Moral Emotions and the Envisaging of Mitigating Circumstances for Wrongdoing

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Abstract

Anger may be more responsive than disgust to mitigating circumstances in judgments of wrongdoing. We tested this hypothesis in two studies where we had participants envision circumstances that could serve to mitigate an otherwise wrongful act. In Study 1, participants provided moral judgments, and ratings of anger and disgust, to a number of transgressions involving either harm or bodily purity. They were then asked to imagine and report whether there might be any circumstances that would make it all right to perform the act. Across transgression type, and controlling for covariance between anger and disgust, levels of anger were found to negatively predict the envisioning of mitigating circumstances for wrongdoing, while disgust was unrelated. Study 2 replicated and extended these findings to less serious transgressions, using a continuous measure of mitigating circumstances, and demonstrated the impact of anger independent of deontological commitments. These findings highlight the differential relationship that anger and disgust have with the ability to envision mitigating factors.

Keywords: Anger, disgust, moral emotions, mitigating circumstances, moral judgment, deontological commitments

Moral Emotions and the Envisaging of Mitigating Circumstances for Wrongdoing

Within criminal law, *mitigating circumstances* refer to the circumstances surrounding an act of wrongdoing that, if proven to be factual, may serve to excuse or reduce the culpability of an ordinarily punishable act (Fitzgerald, 1962). An appeal to mitigating circumstances is not to contest the fact that a person performed a harmful act, but speaks to whether the act is a crime and whether the actor is culpable and liable for punishment. The Anglo-American legal system recognizes at least two broad classes of mitigating circumstances (Hart, 1968; Robinson, 1984). The first class focuses on the mental state of the actor at the time the act was performed (e.g., whether the actor was aware of her actions, mistaken about her movements, or coerced into performing the act unwillingly). The second involves the intended outcome of the act or the reason(s) for acting (e.g., whether the act was committed in the service of some greater good, to prevent further harm, performed out of necessity, or for self-defense). Although legal judgments and moral judgments of ordinary people do not always coincide, several studies have shown that many of the same defenses found acceptable within a legal context are likewise recognized by lay adults (e.g., Alicke, 2000; Darley & Shultz, 1990; Weiner, 1995; Woolfolk, Doris, & Darley, 2006) and even young children (e.g., Darley, Klossen, & Zanna, 1978). In one important study for example Darley et al. (1978) had adults, along with first and fourth graders, read a story about a person harming another person and then indicated how wrong the act was and how severely the actor should be punished. Some of the subjects, however, were provided additional background information pertaining to one of three different classes of legal defenses: provocation, necessity, and public duty. The results suggested that participants of all ages recognized all three of these factors as valid defenses, and reduced the severity of their judgments accordingly.

Most research in psychology has been interested in the kinds of conditions people conceive of as mitigating when reasoning about acts of harm. A large body of research has shown that adults and children alike reduce their condemnation of harm when it is committed unintentionally or by accident (Costanzo, Coie, Grumet, & Farnill, 1973; Cushman, 2008; Karniol, 1979), without foresight of the risks (Lagnado & Channon, 2008), under duress or coercion (Woolfolk et al., 2006), as just punishment,

training, instruction, or discipline (Rule & Duker, 1973; Sousa, Holbrook, & Piazza, 2009), as self-defense or retribution for a prior offense (Darley et al., 1978; Hewitt, 1975), out of necessity or in the service of a greater good (Darely et al., 1978; Nichols & Mallon, 2006; Sousa et al., 2009), or harm intended to help rather than to injure (Rule, Nesdale, & McAra, 1974). Less is currently known about the mitigating circumstances that may differentially influence people's anger or disgust as evoked by categories of wrongdoing not necessarily related to harm, for example, acts that violate societal norms about sexual or bodily purity (e.g., incest, paraphilia; see Gutierrez & Giner-Sorolla, 2007; Haidt, Koller, & Dias, 1993; Prinz, 2007; Rozin, Lowery, Imada, & Haidt, 1999; Russell & Giner-Sorolla, in press; Tybur, Lieberman, & Griskevicius, 2009; Young & Saxe, 2011).

Anger, Disgust, and Moral Judgment

Recently, researchers studying moral emotions have begun to examine the role of mitigating factors in the emotions people experience when perceiving an act of wrongdoing (e.g., Russell & Giner-Sorolla, 2011a, b). This research has started to document important differences between the emotions of anger and disgust—two distinct emotions that have both been implicated in judgments of wrongdoing (e.g., see Haidt et al., 1993; Hutcherson & Gross, 2011; Rozin et al., 1999).

Anger has long been understood as an emotional response to perceived wrongdoing, particularly intentional and unjustified harm, or acts of injustice, including violations of a person's rights (Averill, 1982; Batson, Chao, & Givens, 2009; Goldberg, Lerner, & Tetlock, 1999; Quigley & Tedeschi, 1996; Rozin et al., 1999). Although there is some disagreement about the exact relationship between anger and judgments of wrongdoing or blame (i.e., whether anger precedes, co-occurs with, or follows from these judgments; see e.g., Averill, 1982; Quigley & Tedeschi, 1996; Weiner, 1995), the relationship is nonetheless robust, such that changes in moral judgment tend to reflect corresponding changes in anger, and vice versa (see pilot study discussed below). For example, anger provoked in one situation has been shown to "spill over" into orthogonal decisions about blame and punishment, but dissipate when relevant cues of justice are highlighted (see Goldberg et al., 1999). At least three antecedent features of a harmful event seem to impact upon the intensity of anger: severity (Rule & Duker, 1973; Schwartz, Kane, Joseph,

& Tedeschi, 1978), intentionality (Russell & Giner-Sorolla, 2011a), and justifiability (Hewitt, 1975; Quigley & Tedeschi, 1996). Additionally, whether or not the act of harm was perceived to be avoidable or controllable may be a fourth antecedent, though findings for this dimension are less consistent (cf. Berkowitz & Harmon-Jones, 2004; Betancourt & Blair, 1992; Shaver, 1985; Smith & Ellsworth, 1985). Thus, it would seem that a number of contextual factors have the potential to elicit and modulate the intensity of anger.

By contrast, the elicitation of disgust seems to be governed by a more restricted range of antecedents (Russell & Giner-Sorolla, 2011a, b). Disgust is thought to be an object-focused emotion that responds to the presence of contagions, or pathogen-transmitting elements, such as feces, phlegm, blood, or rotting flesh (Oaten, Stevenson, & Case, 2009; Ortony, Clore, & Collins, 1988; Park, Faulkner, & Schaller, 2003). In the social domain, however, disgust may also respond categorically to a particular class of violations—those pertaining to bodily-purity norms, or the rules governing the proper uses of the body within a given culture (see Haidt, Rozin, McCauley, & Imada, 1997; Horberg, Oveis, Keltner, & Cohen, 2009; Rozin et al., 1999; Russell & Giner-Sorolla, 2011a, in press). Consistent with this thesis, Russell and Giner-Sorolla (2011a) found that, in direct contrast to anger, levels of reported disgust were unaffected by whether or not an act of wrongdoing was performed intentionally, and affected only by whether the act violated a bodily norm.

