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Moral Anger Is More Flexible Than Moral Disgust

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Abstract

The research examines whether anger rather than disgust will be more likely to be responsible for changes in moral judgment, after individuals consider potential circumstances. Participants first read a scenario that described a moral violation (harm/fairness versus purity) and then gave their initial moral judgment and emotions

toward the act. They were then asked to list things that could change their opinion and were provided with an opportunity to fill out the measures again, re-evaluating the scenario with these changes in mind. It was found that ratings of disgust did not change after generating potential circumstances; however, anger changed in differential ways for the two violation types. We also found that anger but not disgust predicted change in moral judgment. These findings suggest that moral anger is a more flexible emotion than moral disgust because anger is more likely to respond to changes in circumstances.

Keywords: Anger, Disgust, Moral Judgment, Flexibility, Morality

Moral Anger Is More Flexible Than Moral Disgust

Legal and moral judgments should, and do, take into account mitigating circumstances. For example, juries considering murder cases are often asked to consider factors such as the mental capacity of the accused and whether or not he or she was acting in self-defense. However, sometimes first impressions “stick” and have a lasting influence, being resistant to change and even influencing later reasoned

thought (Kunda, 1990). In this research we test the possibility that judgments of moral violations are more resistant to change through second thoughts – that is, less flexible - to the extent that they involve disgust rather than anger.

In support of our flexibility assumption, previous research has identified contextual factors that can influence the anger experience; however, to date similar effects have not been shown for disgust. The following factors have been shown to be influential on anger: perceptions of strength or resources (Mackie, Devos, & Smith, 2000), perceptions of justice (Goldberg, Lerner, & Tetlock, 1999), consequences of the act (Gutierrez & Giner-Sorolla, 2007) and relationship with the target (Fischer & Roseman, 2007; Kuppens, Van Mechelen & Meulders, 2004). Thus, there are numerous contextual appraisals which can influence whether anger is experienced in the first place, the intensity of anger, and its behavioral consequences.

By contrast, there is indirect evidence that moral disgust is relatively inflexible to contextual changes because disgust is an object-focused emotion (Ortony, Clore, & Collins, 1988). When disgust is elicited individuals are more likely to focus on a concrete judgment of whether or not a bodily norm violation has occurred, instead of focusing on what is known about the current context. For example, in research on the moral dumbfounding phenomenon (Björklund, Haidt, & Murphy, 2000), participants judged a moral violation negatively even though it is described in such a way that nobody is harmed and nobody's rights are violated, and persist in this judgment even though they cannot articulate reasons for it. Non-moral disgust, too, seems impervious to context; research by Rozin, Millman and Nemeroff (1986) finds that disgust-related contagion reactions persist even when an object only looks like something disgusting and even when the object is subjected to a context that should rationally purify it. This inflexibility to context may come about because disgust often serves as a disease

avoidance mechanism, in which it is better to avoid false alarms than to risk coming into contact with a contagious agent (Oaten, Stevenson, & Case, 2009; Park, Faulkner & Schaller, 2003). Disgust, then, seems oriented toward a more categorical judgment of an act or object; it discourages evaluations of the current circumstance, and seems to be less responsive to changes in circumstance.

Recently, we have found that even when controlling for anger and disgust's co-activation in moral contexts, and using variations of the same scenario, anger responds to the contextual cues of harm and intent; disgust does not, and only responds to whether or not a norm about the use of the body has been violated (Russell & Giner-Sorolla, in press a). Importantly, within this research both anger and disgust uniquely contributed to individuals' moral judgments. We also found that the appraisals of harm and intent fully accounted for the relationship between their relevant manipulations and anger. In contrast, purity and abnormality appraisals only partially accounted for the relationship between the bodily norm violation manipulation and disgust. Although suggestive, these results do not completely establish that anger is a more contextually flexible emotion than disgust. It could be that disgust responds to contextual factors, other than harm and intent, that we did not think to manipulate and measure.

In another line of research, we have found that people give less elaborated reasons for their disgust in comparison to anger, particularly in the context of justifying disgust toward bodily norm violators (Russell & Giner-Sorolla, in press b). When explaining disgust in a sexual context, participants often gave a tautological response based on disgust itself, such as, 'Paedophiles are disgusting because they are gross'. Cumulatively, these findings indicate that both anger and disgust are

influential to moral judgments; however, different types of appraisals are associated with them, which differ in their complexity and flexibility.

