larger battery of behavioral testing that included questionnaires and computer tasks assessing learning, reasoning, and reaction times.

Results

For each question, a 2 (Group) × 3 (Valence) ANOVA was conducted to assess the interaction of moral valence and intentionality across groups. For the “on purpose” question, a main effect of valence emerged, $F(2,70)=30.518$, $p<0.001$, such that negatively valenced outcomes were viewed as more intentional ($M=3.92$, $SD=1.34$) than neutral ($M=2.41$, $SD=1.69$) or positively valenced outcomes ($M=2.16$, $SD=1.48$) (Figure 5.1). The results of within-subject contrast tests indicated that the pattern of the effect was primarily linear, $F(1,35)=31.360$, $p<0.001$, rather than quadratic, $F(1,35)=7.837$, $p=0.052$.

The side-effect effect was consistent across groups. Negatively valenced side-effects were viewed as more intentional than positively valenced side-effects by both healthy, $t(22)=-5.016$, $p<0.001$, and psychopathic, $t(13)=-3.122$, $p=0.008$, adolescents. A virtually identical proportion of healthy (65.2%) and psychopathic (64.3%) adolescents viewed the negatively valenced scenario as more intentional than the positively valenced scenario.

(p. 139)

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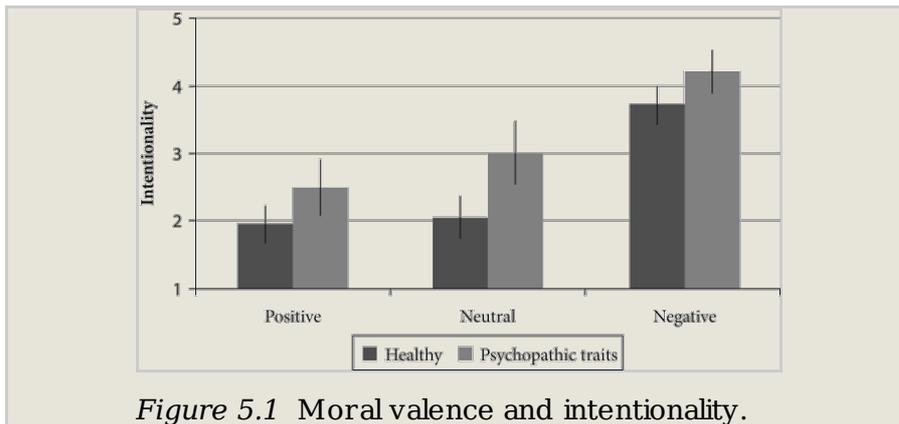


Figure 5.1 Moral valence and intentionality.

Consistent with this finding, no significant valence by group interaction was observed, $F(2,70)=0.325$, $p=0.724$. A marginally significant main effect of group was identified, such that psychopathic adolescents viewed all side-effects as more intentional than did healthy adolescents, $F(1,35)=3.698$, $p=0.063$. Across valences, adolescents with psychopathic traits viewed the agents' behavior as more intentional than did controls. For positively valenced outcomes, the group difference was $M=0.54$, for neutral outcomes $M=0.96$, and for negatively valenced outcomes $M=0.48$. None of these differences were statistically significant (all $ps > 0.10$) (Figure 5.1).

No main effects or interactions emerged for judgments of whether the agent cared about the outcome. Very little variance was observed in response to this question, either across groups or across valences, with 75% to 90% of participants supplying the extreme answer (1/the agent definitely did not care about side-effect). For judgments of whether the outcome was a good thing, a main effect of valence, $F(2,70)=159.35$, $p < 0.001$, was observed, with higher ratings for positive scenarios ($M=4.64$, $SD=0.63$) than neutral ($M=3.22$, $SD=1.18$) or negative ($M=1.30$, $SD=0.52$) scenarios. A main effect of group was observed for ratings of goodness, $F(1,35)=4.127$, $p=0.05$, such that psychopathic adolescents rated all outcomes to be better than did healthy adolescents (**p.140**)

