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To cite this article: Helen Landmann & Ursula Hess (2016): What elicits third-party anger? The effects of moral violation and others' outcome on anger and compassion, *Cognition and Emotion*, DOI: [10.1080/02699931.2016.1194258](https://doi.org/10.1080/02699931.2016.1194258)

To link to this article: <http://dx.doi.org/10.1080/02699931.2016.1194258>

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 Published online: 27 Jun 2016.

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What elicits third-party anger? The effects of moral violation and others' outcome on anger and compassion

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ABSTRACT

People often get angry when they perceive an injustice that affects others but not themselves. In two studies, we investigated the elicitation of third-party anger by varying moral violation and others' outcome presented in newspaper articles. We found that anger was highly contingent on the moral violation. Others' outcome, although relevant for compassion, were not significantly relevant for anger (Study 1 and Study 2a) or less relevant for anger than for compassion (Study 2b). This indicates that people can be morally outraged: anger can be elicited by a perceived violation of moral values alone, independent of the harm done. A severe negative consequence for others is not necessary to elicit anger.

ARTICLE HISTORY

Received 10 December 2015
Revised 10 May 2016
Accepted 20 May 2016

KEYWORDS

Moral outrage; empathic anger; appraisal theory; altruistic punishment; cooperation

What elicits third-party anger?

People are often indignant over sportsmen who cheat, angry at actors in the banking crisis and outraged by politicians who misuse their power. However, what exactly elicits these emotional reactions is often not clear (Batson et al., 2007; Berkowitz & Harmon-Jones, 2004). The anger could be elicited by the unmoral acts themselves (e.g. cheating) or by the situations' direct negative consequences (e.g. losing money) or by a combination of both. This is the case both when a first party gets angry (e.g. the person who loses money) and when a third party gets angry (e.g. a witness to such an event). In the present study, we investigated the latter case: the elicitation of third-party anger.

Examples of third-party anger can be found in different contexts. For instance, people can experience anger at insufficient climate protection (Kals & Russell, 2001), at child-labour (Cronin, Reysen, & Branscombe, 2012) or when they witness bullying (Gross & Levenson, 1995). In these situations, the negative consequences for the self seem to play only a minor role. That is, the emoters do not suffer from climate change themselves, their own children are not forced to work and they themselves are not bullied at that very

moment. Thus, people seem to be capable of being angry without suffering direct negative consequences themselves.

However, as someone was harmed, just not the participants themselves, the question remains whether it is the moral norm violation per se (i.e. unjustified climate change policy, immoral production policy, bullying) that elicits the anger or the perception that harm was done (i.e. to future generations, the children who are forced to work, the bullied person) or a combination of both. Three different models can be derived from the literature to answer this question.

Model 1: moral outrage

Episodes of third-party anger are often referred to as moral outrage thereby pointing to the moral component of this emotional reaction. Thus, Montada and Schneider (1989) argue that moral outrage is elicited by an unfair or incorrect behaviour. They claim that moral outrage focuses on the agent responsible "for incorrect behaviour or for having neglected a duty" (Montada & Schneider, 1989, p. 321). Specifically, they argue that moral outrage "presupposes

appraisals of injustice” (p. 316) in contrast with compassion, which focuses on the distressed person (Montada & Schneider, 1989). From this perspective, people are outraged when they evaluate a behaviour as incorrect or unjust.

This view is compatible with the notion of *procedural justice* (e.g. Lind & Tyler, 1988) suggesting that *how* a decision is made (e.g. how the distribution of resources is reached) is often more important for evaluations of justice than the final outcome (e.g. the amount of resources one gets). A third party might evaluate a procedural injustice as incorrect or unjust and thus experience anger.

In appraisal theories of emotion, these evaluations are covered by appraisals of moral norm violation, normally referred to as *compatibility with internal standards* (Scherer, 2001), *value relevance* (Frijda, 1986) or *legitimacy* (Smith & Ellsworth, 1985). These appraisals address whether a situation or behaviour is perceived as morally correct. For instance, when someone does not follow a fair procedure or when someone’s intentions are incompatible with own values, people typically appraise this as morally wrong. Hence, people might experience third-party anger when they appraise a behaviour as violating a moral norm.

Thus, following the model of moral outrage, third-party anger should be elicited by incorrect behaviour (independent of outcomes) and this process should be explained by appraisals of moral norm violation.

Model 2: empathic anger

By contrast, Batson et al. (2007) argue that many instances of moral outrage might in fact be episodes of empathic anger. Empathic anger, they claim, is elicited when “the interests of a cared-for other are thwarted” (Batson et al., 2007, p. 1273). This cared-for other can be a close friend or someone for whom one feels compassion (Batson et al., 2007). Batson et al. propose that empathic anger occurs when we empathise with others, appraise their negative outcome and experience anger as a result. Thus, third-party anger should be elicited when the goals of a person we empathise with are thwarted.

This notion is compatible with early versions of the *frustration-aggression-hypothesis* (Dollard, Dobb, Miller, Mowrer & Sears, 1939 as cited by Berkowitz, 1989), suggesting that blocking a desired goal leads to aggression. In later versions of this approach, the idea is maintained that a negative event itself – without an evaluation of legitimacy – can lead to

anger and aggression (Berkowitz & Harmon-Jones, 2004). Thus, in empathic anger, we emphasise with the victim, feel their frustration and experience anger on their behalf. A more recent notion refines this approach by stating that frustration can be “translated” into fairness considerations (van Doorn, Zeelenberg, & Breugelmans, 2014). This might explain why anger and fairness considerations co-occur even though goal-blockage is the starting point of anger episodes.

In appraisal theories of emotion, the evaluation of negative outcomes or goal-blockage is covered by the appraisal dimension of *goal-conduciveness* (Scherer, 2001). This appraisal dimension normally addresses whether a situation has negative consequences for the emoter him- or herself (Scherer, 2001). Yet, it is possible that people also appraise the consequences for persons different from the emoter. For this, people might appraise the situation from the perspective of a person they empathise with (Omdahl, 1995) or they might treat a close other’s well-being as a personal goal (Nussbaum, 2001).

Following the model of empathic anger, third-party anger should be elicited when goals of others we empathise with are hindered (independent of whether a moral violation was at cause). This process should be explained by appraisals of others’ outcome.

Model 3: interaction of others’ outcome and moral violation

However, it is possible that third-party anger is neither elicited exclusively by a moral violation (Model 1) nor exclusively by the others’ negative outcome (Model 2), but rather by a combination of both. This account is compatible with Nussbaum’s view of anger and compassion. According to Nussbaum (2001, p. 321), compassion requires the belief that “a serious bad event has befallen someone” (*judgment of size*), that “this person did not bring the suffering on himself or herself” (*judgment of nondesert*) and that “this person ... is a significant element in my scheme of goals” (*eudaimonistic judgment*). In other words, we experience compassion when an innocent and cared-for person suffers. Anger, Nussbaum (2001) claims, requires “in addition, the thought that the damage was willingly inflicted by an agent, and that this agent acted in an inappropriate and unfair way” (p. 394). Following this argument, anger requires both factors – a negative outcome (i.e. the belief

about a serious suffering) and a moral violation (i.e. the belief that the behaviour was inappropriate and unfair). Thus, we would predict an interaction between moral violation and others' outcome.