The fact that disgust responds to a more restricted range of antecedents than anger suggests that it should be more impervious to cognitive manipulations, including the envisioning of mitigating circumstances that might transform a moral judgment. In support of this view, Russell and Giner-Sorolla (2011b) had participants list anything that could change their opinion about an act of harm or a comparative purity violation. Participants filled in measures of their anger, disgust, and moral judgment before and after the listing task. The authors found that, although participants could just as easily list things for purity violations as for harm, the mental exercise of listing various counterfactuals did little to change their feelings of disgust, while their feelings of anger shifted more dramatically as a result of the

exercise. Additionally, any change in overall moral judgment was related to the change in anger not disgust.

In the present research, we extended this cognitive simplicity hypothesis for disgust more specifically to the envisaging of circumstances that might mitigate the perceived wrongness of a harmful or impure act. We predicted that anger would be negatively related to the imagining of mitigating circumstances for wrongdoing more so than disgust, due to anger's stronger association with the appraisals underlying moral judgments. This hypothesis follows from the research reviewed above, but is also supported more directly by some pilot data obtained by our research team. We presented 90 adults with either a harm transgression (a neighbor had kicked their pet dog) or an equivalent purity transgression (a neighbor had cooked and ate their pet dog after it died of natural causes). Participants reported their anger, disgust, and moral judgment regarding each act. Then the experimenter provided them with additional circumstances surrounding the act (e.g., that the dog was attacking a child [as a defense for harm], or the actor was stranded in the wilderness without food [as a defense for purity]). Participants rated their emotions and the wrongness of the act a second time, after having considered these extenuating circumstances, and we calculated difference scores of their judgments and emotions. It was found that changes in anger more closely mirrored changes in wrongness than did changes in disgust, when covariance between anger and disgust was controlled for.[1] This was true regardless of transgression type (i.e., harm or purity violation). Furthermore, reductions in anger were consistently larger for anger than for disgust—that is, disgust was more resistant than anger to change. These findings are consistent with the view that anger is more closely tied than is disgust to the conditions influencing people's judgments of wrongdoing.

The Current Research

In the present research we provide further empirical support for the argument that anger is more intimately tied to judgments of wrongdoing, and the factors impinging on judgments of wrongdoing, than is disgust. Specifically, individuals who report high levels of anger should struggle to envision circumstances that could overturn their initial moral judgment compared to individuals who report low

levels of anger. In contrast, if feelings of disgust operate largely independent of mitigating factors, but instead reflect the categorical presence (vs. absence) of contagious or "impure" elements, then levels of disgust should not be related to the envisioning of mitigating circumstances to the same degree as anger.

We tested these predictions in two studies, in which we had participants respond to transgressions involving harm or violations of bodily-purity norms. For each transgression, participants offered their moral judgment of the act, and provided ratings of anger and disgust, via both emotion terms and facial displays. Individuals then considered whether there might be circumstances that would make it "OK" (i.e., morally permissible) for the person to perform the act, and they justified their response either by describing the circumstances (Study 1) or by describing the circumstances and then classifying them (Study 2). In Study 2, we widened the scope of our examination by manipulating the perceived severity of the transgression, in addition to the transgression type. We also assessed two subject variables that were likely to influence the willingness of our participants to consider mitigating circumstances for wrongdoing: trait disgust and deontological-vs.-consequentialist moral commitments.

Study 1

Participants, Design and Procedures

We used a 3 (scenario: Dog, Age, Corpse) x 2 (transgression type: Harm vs. Purity) mixed-measures design. One hundred and fifty-three American participants (55 female; M_{age} = 31.63 years, SD = 11.04) participated via Amazon's Mechanical Turk (www.mturk.com) in exchange for payment. They were presented three different transgression scenarios, in a random order. Participants were randomly assigned to either the purity (n = 77) or harm versions (n = 76) of the scenarios. The harm transgressions described acts of harm or disrespect: hitting a pet dog (Dog), a 16-year-old stealing from a 70-year-old (Age), and kicking the body of a deceased spouse (Corpse). The purity transgressions described violations of bodily or sexual purity: eating a pet dog (Dog), a 16-year-old romantically involved with a 70-year-old (Age), and having sex with the body of a deceased spouse (Corpse). The harm and purity versions of each scenario were identical in wording, with the exception of the verb (e.g., "hit" vs. "ate" in the Dog scenario). For each transgression, participants were asked to imagine that they discovered one of their

neighbors had committed the transgression. They provided their moral judgment of the act, ratings of anger and disgust (including emotion words and facial expressions), responded to a Yes-No mitigating circumstances probe, and finally to a writing task, where they justified their Yes-No responses. After they had completed these procedures for all three scenarios, participants were debriefed and compensated.

Measures

For their moral judgment, participants rated how wrong it was for their neighbor to commit the act (1 = *Not at all wrong*; 7 = *Very wrong*). As measures of emotion, they rated the extent to which the event made them experience anger (*angry, mad, outraged, furious*), and disgust (*sickened, grossed out, queasy, repulsed*), rated on a scale 1 (Not at all) to 7 (Very much).[2] Participants were also presented two photographs of an actor, one depicting a prototypical angry face and another depicting a prototypical disgust face, taken from the University of California, David, Set of Emotion Expressions (Tracy, Robins, & Schriber, 2009). Participants rated on a 1-7 scale how much they felt the emotion conveyed by the facial expression. For the mitigating circumstances probe, participants were asked, "Can you think of circumstances in which it would be OK for someone to [e.g., eat their pet dog]?", and responded either "Yes" or "No". Participants were then asked to justify their response: "Please describe the circumstances that would make it OK for someone to [e.g., eat their pet dog], or write 'None' if there are no circumstances that would make it OK."

Results

Preliminary analysis. A 3 (scenario) x 2 (transgression type) mixed-measures ANOVA of wrongness scores revealed equivalent levels of wrongness across transgression type, $F < 1$, $p = .74$: the harm violations ($M = 5.92$, SD = 0.86) and purity violations ($M = 5.97$, SD = 0.97) were rated equally wrong. The interaction of scenario and transgression was non-significant, $F < 1$, $p = .83$, however, there was a main effect of scenario, $F(1, 151) = 16.68$, $p < .001$, such that the Corpse scenario was rated significantly more wrong ($M = 6.23$, SD = 1.20) than the Dog scenario ($M = 5.72$, SD = 1.48), $t(153) = 4.09$, $p < .001$, and the Age scenario ($M = 5.84$, SD = 1.46), $t(153) = 2.92$, $p < .01$, while the Dog and Age scenarios were rated equally wrong, $t < 1$, $p = .45$. Thus, on average, participants perceived all three acts

as highly wrong, and there were no systematic differences in wrongness ratings between transgression types, though there were minor differences in wrongness ratings across the three scenarios.