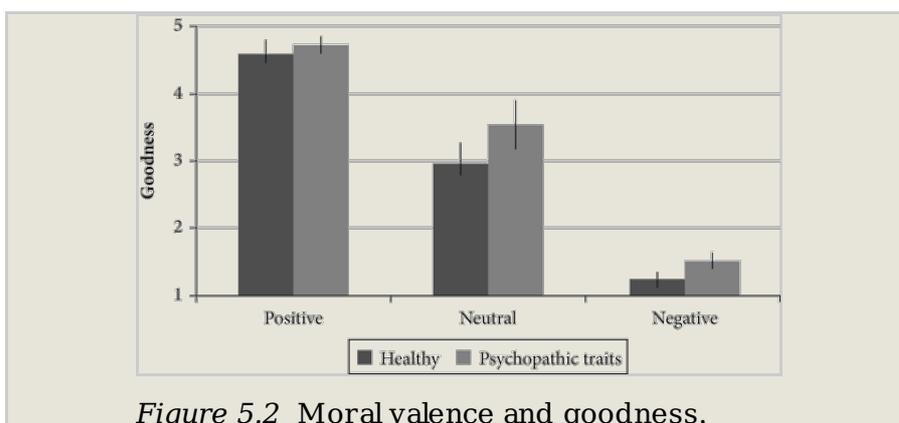


Figure 5.2 Moral valence and goodness.

(Figure 5.2). No significant interaction was observed in response to this question.

We next calculated correlations among the various rating scales across groups. So, for example, we assessed whether ratings of caring or goodness predicted judgments of

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intentionality across the sample. The only significant correlation among these variables was between assessments of caring and intentionality for positive statements. Across participants, assessments of how much the protagonists cared about the good outcomes positively predicted how intentional those outcomes was judged to be, $r(35)=0.484$, $p<0.05$ (Bonferroni corrected for multiple comparisons). This effect was driven largely by the responses of the healthy participants, $r(23)=0.63$, $p=0.001$, rather than the participants with psychopathic traits, $r(12)=0.29$, *ns*. Judgments of the goodness of the various outcomes were not associated with ratings of caring or intentionality.

Discussion

We found that the moral valence of an outcome significantly affects judgments of intentionality in both healthy adolescents and adolescents with psychopathic traits. Although psychopathic adolescents exhibit heightened immoral behavior, and although moral reasoning deficits have previously been identified in psychopathy, adolescents with **(p.141)** psychopathic traits show an intact side-effect effect. Both healthy adolescents and adolescents with psychopathic traits showed nearly identical patterns of attributing greater intentionality to agents whose actions resulted in morally negative outcomes than to agents whose actions resulted in morally positive outcomes. In both groups, the proportion of adolescents who attributed more intentionality to agents in the negative than the positive outcome scenarios was comparable to the proportions observed in previous experimental studies (Knobe and Burra, 2006; Knobe, 2003; Leslie et al., 2006; Young et al., 2006). In addition, our task included outcomes that were neutral in valence, and judgments of intentionality in response to these outcomes generally fell between those of positively and negatively valenced outcomes, as indicated by a predominantly linear pattern of means across conditions.

How can these findings help to explain the mechanisms underlying the side-effect effect? Prior evidence suggests that psychopathy is more likely to alter moral judgments than judgments related to social convention and norms (Blair, 2007). That the side-effect effect is intact in psychopathy is consistent with suggestions that this effect results from comparisons of the agent with a prototypical social actor—a judgment that requires understanding the moral norms of the social group (Knobe, 2010; Pettit and Knobe, 2009). Knobe has proposed that attributions of intentionality to actors in vignettes like those featured in this study rely on the distance between the agent's concern about the results of his actions and how concerned one would expect a typical person to be in that situation (Knobe, 2010; Pettit and Knobe, 2009). For example, participants in our study read about a boy named Andy who brought a frog over to a frog-loathing neighbor's house because he wanted to, and who claimed he did not care that the neighbor would get upset. Adolescents both with and without psychopathic traits perceived that Andy upset his neighbor on purpose, despite their agreement that he "did not care" about the effects of his actions. Because all of our participants recognized that upsetting someone else is objectively bad (no group differences in this judgment were observed), participants may have inferred that Andy's behavior was so far from the anticipated default that in professing not to care, he was in essence actively in favor of upsetting his neighbor. This kind of judgment relies on some minimal moral understanding, insofar as