This notion is compatible with the assumption of *single necessity* of appraisals. Single necessity refers to the controversial assumption that each appraisal from a proposed appraisal pattern is necessary for the respective emotion (Kuppens, Van Mechelen, Smits, & De Boeck, 2003). In other words, only when all appraisals (from the proposed appraisal set) are evaluated in the expected direction, should the respective emotion be elicited. Consequently, when one appraisal is missing, the emotion should not emerge. This assumption of single necessity can be applied to anger. Following Scherer (2001), the appraisal pattern proposed for anger includes goal hindrance (i.e. that a situation is appraised as negative for ones' goals) and incompatibility with internal standards (i.e. that someone violates a moral norm). Hence, anger should be elicited only when a situation is appraised both as hindering goals and as violating moral norms.

In sum, the anger that a third person experiences could be elicited by the violation of a moral norm (Model 1), by the others' negative outcome (Model 2) or by a combination of both (Model 3). Interestingly, empirical studies on this question point in different directions. On the one hand, justice evaluations (e.g. Cronin et al., 2012; Kals & Russell, 2001) and intention (Nelissen & Zeelenberg, 2009; Russell & Giner-Sorolla, 2011) are highly relevant for third-party anger. On the other hand, frustration appraisals (e.g. Kuppens et al., 2003; Van Mechelen & Hennes, 2009), empathic concern (Batson et al., 2007) and identification with the victim (Batson, Chao, & Givens, 2009; Gordijn, Yzerbyt, Wigboldus, & Dumont, 2006) can also affect third-party anger. Also, interactions of outcomes (i.e. losing a game) and a moral violation (i.e. cheating) were found (Krehbiel & Cropanzano, 2000; Weiss, Suckow, & Cropanzano, 1999). However, these studies did either not investigate the others' but rather the own outcome (Krehbiel & Cropanzano, 2000; Kuppens et al., 2003; Van Mechelen & Hennes, 2009; Weiss et al., 1999), they did not manipulate the others' outcome and the moral violation independently (Batson et al., 2007, 2009; Cronin et al., 2012; Gordijn et al., 2006; Kals & Russell, 2001) or they did not assess the role of appraisals and empathy (Nelissen & Zeelenberg, 2009; Russell & Giner-Sorolla, 2011). Thus, the

models of third-party anger cannot be tested with the extant evidence.

The present research

We investigated the independent influences of moral violation and others' outcome in the context of reading the newspaper. This report-based method, which is well established in research on third-party anger (e.g. Batson et al., 2009; Gordijn et al., 2006), differs from scenario-based studies, interaction-based studies and field studies: in contrast to scenario-based studies (e.g. Russell & Giner-Sorolla, 2011), participants do not imagine how they would feel hypothetically. Instead, participants indicate how they actually feel while reading the article. In contrast to interaction-based methods like social dilemma games (e.g. Batson et al., 2007; Nelissen & Zeelenberg, 2009) or competitive games (e.g. Krehbiel & Cropanzano, 2000; Weiss et al., 1999), participants are not personally involved in the situation. This allows to study emotions from a clear third-party perspective. In contrast to field studies like socio-political surveys (e.g. Cronin et al., 2012; Kals & Russell, 2001) or diary studies (e.g. Kuppens et al., 2003; Van Mechelen & Hennes, 2009), manipulations of specific variables are possible. The present report-based method is particularly fruitful for studying third-party anger because it is a common everyday experience to read a newspaper article that elicits anger. The newspaper articles in the present research covered the domains of financial investment (Study 1 and Study 2a) and pharmaceutical research (Study 2b). We investigated whether third-party anger in these contexts can be explained by the moral violation (Model 1), by the others' outcome (Model 2) or by a combination of both (Model 3). In addition, we investigated whether the emotional reaction is behaviourally relevant. Third-party anger, although labelled differently, has often been used as an explanation for altruistic punishment (e.g. Fehr & Gächter, 2002). This claim, however, has been challenged by the notion that moral outrage is a noble feeling that does not lead to punishment but rather to re-establishing justice (Batson et al., 2007) and the notion that anger has pro-social effects in that these feelings lead to cooperation (van Doorn et al., 2014). Thus, we tested whether anger predicts altruistic punishment and/or cooperation.

Study 1

In Study 1, we investigated third-party anger in the context of investing money. In this context, it is easy to distinguish outcomes (e.g. the amount of money lost) from moral violations (e.g. a dishonest advise). To test the three models of third-party anger, we investigated participants' appraisals, feelings and economic decisions. We considered not only feelings of anger but also feelings of compassion because compassion has been proposed as a precondition for empathic anger (Batson et al., 2007). To test the behavioural effects of third-party anger, we assessed altruistic punishment and cooperation in economic decisions.

Method

Procedure

Relying on previous research (e.g. Nelissen & Zeelenberg, 2009; Weiss et al., 1999), we aimed at collecting data from at least 20 persons per condition at the open day at Humboldt-University in Berlin. As many visitors of this event were interested in participating, we ended up collecting data from 138 members of the community (80 women) aged between 16 and 77 ($M_{\text{age}} = 38.5$, $SD = 15.8$), who participated in groups of up to 50. Participants were aware that they had the right to terminate participation at any time and that their responses were confidential. They were asked to read a newspaper article in which the level of moral violation (mild vs. severe) and the level of others' negative outcome (mild vs. severe) were varied between subjects. Participants indicated their feelings directly after the newspaper article. Then, they completed the economic decision tasks. Appraisals and individual differences were assessed at the end of the questionnaire. Subsequently, participants were debriefed. No other variables were varied or assessed. Two questionnaires were excluded from analysis because they contained more than 5% missing values.

Stimuli

In the newspaper article, the story of an elderly couple who invested money is told. The couple was advised by a bank assistant who strongly recommended an equity fund that after some time tremendously lost in value. The couple either lost a lot of money

(severe outcome) or waited until the fund recovered and got all their money back (mild outcome). In one version, the bank assistant knew about the high risk of this equity fund but received a premium payment for brokering this fund (severe moral violation). In the other version, the fund was not known to be unusually risky even by experts (mild moral violation). To increase authenticity, the article was formatted such that it appeared as if it was cut out from a newspaper and pasted into the questionnaire. In addition, the name of the bank was blackened and a notion was included that the names of the bank assistant and the couple were changed by the editors (see online Appendix A). These stimuli are the result of pretests in which we attempted to vary moral violation and others' outcome independently. These pretests revealed that the present manipulations are appraised as mild vs. severe outcome and as mild vs. severe moral violation whereas alternative manipulations like varying the amount of money lost did not affect outcome appraisals.

Feelings

Anger (*angry* "ärgerlich", *outraged* "empört", *raging* "wütend") ($\alpha = .86$) and compassion (*empathic* "mitfühlend", *compassionate* "mitleidend", *sad* "traurig") ($\alpha = .71$) were assessed by three items each. In addition, filler items were intermixed with the two scales (e.g. *satisfied* "zufrieden", *indifferent* "gleichgültig"). Participants indicated how they felt about the protagonists on a 5-point-scale (1 = *not at all*, 5 = *extremely*).