The anger words and the anger face had a strong internal reliability across the different scenarios and transgression types (Cronbach's α = .91-.95); likewise, for the disgust words and the disgust face (α = .84-.93). Since they were answered on the same scale, words and faces were aggregated together to form separate indices of anger and disgust. A 3 (scenario) x 2 (emotion) x 2 (transgression type) mixed-measures MANOVAs on indices of disgust and anger revealed the expected interaction of emotion and transgression type, $F(1, 151) = 140.55$, $p < .001$, $\eta^2_p = .48$; indicating more anger than disgust for harm, and more disgust than anger for purity.[3] Thus, ratings of disgust and anger were aggregated across the three scenarios. On average, participants reported more disgust ($M = 5.56$, SD = 1.34) than anger (M = 4.56, SD = 1.34) in response to the purity transgressions, and more anger ($M = 5.10$, SD = 1.29) than disgust ($M = 3.92$, SD = 1.28) in response the harm transgressions (all paired-samples ts > 8.36, ps < .001).

Moral emotions and moral judgment. Feelings of anger and disgust highly correlated across the three scenarios, both for harm, $r(76) = .55$, $p < .001$, and purity violations, $r(77) = .66$, $p < .001$. To test for the unique contribution of anger and disgust on moral judgments, we conducted a regression analysis on aggregated wrongness scores, with indices of anger and disgust as simultaneous predictors. This was done separately for harm and purity transgressions. Levels of anger were highly predictive of wrongness ratings for both harm, $\beta = .65$, $t(73) = 5.99$, $p < .001$, and purity transgressions, $\beta = .52$, $t(74) = 4.80$, $p <$ .001, controlling for levels of disgust. Levels of disgust were moderately predictive of wrongness ratings for purity transgressions, $\beta = .26$, $t(74) = 2.46$, $p = .02$, but unrelated to wrongness ratings for harm, β = -.04, $t < 1$, *ns*, controlling for anger. Thus, levels of anger co-varied with wrongness ratings more so than levels of disgust, across transgression type.

Envisaging of mitigating circumstances. The scenarios differed significantly in terms of the distribution of participants endorsing mitigating circumstances: Dog (44.5%), Age (23.0%), and Corpse (14.5%), according to a related-samples Cochran's Q test, $p < .001$. Cross-tabulation 2 x 2 Chi-square

tests of the Yes-No responses, with transgression type (harm vs. purity) as the other independent variable, revealed no effect of transgression type on endorsement for the Dog (harm: 49%; purity: 40%) and Age scenarios (harm: 20%; purity: 26%), χ^2s < 1.10, *p*s > .28. However, a significantly greater percentage of participants endorsed a mitigating circumstance for the harm version of the Corpse scenario (21%), compared to the purity version (8%), $\chi^2(1) = 5.46$, $p < .02$, $\phi = .19$. Importantly, there was no difference in the overall rate of endorsement of mitigating circumstances as a function of transgression type. On average, participants endorsed mitigating circumstances for roughly one out of three of the scenarios for both the harm transgressions ($M = 0.30$, SD = 0.25) and purity transgressions ($M = 0.25$, SD = 0.26), independent-samples $t(151) = 1.21$, $p = .23$. Thus, it was not the case that it was simply conceptually harder to envision mitigating circumstances for purity transgressions than for harm transgressions.

The mitigating circumstances participants reported were coded first by the first author and second by an independent rater blind to the purposes of the study, who was instructed on the application of the coding scheme. Six responses were omitted because the meaning was unclear (e.g., "at the childish age") or they reported that the act would be permissible under any circumstances. Interrater agreement was strong across the six scenarios (Cohen's $\kappa = .90$-1.00). Although a few participants provided multiple rationales (max = 2), most responses were comprised of a single rationale. This was true across transgression type: on average, participants generated an equivalent number of rationales for harm transgressions ($M = 0.70$, SD = 0.52) and purity transgressions ($M = 0.66$, SD = 0.60), $t < 1$, $p = .68$. Although rationales varied between scenario (see Table 1), some common themes emerged across transgression type. For example, in both the Dog purity scenario and Age harm scenario, participants were willing to excuse the wrongdoing if it occurred in a survival or emergency situation. Self-defense and revenge were rationales found only in the harm scenarios, while performing the act in a different culture and consent were themes found only among the purity scenarios. Thus, although mitigating categories varied between the scenarios, some common rationales emerged as well.

[Insert Table 1 about here]

Relationship between emotions and envisaging of mitigating circumstances. To test the overall strength of anger vs. disgust on endorsement of mitigating circumstances within the harm and purity transgressions, we aggregated Yes-No responses to the three scenarios to form a continuous measure, ranging from 0-1, reflecting the proportion of Yes responses (1 = "Yes" to all three scenarios; 0 = "No" to all three scenarios), and ran a linear regression, using anger and disgust indices as simultaneous predictors. Across the three scenarios, anger negatively predicted endorsement of mitigating circumstances for both harm transgressions, β= -.35, $t(74) = 2.39$, $p < .02$, and purity transgressions, β= -.32, $t(73) = 2.61$, $p < .02$, controlling for shared variance with disgust. In contrast, disgust was statistically unrelated to endorsements for both harm, β= -.20, $t(74) = 1.63$, $p > .10$, and purity transgressions, β= .00, $t = 0$, *ns*, controlling for shared variance with anger. Thus, anger negatively predicted the envisaging of mitigating circumstances, independent of disgust, while levels of disgust were unrelated to the envisaging of mitigating circumstances, when covariance with anger was controlled for.

Discussion

The findings of Study 1 provide initial support for our hypothesis that anger is more closely tied to the conditions that mitigate judgments of wrongdoing than is disgust. Although feelings of anger and disgust highly correlated across the harm and purity vignettes, the independent contribution of anger to judgments of wrongdoing was significant, while the independent contribution of disgust was not. Furthermore, anger negatively predicted the envisaging of mitigating circumstances independent of disgust, whereas disgust was largely unassociated with mitigating circumstances. Interestingly, these results cannot be explained in terms of participants finding it easier to envision factors that could reduce their judgments of harm, as opposed to purity transgressions. As anticipated, our harm vignettes evoked greater anger than disgust, and our purity vignettes evoked more disgust than anger; nevertheless, with the exception of the Corpse scenario, participants envisioned mitigating circumstances for purity transgressions just as often as for harm. Thus, differences observed here between anger and disgust are unlikely to be attributed to underlying conceptual differences between harm and purity violations with

regards to the plausibility of mitigating conditions. Likewise, the present findings cannot be explained by differences in perceived intentionality, as the harm and purity transgressions were all presented as intentional acts[4], and intentionality (as a response category) rarely appeared in participants' mitigating circumstances (see Table 1).