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respondents can report that causing someone else to be upset is a bad outcome. However, any moral **(p.142)** assessments upon which the side-effect effect rest do not seem comparable to moral acceptability judgments that rely upon empathic responses to a victim's distress.

Some explanations for the side-effect effect do emphasize moral emotions that follow negative outcomes, for example, blame (Alicke and Rose, 2010; Alicke, 2008). Are these accounts consistent with the finding that the side-effect effect is intact in psychopathy? Blame is the response to an agent whose actions cause harmful consequences that are seen as foreseeable and avoidable. Like other moral emotions, blame serves useful social purposes. Holding reckless or negligent actors to account for their misdeeds perhaps reduces the likelihood that they will repeat those misdeeds (Alicke, 2008). Blame is thought to result from negative evaluations of an agent's behavior, which are thought to be rapid and automatic (Bargh and Chartrand, 1999). Once instantiated, blame is suggested to lead to a "blame validation mode" whereby people search for some party to whom they can assign the blame (Alicke and Rose, 2010). The moral tenor of an action can influence blame attributions, as Alicke and colleagues found when they asked participants to consider the case of a student who was in a car accident while either speeding home to hide his cocaine stash, or speeding home to hide a gift for his parents. The student was judged to be more responsible for the car accident in the cocaine scenario, presumably because there were no mitigating circumstances that reduced respondents' desire to assign blame (Alicke, 1992). Under the blame validation model, the side-effect effect results when respondents blame the harm-doer for the outcome he has caused and then seek to justify their blame by interpreting the behavior as intentional.

This model is somewhat more difficult to reconcile with the present findings, primarily because of its reliance on automatic negative evaluations. Abundant evidence exists to suggest that individuals with psychopathic traits show weaker automatic responses to negatively valenced stimuli and information. Psychopathy is associated with weakened changes in autonomic arousal (for example, skin conductance and potentiated startle) to negative stimuli, whereas psychopathic and non-psychopathic responses to positive stimuli are relatively similar (Herpertz et al., 2001; Levenston et al., 2000; Patrick, 1994; Rothmund et al., 2012; Vaidyanathan et al., 2011). If automatic negative evaluations underlie the side-effect effect, one would expect that individuals with psychopathic traits, whose **(p.143)** automatic responses to negative stimuli are not as strong as those of non-psychopathic individuals, would generate a weaker blame response in response to foreseeable harm and would therefore show smaller shifts in their judgments of intentionality. This was not the case in the present study. Does this mean that the types of scenario used to test the side-effect effect do not generate moral emotions, or that these emotions are irrelevant to judgments of intentionality?

One possibility is that emotions are involved in the side-effect effect, but not the sorts of moral emotions that are impaired in psychopathy. If one considers specific types of negative evaluative responses, it is anger that is most closely linked to blame (Malle and Nelson, 2003; Ortony et al., 1988). Anger is the typical emotional response to a negative