Economic decisions

After indicating their feelings, participants were asked to complete the economic decision tasks. In the first task, participants were asked to indicate how they would distribute money between themselves and the bank assistant (to assess altruistic punishment). Specifically, participants were asked to select one of five hypothetical distributions of money that varied in the level of altruistic punishment. As shown in Figure 3, the distribution with minimal punishment was 120 € for both, the bank assistant and the participant. The distribution with maximal punishment was 0 € for the bank assistant and 60 € for the participant. Thus, participants could prevent a good payoff of 120 € for the bank assistant by sacrificing 60 €. This constitutes the typical structure of altruistic

punishment decisions (Fehr & Gächter, 2002): one has to sacrifice own resources to punish the other. In the second task, participants indicated how they would distribute money between themselves and the couple (to assess cooperation). Participants were asked to select one of five hypothetical distributions that varied in the level of cooperation with the couple. As shown in Figure 3, the distribution of minimal cooperation was 0 € for the couple and 90 € for the participant. The distribution of maximal cooperation was 120 € for the couple and 30 € for the participant. Thus, participants could achieve a good payoff of 120 € for the couple by sacrificing 60 €. This constitutes the typical structure of cooperation decisions in social dilemmas (Kollock, 1998): The smaller the individual gain, the higher the joint gain. In a third task, participants indicated how they would distribute money between themselves and an unknown other (to assess general distribution tendencies). They were asked to select one of five hypothetical distributions that varied in degree of justice (minimal justice: 0 € other/ 120 € own; maximal justice 60 € other/ 60 € own). As the distribution of these choices did not vary between the newspaper conditions, $F(3, 124) = 0.74$, $p = .528$, $\eta_p^2 = .02$, and controlling for this task did not change the results for the other distribution tasks, we do not present results for this task in detail.

Appraisals

In contrast to feelings, which focused on a target person, appraisals focused on specific aspects of the situation such as fair behaviour or negative outcomes. Based on the Geneva Appraisal Questionnaire (GAQ, Scherer, 2001), moral appraisals ($\alpha = .77$) were assessed by compatibility with internal standards (*the bank assistant's behaviour was morally and ethically acceptable*), compatibility with norms (*the bank assistant's behaviour violated laws or social norms*) and motive (*the bank assistant's behaviour was due to a bad motive*). Please note that the type of moral violation was not target of the present research. Whether one of these moral violation aspects (e.g. motive/intention) plays a predominant role in the elicitation of anger cannot be answered from the present study. Appraisals of one's own and others' outcome were assessed by one item each (*the situation had negative effects for myself/others*). These outcome appraisals are modifications of the original appraisal of goal-conduciveness (i.e. *the event did or*

would bring about negative, undesirable outcomes for you, GAQ Version 3.0). In contrast to the GAQ appraisals, we considered the possibility that people appraise the outcome for persons different from themselves. Participants indicated how strongly they agree with these statements on a 5-point-scale (1 = *not at all*, 5 = *absolutely*).

Individual differences. Sensitivity to injustice and belief in a just world were assessed at the end of the questionnaire. As controlling for these measures did not change the present results significantly, we do not report these measures in detail.

Results and discussion

Appraisals

As a manipulation check, we conducted a 2 (moral violation) \times 2 (others' outcome) ANOVA on the appraisal ratings. Moral appraisals were affected by the manipulation of moral violation only, $F(1, 132) = 64.43$, $p < .001$, $\eta_p^2 = .33$. The manipulation of others' outcome, $F(1, 132) = 2.08$, $p = .152$, $\eta_p^2 = .02$, and the interaction of others' outcome by moral violation, $F(1, 132) = 2.54$, $p = .113$, $\eta_p^2 = .02$, were non-significant. The bank assistant's behaviour was appraised as more morally wrong when he knew about the risk of the equity fund ($M = 3.68$, $SD = 0.82$) than when experts did not know this ($M = 2.48$, $SD = 0.94$) irrespective of the couples' financial loss. Interestingly, most participants saw some moral violation in all conditions. It seems that even when the bank assistant was honest, one can argue that he should have been more careful with his advice.

Conversely, appraisals of others' outcome were affected by the manipulation of others' outcome only, $F(1, 132) = 165.40$, $p < .001$, $\eta_p^2 = .56$. The manipulation of moral violation, $F(1, 132) = 0.11$, $p = .749$, $\eta_p^2 < .01$, and the interaction of moral violation by others' outcome, $F(1, 132) = 0.32$, $p = .573$, $\eta_p^2 < .01$, were non-significant. The outcome for the elderly couple was appraised as more negative when they lost money ($M = 4.52$, $SD = 0.89$) than when they did not lose any money in the end ($M = 2.27$, $SD = 1.14$) irrespective of the bank assistant's intention. Although these outcome evaluations clearly differed between the outcome conditions, most participants saw at least some negative outcome in all reported situations. It seems that even when the couple did not lose any money in the end, one can argue that they were stressed by the turbulence of the fund.

Appraisals of own outcome were not affected by the manipulations, $F(3, 132) = 1.06, p = .371, \eta_p^2 = .02$. Ratings were low across all conditions ($M = 1.46, SD = 0.95$). Participants appraised the situation as having (almost) no negative consequences for themselves. Thus, the emotional reaction in the present study cannot be attributed to direct negative consequences for the participants themselves. In sum, the different versions of the investment article were appraised as intended.

Feelings

To test the three models of anger, we conducted a 2 (moral violation) \times 2 (others' outcome) ANOVA on ratings of compassion and anger. Compassion was affected by others' outcome only, $F(1, 132) = 11.10, p = .001, \eta_p^2 = .08$. The main effect of moral violation, $F(1, 132) = 0.47, p = .493, \eta_p^2 < .01$, and the interaction of moral violation by others' outcome, $F(1, 132) = 0.09, p = .771, \eta_p^2 < .01$, were non-significant. Participants reported more intense compassion when the couple lost money ($M = 2.88, SD = 0.92$) than when they did not lose any money ($M = 2.34, SD = 0.96$), irrespective of the bank assistant's intention (see Figure 1). Thus, the precondition for the model of empathic anger was given. Participants cared for the couple in that they responded with compassion to their harm.

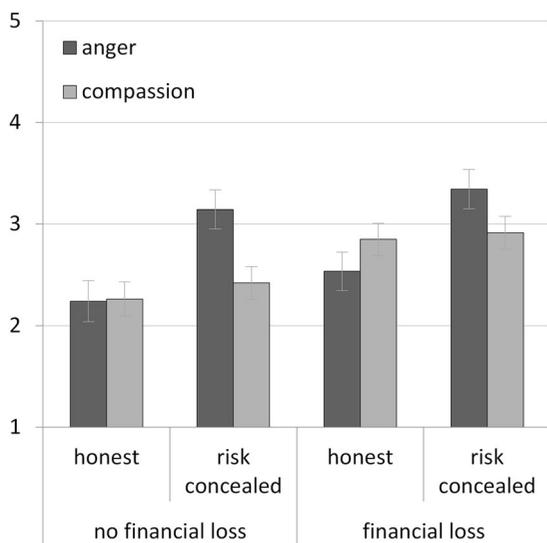


Figure 1. Anger and compassion dependent on others' outcome (i.e. financial loss) and moral violation (i.e. the bank assistant's honesty) (Study 1).