Study 2

These initial findings are encouraging, yet Study 1 had several limitations that we sought to overcome in Study 2. First, although the purity vignettes produced more aggregate disgust than anger, it is possible that participants perceived some harm in the purity vignettes, and thus the boundary between harm and purity was not as clear as it could be. For example, we did not specify in the Dog purity vignette how the dog died before it was consumed. Thus, some participants may have inferred that the neighbor killed the dog before eating it. Given the somewhat fuzzy boundaries between harm and purity in Study 1, we sought in Study 2 to more carefully control for inferences of harm within the purity vignettes. Second, the acts described in the vignettes were all perceived to be highly immoral. It remains to be seen whether our findings might replicate with less serious transgressions. Thus, in Study 2 we manipulated the severity of the transgression, in addition to the type of transgression. Third, the instructions we used to assess mitigating circumstances in Study 1 were worded such that most participants provided only one circumstance or none at all. In Study 2, we amended the instructions to foster more continuous responses. Specifically, participants were instructed to list as many distinct circumstances as they could think of, and we constructed a 13-item classification scheme that they used to classify their responses.

Finally, in Study 1 we did not explore any subject variables that might differentiate participants who are willing to consider mitigating circumstances from those who are unwilling, or who are particularly sensitive to emotions of moral condemnation. For instance, it may be that disgust better predicts the envisaging of mitigating circumstances at the trait level (i.e., disgust sensitivity). Trait disgust, for instance, has been shown to increase the level of condemnation individuals have towards various purity violations, including attitudes towards homosexual acts (Inbar, Pizarro, Knobe, & Bloom,

2009) and drug use (Kurzban, Dukes, & Weeden, 2010). Thus, we included a measure of trait disgust in Study 2 to explore this possibility.

Differences in moral cognitive styles might also be relevant to the envisaging of mitigating circumstances. Research on moral cognitive styles suggests that individuals differ in how strictly they endorse and apply moral rules (e.g., see Lombrozo, 2009; Piazza, 2012). "Deontologists" tend to endorse moral rules without exception, while "consequentialists" believe that moral rules can be overturned or violated under the right circumstances. In particular, consequentialists seem to care more about whether an act brings about a good or beneficial outcome than whether an act violates a moral norm. By contrast, a deontologist might reason for example that torturing someone is wrong regardless of the good that might be obtained (e.g., preventing a terrorist attack). How strictly a person endorses moral norms might affect the amount of condemning emotion a person experiences with regards to harm or purity violations, which in turn may influence a person's willingness to envisage mitigating circumstances. On the other hand, deontological commitments might operate independent of emotions to affect mitigating circumstances. We explored these possibilities in Study 2.

Method

Participants. Participants were 204 adults (U.S. residents only) recruited through the same web service as in Study 1, in exchange for payment. A prescreening procedure omitted those who participated in Study 1. Twelve subjects were dropped because they did not view the action described in the vignette as wrongdoing (i.e., they said the act was "1 = Not at all wrong"), and thus it was senseless to have them consider mitigating circumstances for the act. This left a total of 192 participants (112 male, 80 female) with a mean age of 28.93 years (SD = 10.79). The ethnicity of the sample was 82% White/Caucasian, 10% Asian, 4% Hispanic/Latino, and 4% other or mixed ethnicities.

Pre-test. To obtain harm and purity vignettes that varied reliably in their severity, we pre-tested a number of harm and purity transgressions. We had 47 UK students from the University of Kent provide ratings of wrongness, anger and disgust for each scenario. The wrongness measure was the same as in Study 1, and the emotion measures involved single items—the anger and disgust facial displays from

Study 1 with corresponding labels "angry" and "disgusted". Based on the results, we selected two transgressions—one harm, one purity—that produced equally low wrongness scores, $p = .45$, and two transgressions—one harm, one purity—that produced equally high wrongness scores, $p = .80$. We also made sure that, independent of level of wrongness, the two harm transgressions evoked significantly more anger than disgust, while the two purity transgressions evoked significantly more disgust than anger (see Table 2 for the description of the vignettes, along with descriptive statistics).

Design, measures and procedures. We used a 2 (*transgression severity*: major vs. minor) x 2 (*transgression type*: harm vs. purity) between-subjects design. Participants were randomly assigned to one of four vignettes: *minor purity violation* (n = 43), *minor harm violation* (n = 51), *major purity violation* (n = 48), and *major harm violation* (n = 50). After reading the vignette, participants responded to the same moral judgment measure and anger and disgust assessments as in Study 1 (anger: $\alpha = .90$-$.95$; disgust: $\alpha = .71$-$.95$). These measures were followed by the mitigating circumstances instructions: "Can you think of any circumstances, not mentioned in the scenario, that would make it OK for [e.g., the brother and sister to do what they did?]." Participants were instructed that if they could not think of any circumstances that would make it permissible to perform the act, they were to write "none". After writing, they were asked to enumerate the number of distinct circumstances they wrote down, ranging from 0 (minimum) to 10 (maximum). They were instructed that if they previously wrote "none" that they should select "0" (one of the experimenters later verified that these instructions were followed and that the number selected matched the number of distinct circumstances participants wrote down, with discrepancies corrected). Participants who provided at least one distinct circumstance were provided a list of 13 categories to classify their response(s), including an "other" category for participants to volunteer their own category if they felt that none of the categories applied. The instructions read:

> "For each distinct circumstance you wrote down, select the category that most adequately classifies it. Please do not select more than one category for each circumstance that you wrote down (e.g., if you wrote down two distinct circumstances, select no more than two categories).

Please do not select a category that you did not write about, and read all the options before making your selection."

The 13-item classification scheme was developed by the authors to capture a wide range of mitigating circumstances people could possibly envisage (see Table 3 for a list of the 13 categories). The categories were either derived from categories obtained from Study 1 (e.g., "romantic love", "survival", "different culture"), reflected categories within criminal law (e.g., "provocation", "necessity", "insanity", "self-defense", "duress"; see Darley et al., 1978; Hart, 1968; Robinson, 1984), or pertained to categories addressed in past research (e.g., "utility", "consent"; see Sousa et al., 2009; "awareness"; see Lagnado & Channon, 2008; "privacy"; see Haidt et al., 1993).

Next, participants completed the Three-Domain Disgust Scale (Tybur et al., 2009), as our measure of trait disgust. This instrument assesses tendencies towards experiencing disgust in three distinct domains, and therefore produces three distinct sub-scales: moral disgust ($\alpha = .94$), sexual disgust ($\alpha = .87$), and pathogen disgust ($\alpha = .84$). Deontological (vs. consequentialist) commitment was assessed with an instrument adapted from Lombrozo (2009), but expanded by the authors from its original six items to include a total of 13 items that apply to a more diverse range of moral transgressions beyond those necessarily involving harm. Participants responded to 13 questions of the following form:

"Which of the following statements best characterizes your position on lying? (1) It is never morally permissible to lie. (2) If lying produces more good than bad, then it is morally permissible to lie. (3) If lying produces more good than bad, then it is morally obligatory to lie."

The other twelve questions concerned killing, torture, assisted suicide, stealing, incest, cannibalism, betrayal, deception, malevolent gossip, breaking promises, breaking the law, and treason. Scores ranged from 1 (Deontological response) to 3 (Strong Consequentialist response). Responses were reverse scored, so that increasing scores represented a stronger deontological commitment. The internal reliability of the instrument was good ($\alpha = .78$). Finally, participants answered demographic questions and were debriefed and compensated.