In research on the different principles motivating moral judgment, a distinction is made between principles of benevolence, fairness, and rights on the one hand, and principles that safeguard the perceived purity of the body and soul on the other hand (Graham, Haidt, & Nosek, 2009; Guerra & Giner-Sorolla, 2010). Research has found that harm and fairness violations are more likely to be associated with anger, and purity violations with disgust (e.g., Gutierrez & Giner-Sorolla, 2007; Horberg, Oveis, Keltner & Cohen, 2009; Rozin, Lowery, Imada, & Haidt, 1999). Our interest is then in both types of violations; because anger and disgust are semantically related and share certain cognitive features such as negativity and other-agency, people tend to report an appreciable amount of disgust even when anger predominates, and vice versa.

In this experiment, we asked participants to read a scenario that described a moral violation. Scenarios described, between participants, two different kinds of violation - either a purity violation (sexual or food taboo) or a non-purity violation (harm and fairness) - and there were two separate settings in which the violation occurred. Participants provided their initial moral judgment and emotions toward the behavior. After writing down up to five things that could change their opinion, they filled out the measures again, imagining that their hypothetical changes had come about.

Based on our previous findings, we think anger relative to disgust would be more likely to change from before to after thinking about the circumstances that could change their judgment, particularly when the moral violation predominantly provokes anger. However, disgust is unlikely to change, regardless of the type of violation.

Also, we expected changes in anger, rather than disgust, should better predict changes in moral judgment.

Method

Participants

Ninety seven participants (82 females, 15 males), students at the University of Kent between the ages of 18 to 52 (*M*= 23.41, *SD*=7.37), completed this experiment. Participants were given the chance to win a £50 raffle prize as an incentive for participating.

Design, Materials and Procedure

Participants first read one of four scenarios, which were written so that a hypothetical person, Joe, performed the behavior. Two of the related scenarios came from Graham, Haidt and Nosek (2009), supplying one harm violation (a person kicks a dog) and a corresponding purity violation (a person eats a dead dog). The other two scenarios were adapted from Gutierrez, Giner-Sorolla and Vasiljevic (2010). One described a fairness violation - a workplace sexual relationship in which power was abused, and the other corresponding scenario involved a sexual purity violation, a workplace sexual relationship involving adults with a large age difference between them.

After reading the scenario participants filled out a measure which assessed their moral judgment of the behavior on a “completely right” to “completely wrong” nine point scale. Participants also filled out measures of their anger and disgust, similar to the measures used in Gutierrez and Giner-Sorolla (2007); thus, participants gave word ratings for each emotion and rated their endorsement of facial photographs showing extreme forms of anger and disgust on separate scales, “not at all” to “extremely” nine point scales.

After filling out these measures, participants were asked: Is there anything that you believe could change your opinion about Joe's behavior?, using a yes/no question. They were then asked to list up to five things that could change their opinion. After listing each separate thing, participants were asked whether the thing they listed would change something about: "a) The circumstances leading to the behavior, b) Joe himself, c) The circumstances during the behavior, d) The consequences of Joe's behavior, e) Something about yourself, f) None of the above" (only selecting one of the six options). No major trends were detected in the type of things that were written according to participants coding (see results section).

Participants were then asked to imagine that they were able to change all the things they listed, and filled out the moral judgment and emotion measures again, re-evaluating the scenario with these changes in mind. The order of measures was counterbalanced and there were no significant effects involving order of presentation.

Data Preparation

As in previous research, the facial endorsement ratings had their strongest correlations with the corresponding emotion word scales, and differences in correlations were significant. Therefore, as in Gutierrez and Giner-Sorolla (2007) the facial endorsement and the word means were both standardized, and then averaged together, to create two general measures of anger and disgust at both time points**.** We also calculated difference scores for moral judgment, disgust and anger ratings, subtracting time 1 from time 2.

Results

Change

To assess change in opinion, mixed model GLM analyses were carried out entering time (before versus after listing) as a within-participant factor; type of

violation (harm/fairness versus purity) and setting of scenario (dog versus sexual relationship) as between-participants factors. Separate analyses were carried out with disgust, anger and moral judgment as dependent variables.