For anger, the reverse pattern emerged. Anger was affected only by the moral violation, $F(1, 132) = 19.88, p < .001, \eta_p^2 = .13$. The main effect of others' outcome, $F(1, 132) = 1.65, p = .201, \eta_p^2 = .01$, and the interaction of others' outcome by moral violation, $F(1, 132) = 0.06, p = .808, \eta_p^2 < .01$, were non-significant. Participants' anger was more intense when the bank assistant knew about the risk of the equity fund ($M = 3.24, SD = 1.17$) than when experts did not know about it ($M = 2.39, SD = 1.06$), irrespective of the couples' financial loss (see Figure 1). Thus, anger was best predicted by the moral outrage model. That is, participants' anger was affected by the moral violation presented in the newspaper article (i.e. whether the bank assistant advised the couple in a morally proper way). The situations' outcome (i.e. whether the couple lost money) although relevant for compassion was irrelevant for anger. Thus, the data suggest that third-party anger is not an automatic response to cared for others' negative outcome but it can be a response to the violation of what we think is a morally proper thing to do.

To investigate whether the effects on compassion and anger can be led back to the respective appraisals, we conducted simple mediation analysis using *Mplus* bootstrapping (Preacher & Hayes, 2008). The effect of others' outcome on compassion was mediated by outcome appraisals (*indirect effect* = .26, $p = .011$; *direct effect* = .02, $p = .910$) and the effect of moral violation on anger was mediated by moral appraisals (*indirect effect* = .21, $p = .001$; *direct effect* = .15, $p = .146$). As feelings were assessed before appraisals, we also conducted reverse mediation analyses with appraisals as dependents and feelings as mediators. The effect of others' outcome on outcome appraisals was only partially mediated by compassion (*indirect effect* = .05, $p = .042$; *direct effect* = .70, $p < .001$). Similarly, the effect of moral violation on moral appraisals was only partially mediated by anger (*indirect effect* = .10, $p = .003$; *direct effect* = .46, $p < .001$). In sum, the mediation through appraisals fitted the data much better than the reverse mediation. Although the present study does not allow causal inference about the relation of appraisals and feelings, the mediation analysis shows that participants experienced compassion to the extent they perceived a negative outcome for the couple and they were angry to the extent they evaluated the bank assistant's behaviour as morally wrong.

Economic decisions

To test whether economic decisions were affected by the manipulations, a 2 (moral violation) \times 2 (others' outcome) ANOVA on economic decisions was conducted. For altruistic punishment, a significant main effect of moral violation emerged, $F(1, 124) = 8.34$, $p = .005$, $\eta_p^2 = .06$. Others' outcome, $F(1, 124) = 2.44$, $p = .121$, $\eta_p^2 = .02$, and the interaction, $F(1, 124) = 0.43$, $p = .514$, $\eta_p^2 < .01$, were non-significant. As shown in Figure 3(a), participants decided to punish the bank assistant more strongly when the moral violation was severe. Especially maximal punishment (60 € for the self / 0 € for the bank assistant) was chosen more often when the bank assistant was dishonest. In other words, when the bank assistant violated a moral norm, participants were more willing to sacrifice own resources in order to prevent a good outcome for the bank assistant. For cooperation, a smaller effect of moral violation emerged significantly, $F(1, 124) = 5.36$, $p = .022$, $\eta_p^2 = .04$. Others' outcome, $F(1, 124) = 1.69$, $p = .196$, $\eta_p^2 = .01$, and the interaction, $F(1, 124) = 0.06$, $p = .809$, $\eta_p^2 < .01$, were non-significant. As shown in Figure 3(b), participants cooperated slightly more when the moral violation was severe. In other words, when the bank assistant violated a moral norm, participants were more willing to sacrifice own resources in order to reach a good outcome for the couple.

To investigate whether these effects can be led back to participants' feelings, we conducted simple mediation analysis using *Mplus* bootstrapping (Preacher & Hayes, 2008). As anger (but not compassion) was affected by the manipulated moral violation, anger was specified as mediator. However, the effect of moral violation on punishment was not mediated by anger (*indirect effect* = .03, $p = .474$; *direct effect* = .22, $p = .021$) nor was the effect of moral violation on cooperation (*indirect effect* = .02, $p = .625$; *direct effect* = .16, $p = .085$). In other words, the bank assistant's honesty affected participants' punishment (and cooperation) decisions but this was not due to their emotional reaction. It seems that anger does not necessarily affect economic decisions. Rather, anger, punishment (and to a smaller degree cooperation) represented different aspects of the reaction towards immorality.

In sum, Study 1 supported the moral outrage model in the context of investing money. Whether the bank assistant acted in a morally proper way was the decisive factor for anger and punishment

decisions. The couple's financial loss although relevant for compassion was irrelevant for participants' anger.

Study 2

To investigate whether the moral outrage model, which was supported by Study 1, is applicable to other contexts, we added a second context, pharmaceutical research, in Study 2. In Study 1, compassion was assessed as a precondition for empathic anger like suggested by Batson et al. (2007). However, one might argue that closeness to the victim might be a more appropriate precondition for this type of anger. To account for that, we assessed perceived closeness in Study 2.

Method

As in Study 1, we aimed at collecting data from at least 20 persons per condition. A total of 89 psychology students (74 women) aged between 17 and 50 ($M_{\text{age}} = 24.3$, $SD = 7.1$) participated in exchange for credit points. Participants were tested individually. They were aware that they had the right to terminate participation at any time and that their responses were confidential. Each participant read two newspaper articles, which corresponded to a context factor (investment vs. pharma) that varied within subjects. In these articles, the level of moral violation (mild vs. severe) and the level of others' negative outcome (mild vs. severe) were varied between subjects. After each article, participants first indicated their feelings, then made economic decisions and subsequently rated appraisals about the article. No other variables were varied or assessed. After they finished both articles, participants were debriefed. Four participants were excluded from analysis because they doubted the authenticity of the articles.

Stimuli

The newspaper articles focused on the domains of financial investment (investment context) and pharmaceutical research (pharma context). The investment article was identical with the article used in Study 1. The pharma article reported a story about pharmaceutical researchers, who tested a drug and reported the tests as successful. Later, however, it was found out that contradictory to the

tests the drug was non-effective. As the consequences of such a non-effective drug depends on its original purpose, others' outcome was varied by the drug type. In one version, these researchers tested an antihypertensive drug developed to lower blood pressure (severe outcome). In the other version, they tested an anti-wrinkle medication (mild outcome). Moral violation was manipulated by the researchers' intention. In one version of the article, the researchers manipulated results (severe moral violation). In the other version, they made an unintentional mistake (mild moral violation). Pretests revealed that these manipulations were appraised as intended, whereas other manipulations like whether the drug was already on market did not affect outcome appraisals. The pharma article was formatted similar to the investment article. The name of the pharmaceutical company was blackened and a notion was included that the name of the researcher was changed by the editors.