Results

Manipulation checks. A 2 (severity: minor vs. major) x 2 (transgression type: harm vs. purity) MANOVA on wrongness, anger, and disgust scores, confirmed the pilot study results. The major transgressions were viewed as more wrong (M = 5.71, SD = 1.61) than the minor transgressions (M = 4.70, SD = 1.69), $F(1, 188) = 20.19$, $p < .001$, $\eta^2_p = .10$. Despite the pretest, harm transgressions were viewed as more wrong (M = 5.59, SD = 1.40) than the purity transgressions (M = 4.80, SD = 1.95), $F(1, 188) = 12.68$, $p < .001$, $\eta^2_p = .06$. More importantly, the purity transgressions produced significantly more disgust (M = 4.78, SD = 1.63) than did the harm transgressions (M = 2.81, SD = 1.29), $F(1, 188) = 87.70$, $p < .001$, $\eta^2_p = .32$, whereas the harm transgressions elicited more anger (M = 3.71, SD = 1.62) than did the purity transgressions (M = 2.49, SD = 1.67), $F(1, 188) = 27.24$, $p < .001$, $\eta^2_p = .13$. Furthermore, the harm transgressions produced more anger than disgust, $t(100) = 6.77$, $p < .001$, while the purity transgressions produced more disgust than anger, $t(90) = 14.72$, $p < .001$. There were no interactions effects on any of these dependent measures, Fs < 2.03, ps > .15.

Preliminary analysis. On average, participants reported 0.72 (SD = 0.96) distinct mitigating circumstances, with scores ranging from 0 to 6 circumstances (53% of participants reported zero circumstances; 30% reported one circumstance; 13% reported two circumstances; 4% reported three or more circumstances). We conducted a preliminary 2 (severity) x 2 (transgression type) ANOVA on the number of mitigating circumstances participants reported, to test for potential differences due to the type of transgression, or severity of the transgression. There was no effect of severity of transgression on the number of mitigating circumstances participants envisaged (M_{major} = .71, SD = 1.03; M_{minor} = .72, SD = .89), $F < 1$, *ns*. Furthermore, the difference by transgression type was not quite significant (M_{harm} = .56, SD = 0.76; M_{purity} = .89, SD = 1.12), $F(1, 188) = 20.32$, $p = .14$, $\eta^2_p = .95$, and there was no interaction of severity and transgression type, $F < 1$, *ns.* Thus, as in Study 1, participants just as easily produced mitigating circumstances for purity as for harm. Additionally, the mildness of the transgression had no effect on the number of circumstances participants generated.

Zero-order correlations revealed that the trait disgust subscales were unrelated to mitigating circumstances, for both purity, rs < .14, ps > .16, and harm, rs < .15, ps > .17. Thus, trait disgust was dropped from further analysis. By contrast, state disgust, anger, and deontological commitment all correlated significantly with mitigating circumstances, for both harm and purity, rs > .23, ps < .03. As in Study 1, measures of state disgust and anger strongly correlated for both harm, $r(101) = .61$, $p < .001$, and purity violations, $r(91) = .60$, $p < .001$. Disgust correlated marginally with deontological commitments, but only for purity transgressions, $r(91) = .18$, $p = .09$ (harm, $r = .13$, p = .19), while anger did not correlate with deontological commitments for either transgression type, rs < .15, ps > .12. Finally, although both anger and disgust correlated with moral judgment ratings, when covariance between anger and disgust was controlled for in a regression, anger independently predicted judgments of harm, $\beta = .51$, $t(98) = 4.83$, $p < .001$, and purity, $\beta = .19$, $t(88) = 1.99$, $p < .05$, whereas disgust only independently predicted judgments of purity, $\beta = .56$, $t(88) = 5.82$, $p < .001$, but not harm, $\beta = .09$, $t < 1$, $p = .92$.

Categories of mitigating circumstances. Table 3 depicts the categories of mitigating circumstances participants listed for harm and purity transgressions. As can be seen, there was great variety in the kinds of mitigating circumstances participants envisioned for harm and purity transgressions, most likely due to the specific properties of the vignettes used. For example, consent and romantic love were more commonly used with regards to purity than harm, perhaps because these vignettes dealt with sexual acts—a domain of action in which consent and romantic love are particularly relevant. By contrast, self-defense, retribution, and survival were listed more frequently for harm than for purity. Self-defense and retribution, in particular, seem uniquely relevant to harm contexts.

Main analysis of emotions and mitigating circumstances. To investigate the independent contributions of anger and disgust on the envisaging of mitigating circumstances, we entered ratings of anger and disgust into a regression analysis as simultaneous predictors of mitigating circumstances, along with the deontological commitment variable (given its marginal relationship with disgust). Since there were no significant differences in mitigating circumstances reported due to severity or transgression type, we collapsed both variables in the analysis to improve our statistical power. Replicating the findings of

Study 1, ratings of anger significantly predicted the number of mitigating circumstances participants reported, in a negative direction, $\beta = -.30$, $t(188) = -4.20$, $p < .001$, after controlling for covariance with disgust. Also as in Study 1, after controlling for covariance with anger, disgust failed to serve as an independent predictor of mitigating circumstances, $\beta = -.04$, $t < 1$, *ns*. Deontological commitment, however, remained a significant predictor of mitigating circumstances, $\beta = -.19$, $t(188) = -2.75$, $p < .01$, independent of anger and disgust.

General Discussion

Across two studies and a variety of actions, when controlling for shared variance of anger and disgust, we found that strong feelings of anger interfered with the envisaging of circumstances that could transform the morality of the act, regardless of the type of transgression (harm or purity) or its severity. On the other hand, feelings of disgust were largely unrelated to the envisaging of mitigating circumstances, assessed as a state variable or trait variable. Furthermore, in Study 2, we showed that the influence of anger on the mitigation of wrongdoing operated independent of deontological commitments, that is, the tendency for an individual to condemn rule violations regardless of an act's consequences.

It is important to note that the circumstances participants were instructed to envision in our studies should not be construed as counterfactual alternatives—participants were not asked to think of alternative actions the actor could have performed, or what the actor could have done differently to avoid having performed the act at all (e.g., see Roese, 1997). Rather, participants were instructed to list circumstances that could change the moral status of the act in question while maintaining the fact of the act itself. Therefore, this research does not speak directly to how disgust and anger relate to the ability to generate and respond to counterfactuals, but only to anger and disgust differentially influencing the production of mitigating circumstances (cf. Russell & Giner-Sorolla, 2011b). Our methods also did not draw a strong distinction between partial and full mitigation, that is, between "mitigating circumstances" and "excuses". Although this subtle distinction is important within a legal context, it was beyond the purview of the present studies, which recruited lay people and not legal experts. Furthermore, while we

focused here on judgments of wrongdoing, future research should extend this line of investigation to attributions of blame as well, since wrongdoing does not necessarily entail culpability.