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outcome that is perceived to be caused by a social actor, and this emotion energizes a person to attempt to reverse the negative outcome (Frijda, 1986; Roseman et al., 1994). Angry responses are not impaired in psychopathy—in fact, one of the criteria for assessing psychopathy in children and adolescents focuses on tantrums and episodes of extreme anger (Blair, 2012; Forth et al., 2003). The same is true for individuals with damage to the ventral prefrontal cortex, who are also prone to bouts of extreme anger (Blair and Cipolotti, 2000). This is a patient population in whom various impairments in moral reasoning have been observed (Koenigs et al., 2007; Young et al., 2010), but in whom the side-effect effect is also intact (Young et al., 2006). This leaves open the possibility that blame validation relies not upon generalized negative evaluative responses, but specifically upon anger responses to the misdeeds of agents who did foresee or could have foreseen the harmful consequences of their actions. This explanation could account for observations of an intact side-effect effect both in psychopathy and in patients with ventromedial prefrontal lesions. This explanation is also consistent with previous findings that dissociable emotion systems are linked to different forms of moral judgment (Rozin et al., 1999) and that affective deficits in psychopathy appear to be largely confined to fear (Marsh and Blair, 2008; Marsh and Cardinale, 2012; Marsh et al., 2011b), with affective responding related to emotions such as disgust and anger largely intact.

A weakness of this argument, however, is that it presumes that psychopathic individuals would experience anger *in response to another person being harmed*. In the general population, anger is a common response to harm that befalls others, as demonstrated by moral domain **(p.144)** research showing anger during judgments of third-party autonomy violations such as theft, poisoning, and assault (Rozin et al., 1999). Judgments of autonomy violations are thought to entail considerations of “harm, rights, justice, freedom, fairness, individualism, and the importance of individual choice and liberty” (p. 575). That first-person harm-based violations evoke anger in psychopathic individuals is clear, with psychopathy reliably associated with angry responses to provocation and goal frustration (Blackburn and Lee-Evans, 2011). There is, by contrast, no evidence that third-person harm-based moral violations result in anger, and indeed, this possibility directly contradicts the available evidence that psychopathy impairs moral judgments about third-party harm.

Responses to neutral outcomes

One feature of the current paradigm that may also be more compatible with competence theories as outlined by Knobe (Knobe, 2010) than with blame-validation theories is the responses participants gave to outcomes of neutral valence. Very few studies have examined neutral outcomes in assessments of the side-effect effect (Knobe and Mendlow, 2004; Phelan and Sarkissian, 2008). Outcomes in the present study that were considered neutral were that the target individual in the story would fall asleep, tap her foot, or see a frog for the first time. That these outcomes were in fact approximately neutral in valence is supported by participants’ average response to the question of how good these outcomes were ($M=3.22$) which fell roughly between the endpoints of the scale (1 and 5). That respondents judge the intentionality of actions in tasks such as these by comparing

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the agent's behavior to that of a prototypical agent requires that agency be construed as a point on a sliding scale ranging from no intentionality to full intentionality. This allows an agent who "does not care" about an outcome to sometimes be viewed as in favor of the outcome and sometimes not, as a function of where on the scale the prototypical agent would be expected to fall. For a neutral outcome, the prototypical agent would be expected to be truly neither in favor of nor opposed to the outcome—that is, to fall upon the midpoint of the scale. Thus, agents in the present neutral-outcome stories would have views consistent with the prototypical agent, and one would predict that they would be ascribed a level of intentionality somewhere between agents who bring about good outcomes and those (p.145) who bring about bad outcomes. These were in fact the results we obtained, with a predominantly linear pattern of assigned intentionality observed across negative, neutral, and positive outcomes. It is less clear why these results would be obtained under the blame validation model—here one might anticipate a more strongly quadratic pattern, wherein blame responses would elicit increased attributions of intentionality to negative outcomes relative to positive or neutral outcomes, but that intentionality would not be construed differently across neutral and positive outcomes, as neither would elicit a blame response (although it is possible that respondents might perceive causally impinging on another person's outcomes in any way—negatively or not—to violate that person's autonomy to some small degree, and might thus perceive blameworthiness). It should be noted that group means suggest the possibility that psychopathic adolescents' responses followed a more quadratic pattern than did healthy adolescents', although the absence of a group \times valence interaction indicates that the patterns of effects were not significantly different across groups. At the very least, however, it cannot be conclusively stated that psychopathic adolescents' responses did not follow a quadratic pattern. An investigation of this issue in a study with a larger sample size might permit a more detailed investigation of potential differences in response patterns across groups.