Feelings, economic decisions and appraisals

Anger ($\alpha = .88$ and $.93$), compassion ($\alpha = .79$ and $.83$), altruistic punishment, cooperation and moral appraisals ($\alpha = .86$ and $.84$) were assessed as in Study 1. Changes were made in the assessment of perceived outcomes. To increase reliability, appraisals of others' outcome were assessed by two items (*the situation had negative effects for the couple/patients, the situation had severe effects for the couple/patients*) ($\alpha = .91$ and $.91$).

Perceived closeness

We used a 5-point version of the Inclusion of Other in the Self (IOS) Scale (Aron, Aron, & Smollan, 1992) to assess perceived closeness. The IOS diagrams showed one circle representing the participant and one circle representing the couple (in the investment context) or the patients (in the pharma context).

Results and discussion

As in Study 1, we conducted 2 (moral violation) \times 2 (others' outcome) ANOVAs on appraisals, feelings and economic decisions and we investigated whether the effects on feelings and decisions were mediated by appraisals and feelings.

Investment context

Appraisals and perceived closeness

Moral appraisals were affected by the manipulation of moral violation only, $F(1, 81) = 62.54, p < .001, \eta_p^2 = .33$. The manipulation of others' outcome, $F(1, 81) = 0.04, p = .849, \eta_p^2 < .01$, and the interaction of others' outcome by moral violation, $F(1, 81) = 0.51, p = .479, \eta_p^2 = .01$, were non-significant. The bank assistant's behaviour was appraised as more morally wrong when he knew about the risk of the equity fund ($M = 4.50, SD = 0.86$) than when experts had not known this ($M = 2.97, SD = 0.89$), irrespective of the couples' financial loss. Conversely, appraisals of others' outcome were affected by the manipulation of the outcome only, $F(1, 81) = 110.52, p < .001, \eta_p^2 = .58$. The manipulation of moral violation, $F(1, 81) < 0.01, p = .949, \eta_p^2 < .01$, and the interaction of moral violation by others' outcome, $F(1, 81) = 0.49, p = .485, \eta_p^2 = .01$, were non-significant. The outcome for the elderly couple was appraised as more negative when they lost money ($M = 4.37, SD = 0.72$) than when they did not lose any money in the end ($M = 2.31, SD = 1.05$), irrespective of the bank assistant's intention. The perceived closeness to the couple was not affected by the manipulations, $F(3, 81) = 0.09, p = .965, \eta_p^2 < .01$. Participants rated the closeness to the couple equally across conditions ($M = 2.90, SD = 1.55$). As in Study 1, the newspaper articles were appraised as intended.

Feelings

Compassion was affected by others' outcome only, $F(1, 81) = 5.40, p = .020, \eta_p^2 = .07$. The main effect of moral violation, $F(1, 81) = 0.07, p = .792, \eta_p^2 < .01$, and the interaction of moral violation by outcome, $F(1, 81) = 0.33, p = .566, \eta_p^2 < .01$, were non-significant. Participants reported more intense compassion when the couple lost money ($M = 3.07, SD = 1.04$) than when they did not lose money ($M = 2.55, SD = 0.89$), irrespective of the bank assistant's intention. Conversely, anger was significantly affected by moral violation, $F(1, 81) = 10.99, p = .001, \eta_p^2 = .12$. The main effect of others' outcome, $F(1, 81) = 3.32, p = .072, \eta_p^2 = .04$, and the interaction of outcome by moral violation, $F(1, 81) = 0.23, p = .636, \eta_p^2 < .01$, were non-significant. Participants' anger was more intense when the bank assistant knew about the risk of the equity fund ($M = 3.20, SD = 1.15$) than when experts had not known about it ($M = 2.39, SD = 1.02$). The difference

between articles in which the couple lost money ($M = 3.04$, $SD = 1.16$) and those in which they did not lose any money ($M = 2.57$, $SD = 1.11$) was non-significant. When controlling for perceived closeness this pattern of results remained (see online Appendix C).

The effect of moral violation on anger was mediated by moral appraisals (*indirect effect* = .38, $p < .001$; *direct effect* = -.03, $p = .846$) and the effect of others' outcome on compassion was mediated by outcome appraisals (*indirect effect* = .41, $p = .005$; *direct effect* = -.15, $p = .394$). As in Study 1, the reverse mediation effects were much weaker. The effect of others' outcome on outcome appraisals was only partially mediated by compassion (*indirect effect* = .06, $p = .038$; *direct effect* = .69, $p < .001$). Similarly, the effect of moral violation on moral appraisals was only partially mediated by anger (*indirect effect* = .13, $p = .004$; *direct effect* = .54, $p < .001$). As in Study 1, participants experienced compassion to the extent they appraised the couple's outcome as negative and they experienced anger to the extent they appraised the bank assistant's behaviour as morally wrong.

Economic decisions

In contrast to Study 1, altruistic punishment, $F(3, 81) = 1.08$, $p = .364$, $\eta_p^2 = .04$, and cooperation, $F(3, 81) = 1.03$, $p = .383$, $\eta_p^2 = .04$, were not significantly affected by the manipulations. Participants tended to punish slightly more when the bank assistant knew about the risk of the fund ($M = 2.58$, $SD = 1.63$) than when experts had not known about it ($M = 2.05$, $SD = 1.43$) and they tended to cooperate slightly more when the couple lost money ($M = 3.36$, $SD = 0.88$) than when they did not lose any money ($M = 3.03$, $SD = 0.83$). However, these differences were non-significant.

In sum, anger in the investment context was affected by the moral violation only. Although others' outcome was appraised as severely negative and although it elicited compassion it did not affect anger. This replicates findings of Study 1. However, in contrast to Study 1, economic decisions were not affected by the manipulations.

Pharma context

Appraisals and perceived closeness

Moral appraisals were affected by the manipulation of moral violation only, $F(1, 81) = 102.68$, $p < .001$,

$\eta_p^2 = .56$. The manipulation of others' outcome, $F(1, 81) = 0.22$, $p = .638$, $\eta_p^2 < .01$, and the interaction of others' outcome by moral violation, $F(1, 81) = 0.08$, $p = .773$, $\eta_p^2 < .01$, were non-significant. Participants appraised the researchers' behaviour as more morally wrong when they intentionally manipulated results ($M = 4.64$, $SD = 0.84$) than when they made an unintentional mistake ($M = 2.76$, $SD = 0.84$). Conversely, appraisals of others' outcome were affected by the manipulation of others' outcome only, $F(1, 81) = 119.15$, $p < .001$, $\eta_p^2 = .60$. The manipulation of moral violation, $F(1, 81) = 0.37$, $p = .536$, $\eta_p^2 = .01$, and the interaction of moral violation by others' outcome, $F(1, 81) = 1.05$, $p = .310$, $\eta_p^2 = .01$, were non-significant. Participants rated the event as more negative for the patients when the research was about an antihypertensive drug ($M = 4.47$, $SD = 0.51$) compared to an anti-wrinkle medication ($M = 2.21$, $SD = 1.14$).