Why would anger be more associated with an inability to envision mitigating circumstances than disgust? One possibility is that feelings of anger placed participants in a punitive mindset, closing them off to information that could potentially exculpate the wrongdoer. While this is certainly possible (see e.g., Goldberg et al., 1999), this type of motivated prosecutor explanation is inconsistent with our pilot study, where we found that participants who were angered by an immoral act were generally open to mitigating circumstances provided by the experimenter and felt less angry as a result. Furthermore, recent findings suggest that feelings of disgust can likewise promote a condemning mental state (Schnall, Haidt, Clore, & Jordan, 2008; Wheately & Haidt, 2005), thus, anger may not be unique in this respect. More likely is that anger has a stronger connection, than disgust has, to the appraisals underlying moral judgment (e.g., whether act is perceived to be intentional, controllable, or justified; see Russell & Giner-Sorolla, 2011a). Thus, participants who reported strong feelings of anger in response to the harmful and impure acts were most likely attending to the reasons why the act in question was wrong or unjust, rather than how the act might be mitigated or excused. By contrast, feelings of disgust do not involve complex appraisals related to judgments of wrongdoing. Rather, disgust is elicited by the mere presence of contagious or taboo elements (e.g., dead bodies, sexual deviance) embedded within an action-event itself (Russell & Giner-Sorolla, 2011a, in press). These incidental feelings of disgust then become associated with a judgment that is motivated primarily by other elements (e.g., that the actor knowingly violated a cultural taboo). Yet when the appraisals supporting a judgment of wrongdoing are addressed via the elucidation of mitigating factors (e.g., the actor was forced to violate the taboo under duress or the victim gave their consent), the disgusting elements of the act remain, as do the disgust feelings they evoke. This is why, we contend, many of our participants who experienced high levels of disgust were still able to mentally transform an immoral act into a permissible one—their feelings of disgust were not directly tied to the appraisals guiding their moral judgment.

It is noteworthy that we obtained the effect of anger across two different categories of perpetrators. In Study 1, we asked participants to imagine that a neighbor committed the act, while in Study 2 the perpetrator was an unknown third party. Previous research has found that individuals are more likely to feel anger when someone close to them has done wrong rather than a stranger (Fischer & Roseman, 2007; Kuppens, van Mechelen, & Meulders, 2004). The instruction in Study 1 to imagine that a neighbor committed the act differs from prior research on the morally condemning emotions, which does not specify the closeness of the person who committed the act (e.g., Rozin et al., 1999; Russell & Giner-Sorolla, 2011 a, b). In future research it may be interesting to see if even greater intimacy with the transgressor (e.g., a romantic partner or family member) might influence the envisioning of mitigating circumstances to an even greater extent. Likewise, research by Batson et al. (2009) suggests that people experience more anger when they themselves or someone they care about are the victim of undeserved harm, as opposed to a stranger or out-group member. We might predict that individuals would find it particularly difficult to imagine mitigating circumstances when they themselves, or someone they care about, is the victim of wrongdoing.

One interesting corollary of our research was that participants were just as capable of coming up with plausible mitigating circumstances for purity violations, as they were for harm. This is somewhat surprising given past perspectives that have emphasized categorical differences between acts of harm and violations of purity (e.g., Haidt et al., 1993; Young & Saxe, 2011). For example, studies by Young and Saxe (2011) found that judgments of purity violations (e.g., incest) were less susceptible to manipulations of intentionality than judgments of harm (e.g., an act of incest was still wrong even if the actors did not know it was incest). Though very important, intentionality is only one factor among a number of factors that influence judgments of wrongdoing and blame (Monroe, Guglielmo, & Malle, 2012; Quigley & Tedeschi, 1996). The present findings suggest that factors related to consent, cultural norms, romantic love, coercion, and even the symbolic meaning of the act (e.g., whether the actors were performing theatrically) were all recognized by a number of participants as influential in their judgments of purity violations. Although some mitigating factors were unique to purity violations, a number of categories

overlapped with harm as well (e.g., performing a harmful or impure act out of necessity). Given the array of factors participants reported for purity, we assert that there is much to gain from a more systematic investigation of the conditions people find morally relevant to this domain.

Conclusion

Our current findings highlight the differential roles of anger and disgust in moral judgment and people's ability to change their judgments. Many studies have connected disgust to moral judgment (e.g., Inbar et al., 2009; Rozin et al., 1999; Schnall et al., 2008; Wheatley & Haidt, 2005). Still, the relationship between disgust and moral judgment is far from clear (see Haidt, 2001; Huebner, Dwyer, & Hauser, 2008; Hutcherson & Gross, 2011; Pizarro, Inbar, & Helion, 2011; Prinz, 2007; Russell et al., 2012). As we have seen in the present research, anger seems to be more tightly connected to moral judgment, and the factors affecting moral judgment, than is disgust. Furthermore, this seems to be the case for judgments of both harm and purity (the latter being the postulated "moral" domain of disgust). Thus, although disgust is under some circumstances linked to wrongdoing, it seems as if people can more easily separate their feelings of disgust from perceptions of wrongdoing than they can for anger. This is important to bear in mind when we consider interventions for redressing wrongdoing. Our findings suggest that people who are angry will find it difficult to come up with potential defenses for why a perpetrator may have acted. This is not to say that anger makes people unwilling to consider a valid defense when it is posed, only that an angry mind is unlikely to go looking for one.

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Footnotes

[1] Note that the covariance of disgust and anger is a recurrent problem in research of this kind aimed at discriminating the unique effects of disgust and anger. One potential source of covariance involves the metaphorical use of disgust language by lay people to express anger for transgressions theoretically irrelevant to disgust (e.g., lying, cheating, unfairness, breaking promises; see Nabi, 2002; Russell, Piazza, & Giner-Sorolla, 2012). Because of this issue, in the present studies we utilized regression analyses to control for shared variance between anger and disgust.

[2] Note that the term "disgust" was avoided as research suggests its meaning and usage in everyday language corresponds more closely to the theoretical meaning of anger than of disgust (Nabi, 2002).

[3] A number of other effects were observed that were of little theoretical interest. If interested in these results, please contact the authors.

[4] In the absence of contravening information, the default assumption is that an action is performed intentionally (see Rosset, 2008).

References

Alicke, M. D. (2000). Culpable control and the psychology of blame. *Psychological Bulletin, 126,* 556-574. doi:10.1037/0033-2909.126.4.556

Averill, J. R. (1982). *Anger and aggression: An essay on emotion.* New York: Springer-Verlag.