Disgust. The between-participant effects of type of violation, $F(1,90) = 12.78$, $p=.001$, partial $\eta^2= .12$, and setting of scenario, $F(1,90) = 39.09$, $p<.001$, partial $\eta^2= .30$, were significant, but the two-way interaction was not, $p=.13$. As expected, participants were more disgusted by the purity violations ($M = 0.25$, *S.E.* = 0.10) than the harm/fairness violations ($M = -0.24$, *S.E.* = 0.11), and by the dog scenarios ($M = 0.43$, *S.E.* = 0.10) than the sexual relationship scenarios ($M = -0.43$, *S.E.* = 0.10). None of the within-participants effects were found to be significant, all $p>.15$ (see Figure 1). That is, disgust stayed the same before and after imagining contextual changes, no matter what type of moral violation was involved.

Anger. The effects of type of violation, $F(1,90) = 7.87$, $p=.006$, partial $\eta^2= .08$, and setting of scenario, $F(1,90) = 41.27$, $p<.001$, partial $\eta^2= .31$, were significant. Again as expected, participants felt more anger towards the harm/fairness violations ($M = 0.23$, *S.E.* = 0.11) than the purity violations ($M = -0.19$, *S.E.* = 0.10), and by the dog scenarios ($M = 0.49$, *S.E.* = 0.11) than the sexual relationship scenarios ($M = -0.46$, *S.E.* = 0.10). The two-way interaction was also significant, $F(1,90) = 11.43$, $p=.001$, partial $\eta^2= .11$. Simple effects analyses revealed that persons felt more anger in the dog harm than the dog purity condition, $F(1,89) = 18.71$, $p<.001$, partial $\eta^2= .17$ (Dog harm: $M = 0.95$, *S.E.* = 0.15; Dog purity: $M = 0.04$, *S.E.* = 0.15); however, the difference between the sexual relationship conditions was non-significant, $p=.68$ (Sex harm: $M = -0.50$, *S.E.* = 0.15; Sex purity: $M = -0.41$, *S.E.* = 0.15).

More centrally to our hypotheses, the interaction between time and type of violation was significant, $F(1,90) = 7.30$, $p=.008$, partial $\eta^2= .08$ (see Figure 1).

Simple effects analyses indicated opposite directions of change in anger within the harm/fairness conditions, $F(1,90) = 3.67$, $p=.06$, partial $\eta^2= .04$, and the purity conditions, $F(1,90) = 3.63$, $p=.06$, partial $\eta^2= .04$. As expected, anger decreased within the harm/fairness conditions; however, within the purity conditions there was an increase in anger from initially low levels. No other within-participants effects were significant, all $p>.28$.

Moral Judgment. The effects of type of violation, $F(1,89) = 12.33$, $p=.001$, partial $\eta^2= .12$, and setting of scenario, $F(1,89) = 31.04$, $p<.001$, partial $\eta^2= .26$, were significant; however, the two-way interaction was not, $p=.70$. Moral judgment was more negative within the harm/fairness conditions ($M = 6.39$, *S.E.* = 0.27) than within the purity conditions ($M = 5.07$, *S.E.* = 0.26). Participants thought the dog scenarios ($M = 6.77$, *S.E.* = 0.27) were more wrong than the sexual relationship scenarios ($M = 4.69$, *S.E.* = 0.26).

The within-participant effect of time was significant, $F(1,89) = 35.37$, $p<.001$, partial $\eta^2= .28$, indicating that participants felt that the behavior was less wrong after listing things that could change their opinion, T1: $M = 6.46$, *S.E* = 0.19; T2: $M = 5.00$, *S.E* = 0.25. The interaction between time and type of violation was also significant, $F(1,89) = 7.81$, $p=.006$, partial $\eta^2= .08$. Simple effects analyses indicated a much larger reduction of wrongness after listing circumstances within the harm/fairness conditions, $F(1,89) = 36.93$, $p<.001$, partial $\eta^2= .29$ (T1: $M = 7.46$, *S.E* = 0.27; T2: $M = 5.32$, *S.E* = 0.37), than within the purity conditions, $F(1,89) = 5.15$, $p=.03$, partial $\eta^2= .06$ (T1: $M = 5.46$, *S.E* = 0.26; T2: $M = 4.69$, *S.E* = 0.35). These results were not qualified by interactions with setting of scenario, both $p>.10$. Moral judgments concerning purity violations were thus overall less likely to change than moral judgments concerning harm and fairness violations. This is consistent with the lesser

flexibility of disgust within each scenario and the stronger feelings of disgust overall in purity violations.

We then conducted a regression analysis across conditions using moral judgment difference scores as the DV, entering disgust and anger difference scores as predictors. Change in moral judgment was predicted by anger difference scores, β =.36, p=.005, not by disgust difference scores, β = .12, *p*=.36. These results show that changes in anger most directly drove the change in moral judgment between the two time points.