Contrary to the investment context, the outcome manipulation in the pharma context affected perceived closeness, $F(1, 81) = 5.10$, $p = .027$, $\eta_p^2 = .06$, such that participants perceived more closeness to hypertensive patients ($M = 3.86$, $SD = 1.99$) than to cosmetic patients ($M = 2.94$, $SD = 1.80$). The main effect of moral violation, $F(1, 81) = 1.03$, $p = .313$, $\eta_p^2 = .01$, and the interaction of others' outcome by moral violation, $F(1, 81) = 1.73$, $p = .192$, $\eta_p^2 = .02$, were non-significant. In sum, the type of drug did not only affect outcome appraisals but also the perceived closeness to the patients. Otherwise, the pharma articles were appraised as expected.

Feelings

Compassion was affected by others' outcome only, $F(1, 81) = 27.47$, $p < .001$, $\eta_p^2 = .25$. The main effect of moral violation, $F(1, 81) = 2.69$, $p = .105$, $\eta_p^2 = .03$, and the interaction of moral violation by others' outcome, $F(1, 81) = 0.33$, $p = .566$, $\eta_p^2 < .01$, were non-significant. Participants reported more intense compassion for hypertensive patients ($M = 3.61$, $SD = 0.88$) than for cosmetic patients ($M = 2.45$, $SD = 1.10$) irrespective of the researchers' intention (see Figure 2). This suggests that the manipulation of others' outcome was emotionally relevant and that the precondition for empathic anger was given.

Anger, however, was predicted by both moral violation and others' outcome. Specifically, a strong main effect of moral violation on anger emerged, $F(1, 81) = 27.43$, $p < .001$, $\eta_p^2 = .25$, as well as a weaker effect of others' outcome, $F(1, 81) = 5.68$, $p = .020$, $\eta_p^2 = .07$.

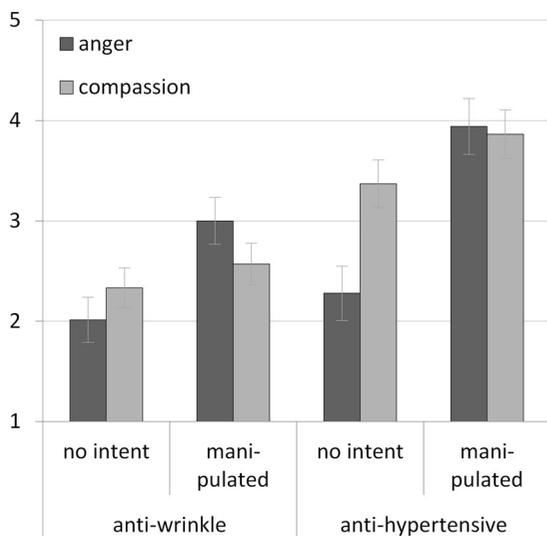


Figure 2. Anger and compassion dependent on others' outcome (i.e. medication type) and moral violation (i.e. the researcher's intention) (Study 2).

The interaction of moral outrage by others' outcome was non-significant $F(1, 81) = 1.79, p = .185, \eta_p^2 = .02$. As shown in Figure 2, participants experienced more intense anger when the researchers manipulated results ($M = 3.39, SD = 1.29$) than when they made an unintentional mistake ($M = 2.12, SD = 1.07$). Also, more anger was reported when the research concerned an antihypertensive drug ($M = 3.09, SD = 1.30$) rather than a wrinkle medication ($M = 2.49, SD = 1.32$). However, controlling for perceived closeness changed the pattern of results such that the effect of others' outcome on anger became non-significant, $F(1, 80) = 2.38, p = .127, \eta_p^2 = .03$, whereas the strong effect of moral violation, $F(1, 80) = 27.22, p < .001, \eta_p^2 = .25$, and the non-significant interaction of moral violation by others' outcome, $F(1, 80) = 0.74, p = .392, \eta_p^2 = .01$, remained. This finding suggests, that the article about hypertensive drugs elicited more intense anger because participants felt closer to hypertensive patients than to cosmetic patients.

The effect of others' outcome on compassion was mediated by outcome appraisals (*indirect effect* = .46, $p < .001$; *direct effect* = .04, $p = .805$) and the effect of moral violation on anger was mediated by moral appraisals (*indirect effect* = .38, $p = .001$; *direct effect* = .10, $p = .501$). This replicates the findings from the investment context. In addition, the effect of others' outcome on anger was mediated by outcome

appraisals (*indirect effect* = .45, $p = .001$; *direct effect* = -.23, $p = .157$). As for the investment context, we conducted reverse mediation analysis. The effect of others' outcome on outcome appraisals was only partially mediated by compassion (*indirect effect* = .16, $p = .001$; *direct effect* = .61, $p < .001$). Similarly, the effect of moral violation on moral appraisals was only partially mediated by anger (*indirect effect* = .13, $p = .008$; *direct effect* = .62, $p < .001$). As in the investment context, the mediation through appraisals fitted the data better than the reverse mediation.

In sum, anger can be predicted by moral appraisals but outcome appraisals can also play a role. In other words, there seem to exist at least two paths to anger, one through moral appraisals and one through outcome appraisals.

Economic decisions

Altruistic punishment was affected by moral violation only, $F(1, 81) = 16.14, p < .001, \eta_p^2 = .17$. Others' outcome, $F(1, 81) = 3.07, p = .084, \eta_p^2 = .04$, and the interaction between both, $F(1, 81) = 2.18, p = .144, \eta_p^2 = .03$, were non-significant. Conversely, cooperation was affected by others' outcome only, $F(1, 81) = 7.76, p = .007, \eta_p^2 = .09$. Moral violation, $F(1, 81) = 0.22, p = .640, \eta_p^2 < .01$, and the interaction between both, $F(1, 81) = 0.87, p = .353, \eta_p^2 = .01$, were non-significant. As shown in Figure 3, participants decided to punish more when the researcher manipulated results and they cooperated more with hypertensive patients than with cosmetic patients.

The effect of moral violation on punishment was mediated by anger (*indirect effect* = .26, $p < .001$; *direct effect* = .12, $p = .237$) and the effect of others' outcome on cooperation was mediated by compassion (*indirect effect* = .16, $p = .014$; *direct effect* = .13, $p = .260$). That is, participants punished to the extent they experienced anger and they cooperated to the extent they experienced compassion. In contrast to the investment context, feelings in the pharma context explained why participants' economic decisions differed between the newspaper versions. It seems that the economic decisions in the pharma context were overall more emotional.