Batson, C. D., Chao, M. C., & Givens, J. M. (2009). Pursuing moral outrage: Anger at torture. *Journal of Experimental Social Psychology, 45,* 155-160. doi:10.1016/j.jesp.2008.07.017

Berkowitz, L., & Harmon-Jones, E. (2004). Toward an understanding of the determinants of anger. *Emotion, 4,* 107-130. doi:10.1037/1528-3542.4.2.107

Betancourt, H., & Blair, I. (1992). A cognition (attribution)-emotion model of violence in conflict situations. *Personality and Social Psychology Bulletin, 18,* 343-350. doi:10.1177/0146167292183011

Costanzo, P. R., Coie, J. D., Grumet, J. F., & Farnill, D. A. (1973). A reexamination of the effects of intent and consequence on children's moral judgment. *Child Development, 44,* 154-161. doi:10.2307/1127693

Cushman, F. (2008). Crime and punishment: Distinguishing the roles of causal and intentional analysis in moral judgment. *Cognition, 108,* 353-380. doi:10.1016/j.cognition.2008.03.006

Darley, J. M., Klosson, E. C., & Zanna, M. P. (1978). Intentions and their contexts in the moral judgments of children and adults. *Child Development, 49,* 66-74. doi:10.2307/1128594

Darley, J. M., & Schulz, T. R. (1990). Moral rules – Their content and acquisition. *Annual Review of Psychology, 41,* 525-556. doi:10.1146/annurev.ps.41.020190.002521

Fischer, A. H., & Roseman, I. J. (2007). Beat them or ban them: The characteristics and social functions of anger and contempt. *Journal of Personality and Social Psychology, 93,* 103-115. doi:10.1037/0022-3514.93.1.103

Fitzgerald, P. J. (1962). *Criminal law and punishment.* Oxford: Oxford University Press.

Goldberg, J. H., Lerner, J. S., & Tetlock, P. E. (1999). Rage and reason: The psychology of the intuitive

prosecutor. *European Journal of Social Psychology, 29,* 781-795. doi:10.1002/(SICI)1099-0992(199908/09)29:5/6<781::AID-EJSP960>3.0.CO;2-3

Gutierrez, R., & Giner-Sorolla, R. (2007). Anger, disgust, and presumption of harm as reactions to taboo-breaking behaviors. *Emotion, 7,* 853-868. doi:10.1037/1528-3542.7.4.853

Haidt, J. (2001). The emotional dog and its rational tail: A social intuitionist approach to moral judgment. *Psychological Review, 108,* 814-834. doi:10.1037/0033-295X.108.4.814

Haidt, J., Koller, S., & Dias, M. (1993). Affect, culture, and morality, or is it wrong to eat your dog? *Journal of Personality and Social Psychology, 65,* 613-628. doi:10.1037/0022-3514.65.4.613

Haidt, J., Rozin, P., McCauley, C., & Imada, S. (1997). Body, psyche, and culture: The relationship between disgust and morality. *Psychology and Developing Societies, 9,* 107-130. doi:10.1177/097133369700900105

Hart, H. L. A. (1968). *Punishment and responsibility.* Oxford: Oxford University Press.

Hewitt, L. S. (1975). The effects of provocation, intentions, and consequences on children's moral judgments. *Child Development, 46,* 540-544. doi:10.2307/1128155

Horberg, E. J., Oveis, C., Keltner, D., & Cohen, A. B. (2009). Disgust and the moralization of purity. *Journal of Personality and Social Psychology, 97,* 963-976. doi:10.1037/a0017423

Huebner, B., Dwyer, S., & Hauser, M. (2008). The role of emotion in moral psychology. *Trends in Cognitive Sciences, 13,* 1-6. doi:10.1016/j.tics.2008.09.006

Hutcherson, C. A., & Gross, J. J. (2011). The moral emotions: A social-functionalist account of anger, disgust, and contempt. *Journal of Personality and Social Psychology, 100,* 719-737. doi:10.1037/a0022408

Inbar, Y., Pizarro, D. A., Knobe, J., & Bloom, P. (2009). Disgust sensitivity predicts intuitive disapproval of gays. *Emotion, 9,* 435-439. doi:10.1037/a0015960

Karniol, R. (1978). Children's use of intention cues in evaluating behavior. *Psychological Bulletin, 85,* 76-85. doi: 10.1037/0033-2909.85.1.76

Kuppens, P., Van Mechelen, I., & Meulders, M. (2004). Every cloud has a silver lining: Interpersonal and

individual differences determinants of anger-related behavior. *Personality and Social Psychology Bulletin, 30,* 1550-1564. doi:10.1177/0146167204271176

Kurzban, R., Dukes, A., & weeden, J. (2010). Sex, drugs and moral goals: Reproductive strategies and views about recreational drugs. *Proceedings of the Royal Society B,* 1-8. doi:10.1098/respb.2010.0608

Lagnado, D. A., & Channon, S. (2008). Judgments of cause and blame: The effects of intentionality and foreseeability. *Cognition, 108,* 754-770. doi:10.1016/j.cognition.2008.06.009

Lombrozo, T. (2009). The role of moral commitments in moral judgment. *Cognitive Science, 33,* 273-286. doi:10.1111/j.1551-6709.2009.01013.x

Monroe, A. E., Guglielmo, S., & Malle, B. F. (2012). Morality goes beyond mind perception. *Psychological Inquiry, 23,* 179-184. doi:10.1080/1047840X.2012.668271

Nabi, R. L. (2002). The theoretical versus the lay meaning of disgust: Implications for emotion research. *Cognition and Emotion, 16,* 695-703. doi:10.1080/02699930143000437

Nichols, S., & Mallon, R. (2006). Moral dilemmas and moral rules. *Cognition, 100,* 530-542. doi:10.1016/j.cognition.2005.07.005

Oaten, M., Stevenson, R. J., & Case, T. I. (2009). Disgust as a disease avoidance mechanism. *Psychological Bulletin, 135,* 303-321. doi:10.1037/a0014823

Ortony, A., Clore, G. L., & Collins, A. (1988). *The cognitive structure of emotions*. Cambridge, UK: Cambridge University Press.

Park, J. H., Faulkner, J., & Schaller, M. (2003). Evolved disease avoidance processes and contemporary anti-social behavior: Prejudicial attitudes and avoidance of people with physical disabilities. *Journal of Nonverbal Behavior, 27,* 65-87. doi:10.1023/A:1023910408854

Piazza, J. (2012). "If you love me keep my commandments": Religiosity increases preference for rule-based moral arguments. *International Journal for the Psychology of Religion*. *22,* 285-302. doi:10.1080/10508619.2011.638598

Pizarro, D., Inbar, Y., & Helion, C. (2011). On disgust and moral judgment. *Emotion Review, 3,* 267-268.

doi: 10.1177/1754073911402394

Prinz, J. J. (2007). *The emotional construction of morals.* Oxford: Oxford University Press.

Quigley, B. M., & Tedeschi, J. T. (1996). Mediating effects of blame attributions on feelings of anger. *Personality and Social Psychology Bulletin, 22,* 1280-1288. doi:10.1177/01461672962212008

Robinson, P. (1984). *Criminal Law Defenses (Volumes 1 and 2)*. St. Paul: West Publishing Company.