Listing Task

The majority of participants (80%) said that they believed something could change their opinion about the morality of the action. In a Setting x Violation Type GLM analysis on the amount of statements listed there was only a marginal effect of setting of scenario, $F(1,93) = 3.22$, $p=.08$, partial $\eta^2= .03$, in which participants listed slightly more things for the sexual relationship scenarios than the dog scenarios (Dog: *M*=1.67, *S.E.*=0.23; Sex: *M*=2.25, *S.E.*=0.23). However, importantly, the main effect of type of violation and the two-way interaction were not found to be significant, both *p*>.69. Thus, participants within the different type of violation conditions showed no differences in the amount of material that they could come up with.

We also looked at participants coding of the things they listed, in order to see if there were differences in the type of things listed, not just the overall amount. Over 90 % of participants did not use the “something about yourself” and “none of the above” coding categories, thus, they are not included in the analysis. To simplify matters we also used the total of both circumstances categories. A mixed model GLM analysis was carried out entering coding category totals (circumstances versus himself versus consequences) as a within-participant factor; type of violation (harm/fairness

versus purity) and setting of scenario (dog versus sexual relationship) as between-participants factors. The main effect of coding category was significant, $F(1,89) = 31.28$, $p<.001$, partial $\eta^2 = .25$; however, no other effects were significant, all $p > .14$. The means suggested that participants responses mainly focused on the circumstances surrounding the norm violation (Circumstances: $M = 1.09$, *S.E.* = 0.11; Himself: $M = 0.57$, *S.E.* = 0.08; Consequences: $M = 0.21$, *S.E.* = 0.05). Therefore, based on this analysis the participants did not seem to differ in the type of things that they listed within the different conditions.

Discussion

In this experiment, anger, but not disgust, was shown to be driving change in moral judgment when people generated potential circumstances that could change their opinion. People resisted changing their feelings of disgust toward harm/fairness violations and purity violations. However, anger showed greater change, although the pattern was different for the two violation types. Anger was less severe toward harm/fairness violations after participants considered things that could change their opinion, but when purity violations were concerned, if anything, there was a slight increase in anger, in a backlash effect. This finding can perhaps be interpreted in light of previous findings that a purity violation without a harm component (e.g. creating and eating a steak from human tissue without hurting anyone, or sexual norm violations) nonetheless can evoke some lower amount of anger (Haidt & Hersh, 2001; Gutierrez & Giner-Sorolla, 2007). We also found that *changes* in anger scores, not disgust, uniquely predicted the *change* in moral judgment for both types of violations. Thus, anger is more responsive than disgust to moral changes of mind.

Another interpretation of our finding could be that people made different inferences from anger in comparison to disgust, and this is why the emotions showed

different patterns of change. Fischer and Roseman (2007) found that contempt, an emotion similar to disgust, is different from anger in that it implies disapproval of the person's character of disposition rather than action. Our listing manipulation did not encourage individuals to make different types of inferences, but instead asked participants to come up with anything that could change their opinion we cannot determine if this interpretation is influential to our results. However, participants coding of their responses does not suggest that this interpretation could account for our findings because across all conditions participants were more likely to focus on the circumstances, rather that about the individual or consequences.

One concern about our findings might be based on the finding that responses to purity violations were in general less disapproving than responses to harm and fairness violations. So, it could be argued that the circumstances people came up with could have had different implications for different violations and scenarios. Specifically, for a scenario that was overall rated extremely negatively (e.g., kicking a dog), circumstances could only make it less wrong, while for one that was overall rated in the middle of our moral judgment scale (e.g., sex with a large age difference), people might have also come up with circumstances that made the scenario more wrong as well. However, the main results relevant to our hypothesis were found within scenario, in a design that directly compared anger and disgust responses to the same story. So, we think any differences between responses to stories increase the generalizability of our main results across different contexts and intensities of moral judgment, rather than providing a confound for them.

In conclusion, this experiment showed that any change in moral judgment, after considering potential circumstances, responds to changes in feelings of anger not disgust that are associated with the moral judgment. Even when people

idiosyncratically listed the most powerful things that could get them to change their mind, anger changed more than disgust in response to these novel circumstances, and had more to do with changes in moral judgment. This supports our contention that anger is fundamentally a more flexible emotion than disgust in moral judgment.

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Figure 1: *Change in Anger and Disgust Ratings*