Taken together, anger in the pharma context was neither pure moral outrage nor pure empathic anger but rather a combination of both. That is, both the moral violation and others' negative outcome affected anger. Hence, the model of moral outrage applies to this context but it also has limits in that empathic

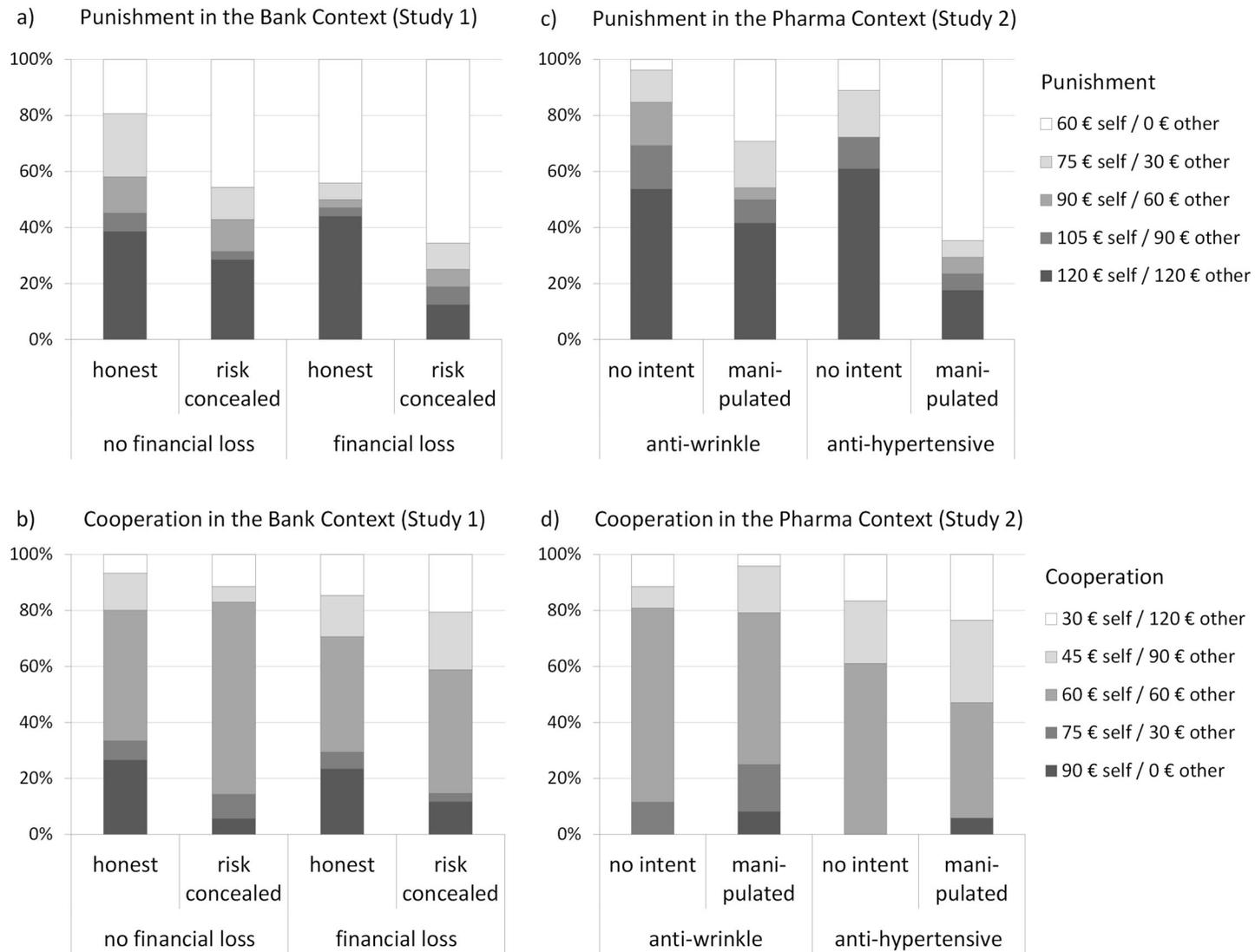


Figure 3. Punishment and cooperation dependent on others' outcome (i.e. financial loss in the investment context or medication type in the pharma context) and moral violation (i.e. the bank assistant's honesty in the investment context or the researcher's intention in the pharma context).

anger also contributed to the participants' reaction. That empathic anger played a role in the pharma context could be led back to differences in perceived closeness to hypertensive and cosmetic patients.

Power and effect size considerations

To control whether the present research's power was sufficient to test the three anger models, we looked at previous research on third-party anger. Previous intention effects on anger ranged between $d = 0.65$ and 1.31 (Nelissen & Zeelenberg, 2009; Russell & Giner-Sorolla, 2011) and previous outcome effects on anger ranged between $d = 0.75$ and 1.15 (Batson et al., 2007, 2009). Following this, a sample size of 80 persons is adequate for testing the main effects of the present studies with power $(1-\beta)$ of at least .80. To estimate effect sizes for the interaction between moral violation and others' outcome is more difficult. Such interaction effects on anger were previously tested by planned contrasts (Krehbiel & Cropanzano, 2000; Weiss et al., 1999) which makes them difficult to compare to the present research. However, if the interaction model provides a real alternative to moral outrage and empathic anger, it should explain as much variance as the other models. Thus, effect sizes should be similar. In Study 1, the sample size of $N = 136$ was sufficient to test an interaction effect of $d = 0.60$ with power of $(1-\beta) = .80$. In Study 2, however, the analysis within each context did not provide enough power to test such an interaction effect. Thus, we investigated the interaction effect across contexts in a 2 (context) \times 2 (moral violation) \times 2 (others' outcome) mixed model ANOVA. For anger, the interaction between moral violation and others' outcome was non-significant, $F(1, 162) = 1.70$, $p = .195$, $\eta_p^2 = .01$, and explained less variance than the main effects of moral violation, $F(1, 162) = 37.12$, $p < .001$, $\eta_p^2 = .19$, and others' outcome, $F(1, 162) = 8.92$, $p < .001$, $\eta_p^2 = .05$. Computing Cohen's d from the proportion of explained variance (η_p^2) results in a large effect of moral violation, $d = 0.96$, a medium effect of others' outcome, $d = 0.47$, and a small interaction effect, $d = 0.20$. Thus, the effect of moral violation was comparable to previous studies (Nelissen & Zeelenberg, 2009; Russell & Giner-Sorolla, 2011) but the effect of others' outcome was smaller (Batson et al., 2007, 2009) while the interaction effect could not compete with either of these main effects. Thus, the present research supports the model of moral

outrage but suggests modifications for the other two anger models.

General discussion

The present research sheds light on the question why people respond with anger when others are treated unfairly. We found that moral violation was highly relevant for anger. Specifically, only newspaper articles that described a clear moral violation, elicited a considerable degree of anger and this elicitation was mediated by appraisals of moral violation. In contrast, the hindrance of the victims' goals played only a minor role. Specifically, the severity of negative consequences was highly relevant for compassion but not significantly relevant for anger (in the investment context) or less relevant for anger than for compassion (in the pharma context). These effects of others' goal hindrance on compassion (and anger) were mediated by appraisals of others' outcome.