Neutrally valenced outcomes also yielded another interesting pattern, albeit not one that reached statistical significance, which is that the largest differences in the mean judgments between groups was usually obtained in response to these questions. Adolescents with psychopathic traits showed a tendency to rate all outcomes to be better, and this difference was most pronounced in response to neutral outcomes. Similarly, adolescents with psychopathic traits as a rule attributed greater intentionality to the protagonists across the vignettes, but the mean group difference was again largest in response to neutral outcomes. It should be noted that a similar response bias toward assigning greater intentionality to the agents across conditions has been observed in very young children (3 years old) (Leslie et al., 2006). This response bias in the youngest children to attempt this task was attributed to their failure to understand the task. Could the same thing be true of psychopathic individuals to a degree? Many have speculated that psychopathic traits leave those who are affected able to simulate normal human responses to social and emotional stimuli without grasping the basis for those (p.146) responses (Blair et al., 2006; Cleckley, 1988). This leaves them prone to base their moral judgments more on social norms than on their low-level affective or empathic responses to moral dilemmas (Blair et al., 1995; Blair, 1995). In response to questions with obvious

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socially normative responses (is it good to upset someone or to make them happy?) individuals with psychopathic traits can provide approximately normal responses. But perhaps in response to questions with less obvious socially normative value, the mechanisms that individuals with and without psychopathic traits rely upon to answer the question diverge, which results in a divergence of their responses as well.

Further questions

Some limitations of this study must be observed in interpreting our results. First, our sample of participants with psychopathic traits was small relative to prior studies of the side-effect effect. It was, however, comparable to sample sizes employed in a number of previous studies of moral reasoning in psychopathy, suggesting that reliable effects can be obtained using this number of participants (Blair, 1995; Cima et al., 2010; Glenn et al., 2009; Gray et al., 2003). Moreover, the reliability of the effect was extremely similar across both groups we tested, and was comparable to the results from larger previous studies of the side-effect effect, suggesting that a larger sample of adolescents with psychopathic traits would be unlikely to yield different results than we obtained. A question that cannot be answered from our data, however, is whether a group of adolescents with disruptive behavior disorders but low levels of psychopathic traits would show the same results as the adolescents we tested. Increasing evidence supports the divergent etiology of conduct problems in these two subsamples of adolescents, and it is possible that patterns of moral reasoning across these groups would diverge as well. Finally, one might argue that a question that emerges from our findings is why we found no group differences in responses to how good it is when the victim of a negative side-effect becomes upset. Given prior findings that psychopathy impairs responses to victim distress, this finding could be seen as aberrant. One possibility is that judgments about the acceptability of victim distress vary depending on how the question is framed. It has been previously observed that asking whether a moral violation is “OK” versus whether it is “bad” yield different response patterns in psychopathic youths (Blair, 1995), perhaps because some phrasings are more **(p.147)** likely to be interpreted as referring to social acceptability versus moral acceptability. It is possible that participants interpreted our question about whether the various outcomes were good as socially normative rather than as a moral judgment.

Conclusions

Psychopathy—a disorder closely associated with impaired moral judgments and behavior—was found not to affect responses to vignettes testing the side-effect effect. This suggests that information about moral valence does not influence judgments of intentionality in psychopathy, in contrast to previous findings that information about intentionality does affect judgments of morality in psychopathy (Young et al., 2012). This is consistent with an emerging consensus that moral reasoning is unlikely to be associated with a single set of mechanisms, but that different domains of moral judgments are associated with dissociable cognitive processes and neural mechanisms (Parkinson et al., 2011). It is also consistent with the suggestion that whereas the behavior of individuals with psychopathic traits can make them appear “morally blind,” this blindness to issues of morality is domain-specific, reflecting the fact that psychopathy is associated with specific

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deficits in the integrity of neural systems that support moral reasoning (Blair, 2007).

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