Roese, N. J. (1997). Counterfactual thinking. *Psychological Bulletin, 121,* 133-148. doi:10.1037/0033-2909.121.1.133

Rosset, E. (2008). It's no accident: Our bias for intentional explanations. *Cognition, 108,* 771-780. doi:10.1016/j.cognition.2008.07.001

Rozin, P., Lowery, L., Imada, S., & Haidt, J. (1999). The CAD hypothesis: A mapping between three moral emotions (contempt, anger, disgust) and three moral codes (community, autonomy, divinity). *Journal of Personality and Social Psychology, 4,* 574-586. doi:10.1037/0022-3514.76.4.574

Rule, B. G., & Duker, P. (1973). The effect of intentions and consequences on children's evaluations of aggressors. *Journal of Personality and Social Psychology, 27,* 184-189. doi:10.1037/h0034771

Rule, B. G., Nesdale, A. R., & McAra, M. J. (1974). Children's reactions to information about the intentions underlying an aggressive act. *Child Development, 45,* 794-798. doi:10.2307/1127848

Russell, P. S., & Giner-Sorolla, R. (2011a). Moral anger, but not moral disgust, responds to intentionality. *Emotion, 11,* 233-240. doi:10.1037/a0022598

Russell, P. S., & Giner-Sorolla, R. (2011b). Moral anger is more flexible than moral disgust. *Social Psychological and Personality Science, 2,* 360-364. doi:10.1177/1948550610391678

Russell, P.S., & Giner-Sorolla, R. (in press). Bodily-moral disgust: What it is, how it is different from anger and why it is an unreasoned emotion. *Psychological Bulletin.*

Russell, P. S., Piazza, J., & Giner-Sorolla, R. (2012). CAD revisited: Effects of the word moral on the moral relevance of disgust (and other emotions). *Social Psychological and Personality Science.* doi:10.1177/1948550612442913

Schnall, S., Haidt, J., Clore, G. L., & Jordan, A. H. (2008). Disgust as embodied moral judgment. *Personality and Social Psychology Bulletin, 34,* 1096-1109. doi:10.1177/0146167208317771

Schwartz, G. S., Kane, T. R., Joseph, J. M., & Tedeschi, J. T. (1978). The effects of posttransgression remorse on perceived aggression, attributions of intent, and level of punishment. *British Journal of Social and Clinical Psychology, 17,* 293-297. doi:10.1111/j.2044-8260.1978.tb00283.x

Shaver, K. (1985). *The attribution of blame: Causality, responsibility, and blameworthiness.*

Smith, C.A., & Ellsworth, P. C. (1985). Patterns of cognitive appraisals in emotion. *Journal of Personality and Social Psychology, 48,* 813-838. doi:10.1037/0022-3514.48.4.813

Sousa, P., Holbrook, C., & Piazza, J. (2009). The morality of harm. *Cognition, 113,* 80-92. doi:10.1016/j.cognition.2009.06.015

Tracy, J. L., Robins, R. W., & Schriber, R. A. (2009). Development of a FACS-verified set of basic and self-conscious emotion expressions. *Emotion, 9,* 554-559. doi:10.1037/a0015766

Tybur, J. M., Lieberman, D., & Griskevicius, V. (2009). Microbes, mating, and morality: Individual differences in three functional domains of disgust. *Journal of Personality and Social Psychology, 97,* 103-122. doi:10.10007/a0015474

Weiner, B. (1995). *Judgments of responsibility.* New York: Guilford.

Wheatley, T., & Haidt, J. (2005). Hypnotic disgust makes moral judgments more severe. *Psychological Science, 16,* 780-784. doi:10.111/j.1467-9280.2005.01614.x

Woolfolk, R. I., Doris, J. M., & Darley, J. M. (2006). Identification, situational constraint, and social cognition: Studies in the attribution of moral responsibility. *Cognition, 100,* 283-301. doi:10.1016/j.cognition.2005.05.002

Young, L., & Saxe, R. (2011). When ignorance is no excuse: Different roles for intent across moral domains. *Cognition, 120,* 202-214. doi:10.1016/j.cognition.2011.04.005

Table 1

Circumstances in which it would be OK to commit the transgression, by scenario and transgression type

Dog		Age		Corpse	
Harm	Purity	Harm	Purity	Harm	Purity
Hit Pet Dog	Eat Pet Dog	16-yr-old steals from 70-yr-old	16-yr-old romantically involved with 70-yr-old	Kick Dead Spouse	Sex with Dead Spouse
Dog was attacking someone or self-defense (19); Training or punishing the dog with mild harm (18); If the harm was unintentional (1)	Emergency situation where the actor was starving to death (33); Lived in a different culture where it's OK to eat dogs (5); Dog died of natural causes (1)	Emergency situation where the actor really needed the money for food or medicine (12); As revenge (1)	If consensual, parent's gave consent, or age of consent was sixteen (10); They are in love (6); Lived in a culture where it was legal (3); If the 16-yr-old was psychologically mature (3); If they were the last two people on earth (1)	Spouse was physically abusive when he/she was alive (12); Other reason (e.g., was an accident, corpse was on fire or needed to be moved) (8)	Unaware that the spouse is dead or died during sexual intercourse (4); They were in the grips of despair (3); Spouse consented before dying (2)

Note. Count in parentheses.

Table 2

Transgressions used in Study 2 with pre-test means and standard deviations

	Wrongness	Anger	Disgust
Minor Transgressions			
Phil, who is 18 years old, and his 67-year-old neighbor kiss each other passionately and rub against each other until they climax. (Purity)	5.23 (2.44)	3.79 (2.50)	6.11 (2.38)
Emily put false information on her resume, which makes it more impressive, and as a result gets hired by a company. (Harm)	5.51 (1.94)	4.21 (2.16)	3.40 (2.05)
Major Transgressions			
A brother and sister kiss each other passionately on the mouth. (Purity)	7.68 (1.95)	5.34 (2.83)	7.47 (2.00)
At his local bar, Frank walks over to a person who made disparaging comments about his favorite football team, and punches him off his bar stool. (Harm)	7.62 (1.33)	6.43 (2.17)	5.72 (2.24)

Note. Within-row comparisons of anger and disgust (based on repeated-measures t-tests) are all significant at $p < .01$. $N = 47$.

Table 3

Frequency of mitigating circumstances reported from each category by transgression type (Study 2)

Category	Transgression Type	
	Harm	Purity
The action was performed unintentionally, accidentally, or without awareness.	4	10
The action was performed out of self-defense or to protect another person from harm.	13	3
The action was performed for survival or because it was an emergency.	14	5
The action was performed with the consent of all persons involved.	1	26
The recipient of the action deserved it, or the action was performed as an act of just punishment or retribution for previous wrongdoing.	10	0
The action was performed with the intention to teach or help train the recipient of the action.	0	0
The actor was forced to perform the act under duress, coercion, or threat of life or serious injury.	3	5
The action was performed in the pursuit of a greater good (e.g., to save lives or prevent future harm).	5	3
The action was performed in private.	0	6
The action was performed in a cultural context where it's socially acceptable to perform the act.	4	14
The action was performed out of romantic love.	2	14
The action was performed by an individual who was insane or not with sound mind.	2	1
None of the above categories adequately classify my response. Please provide your own suitable	2	6

category (e.g., “mild harm”; “they were performing a play”; “they were acting”).

Total	60	93