Causes for the different results in the investment context (i.e. pure moral outrage) compared to the pharma context (i.e. a combination of moral outrage and empathic anger) can be two-fold. It is possible that people reacted differently because of the type of resource. Tetlock, Kristel, Elson, Green, and Lerner (2000) distinguish between *sacred* and *non-sacred* resources. Whereas people are outraged when others trade sacred resources (e.g. selling organs) they accept trading non-sacred resources (e.g. selling clothes). Negative consequences for a sacred resource like health might increase anger whereas negative consequences for a non-sacred resource like money might not. However, it is also possible that type of outcome manipulation was the decisive factor. Although participants appraised the outcome manipulations in both contexts as such, the cause of this negative outcome differed between contexts. In the investment context outcome was varied by financial loss, whereas in the pharma context outcome was varied by drug type. These manipulations implied that the target persons were constant in the investment context (i.e. the couple) but varied in the pharma context (i.e. hypertensive vs. cosmetic patients). Thus, identification with the victims of the situation (like suggested by Gordijn et al., 2006) could have played an additional role in the pharma context. In line with this, participants reported more closeness to hypertensive than to cosmetic patients, whereas in the investment context closeness did not differ between conditions. Moreover, the effect of

others' outcome on anger became non-significant when controlling for perceived closeness. This supports the notion that with more identification anger increased. In other words, for anger it might not matter how much a victim suffers but rather whether we identify with them. However, the specific role of identification with the victims, their suffering and the sacredness of resources cannot be untangled from the present study. Disentangling these factors could be an interesting task for future research.

The present research contributes to our understanding of moral outrage. Previous research had already shown a close relation between evaluations of justice and feelings of anger (e.g. Cronin et al., 2012; Kals & Russell, 2001; Nelissen & Zeelenberg, 2009). It is, however, new that this relation can be independent from others' suffering and compassion. The present research shows that there are situations in which a moral violation elicits anger and in which others' suffering and compassion are not an alternative explanation for this reaction. Thus, pure moral outrage can explain instances of third-party anger. However, in the context of pharmaceutical research the model of moral outrage showed its limits. This is, moral violation had a strong effect on anger but others' outcome affected anger as well – at least under conditions of perceived closeness. Thus, anger can be solely based on value evaluations but this value-based anger (i.e. moral outrage) cannot explain all episodes of third-party anger.

The model of empathic anger, by contrast, could not explain the present results well. According to the model of empathic anger, third-party anger is elicited by the mere obstruction of goals for people we empathise with. In line with this, previous research has shown that compassion with the victim of an injustice can increase anger (Batson et al., 2007). The present research, however, shows that this is not necessarily the case. In the present studies, the goal-obstruction experienced by others with whom the participants empathised with was not sufficient to affect anger. In the investment context of Study 1 and Study 2, all factors that are necessary for empathic anger were present: (a) Participants perceived the financial loss as a negative outcome for the couple in that they appraised it respectively; (b) This appraisal of others' outcome was emotionally relevant in that it predicted compassion; (c) Participants seemed to care about the couple in that their financial loss elicited compassion. Yet, the others' outcome did not affect anger. Thus, anger is not an automatic response to

the negative outcome of people we empathise with. Rather, it seems that other factors are needed in addition to make people angry. Such factor could be a sacred resource or closeness to the victims as suggested by the findings from Study 2. As the report-based method employed in the present research implies distance between the participants and the couple/patients, the model of empathic anger might profit from alternative methods that create more closeness between the participants and the target persons. Specifically, when the couple who invested money or the patients who suffered from the ineffective drug would have been close friends or family members, the model of empathic anger might have received more support. Therefore, we do not reject the model of empathic anger altogether but we suggest to focus on the precondition of closeness or sacred resources rather than compassion.

Interestingly, we did not find any interaction of others' outcome and moral violation as predicted by model 3. Specifically, a severe negative outcome was not necessary for third-party anger. At first sight, this finding conflicts with previous research suggesting an interaction of outcome and moral violation (Krehbiel & Cropanzano, 2000; Weiss et al., 1999): In these studies, participants got angry when they lost a quiz as a result of the rival team's cheating but less so when their own team was cheating or when they won the quiz. However, in this paradigm, the *own* outcome and the *valence* of outcomes was varied. Varying own outcomes (i.e. losing or winning a quiz oneself) might have a stronger effect on anger than varying others' outcomes (like in the present study). Also, the valence of the outcome (winning vs. losing) might play a different role than the degree of negative outcome (mild vs. severe) used in the present study. This might be crucial for the emotional reaction. Imagine, for instance, the bank assistant would have tried to cheat on the couple but despite that the couple would have gained money and the bank assistant would have lost money. Instead of being angry, people would probably react with some kind of satisfaction because justice prevailed, a phenomenon studied in research on malicious pleasure (e.g. van Dijk, Ouwerkerk, Goslinga, Nieweg, & Gallucci, 2006; Hareli & Weiner, 2002; Leach, Spears, Branscombe, & Doosje, 2003). It is possible that the *degree* of negative outcome does not interact with moral violation whereas the *valence* of the outcome does. Thus, rather than conflicting with previous research, the present study extends the already existing insight on

the interaction of *own outcome valence* and moral violation to the interplay of *others' outcome severity* and moral violation. Therefore, we do not reject the interaction model altogether. However, we suggest outcome valence to have more potential to interact with moral violation than outcome severity.

Taken together, the present results contribute to the discussion of single necessity of appraisals. Van Mechelen and Hennes (2009) found that appraisals of moral violations are not necessary for anger: People can get angry by frustration alone even when no others are involved and when no bad intention is perceived. The present research extends this finding. People can also get angry by a moral violation alone – independent of outcome appraisals. This is compatible with the claim that the single appraisals of a proposed appraisal pattern are not necessary for the specific emotion (Kuppens et al., 2003). Instead, there seem to be different paths to anger, e.g. through personal frustration or through moral violation.

The manipulations in the present study were not only relevant for feelings but also for economic decisions. Moral violation affected punishment (in the investment context of Study 1 and in the pharma context of Study 2) and others' outcome affected compassion (in the pharma context). These results, however, are limited in two ways. First, anger mediated the effect of moral violation on punishment in the pharma context but not in the investment context. It seems that there are situations (like the pharma context) in which anger and the tendency to punish are synchronised, a process discussed by Scherer (2005), but in other situations (like in the investment context) anger and the tendency to punish were desynchronised. Second, as economic decisions were self-reported it remains open whether the same results would emerge for decisions with real incentives. Apart from that, the present findings are in line with previous research linking anger with punishment (e.g. Fehr & Gächter, 2002; Nelissen & Zeelenberg, 2009) and compassion with cooperation (e.g. Batson & Moran, 1999). The present research expands this findings by showing that pure moral outrage, anger elicited by a moral violation independent of the others' outcome, can be related to punishment. Alternative approaches like the notion that moral outrage is a noble feeling that does not lead to punishment but rather to re-establishing justice (Batson et al., 2007) or the notion that anger has pro-social effects in that these feelings lead to cooperation (van Doorn et al., 2014) were not supported.

In sum, anger can be elicited by a perceived violation of moral values alone. A direct and severe negative consequence for the own person or for others is not necessary for this reaction. Thus, there seem to be different paths to anger and one of these paths is solely based on moral violation appraisals.

Acknowledgements

We wish to thank Isabell Hühnel and Stefanie Schmidt for comments on an earlier draft of the paper. We also thank the two anonymous reviewers and the editor for their helpful comments.

Disclosure Statement

No potential conflict of interest was reported by the authors.

Funding

This research was supported by a grant from the Heinrich-Böll-Stiftung to the first author.

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