Emotion

Intergroup Emotional Exchange: Ingroup Guilt and Outgroup Anger Increase Reparatory Behavior in Trust Games

--Manuscript Draft--

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Corresponding Author:	Job van der Schalk Cardiff University, School of Psychology UNITED KINGDOM
Corresponding Author E-Mail:	VanderSchalkJ@cardiff.ac.uk
Corresponding Author Secondary Information:	
Corresponding Author's Institution:	Cardiff University, School of Psychology
Other Authors:	Danielle Shore
	Magdalena Rychlowska
	Brian Parkinson
	Antony Manstead
Corresponding Author's Secondary Institution:	
First Author:	Danielle Shore
Order of Authors Secondary Information:	
Manuscript Region of Origin:	UNITED KINGDOM
Suggested Reviewers:	Gert-Jan Lelieveld Universiteit Leiden lelieveldgj@fsw.leidenuniv.nl Expertise in the role of emotions in intergroup relations
	Tim Wildschut University of Southampton R.T.Wildschut@soton.ac.uk

	Expertise in intergroup social dilemmas
	Eran Halperin IDC Herzliya eran.halperin@idc.ac.il Expertise in the role of emotions in intergroup relations
	Angela Maitner American University of Sharjah (AUS) amaitner@aus.edu Expertise in the role of emotions in intergroup relations
	Nicole Harth Friedrich-Schiller-Universität Jena nicole.harth@fh-jena.de Expertise in the role of emotions in intergroup relations
Opposed Reviewers:	
Order of Authors:	Danielle Shore
	Magdalena Rychlowska
	Job van der Schalk
	Brian Parkinson
	Antony Manstead

School of Psychology
Head of School Professor Petroc Sumner BA MA PhD

Ysgol Seicoleg
Pennaeth yr Ysgol Yr Athro Petroc Sumner BA MA PhD

Cardiff University
Tower Building
70 Park Place
Cardiff CF10 3AT
Wales UK
Tel Ffôn: +44 (0)29 2087 4007
psych.cf.ac.uk

Prifysgol Caerdydd
Adeilad y Twr
70 Plas y Parc
Caerdydd CF10 3AT
Cymru, Y Deyrnas Unedig

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Paula Pietromonaco
Department of Psychological and Brain Sciences
135 Hicks Way, Tobin Hall
University of Massachusetts, Amherst
Amherst, MA 01003

Dear Professor Pietromonaco,

Re: Submission of manuscript "Intergroup emotional exchange"

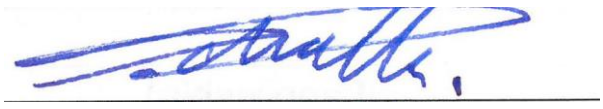
Please find enclosed our manuscript "Intergroup emotional exchange: Ingroup guilt and outgroup anger increase reparatory behavior in trust games", which we would like to submit to *Emotion*. The authors are: Danielle Shore (danielle.shore@psy.ox.ac.uk), Magdalena Rychlowska (rychlowska@cardiff.ac.uk), Job van der Schalk (VanderSchalkJ@cardiff.ac.uk), Brian Parkinson (brian.parkinson@psy.ox.ac.uk), and Antony Manstead (ManSteadA@cardiff.ac.uk).

The paper reports two studies exploring how ingroup and outgroup emotions affect intergroup reparatory behavior following behavioral transgressions. We also included Supplemental Materials displaying correlations between measures.

All of the authors listed have agreed to the byline order and to submission of the manuscript in this form. We have assumed responsibility for keeping all coauthors informed of our progress, of the content of the reviews, and of any revisions made.

Thank you for considering our manuscript for publication. We appreciate your time and look forward to your response.

Sincerely,



Job van der Schalk

Intergroup Emotional Exchange: Ingroup Guilt and Outgroup Anger Increase Reparatory Behavior in Trust Games

Danielle M. Shore*

University of Oxford

Magdalena Rychlowska* Job van der Schalk

Cardiff University

Brian Parkinson

University of Oxford

Antony S. R. Manstead

Cardiff University

* Joint first authors.

Corresponding author: Job van der Schalk, VanderSchalkJ@cardiff.ac.uk

Abstract

Intergroup exchanges are an integral part of social life but are compromised when one group pursues its interests at another group's expense. The present research investigates whether expressing emotion can mitigate the negative consequences of such actions. We examine how emotions communicated by either an ingroup or outgroup member following an ingroup member's breach of trust affect other ingroup members' feelings of guilt and pride, and subsequent reparatory behavior. Groups of participants played a two-round trust game with another group. In round one, they observed a member of their own group failing to reciprocate a trusting move by the outgroup. This was followed by anger vs. disappointment communicated by an *outgroup* member (Study 1) or happiness vs. guilt communicated by an *ingroup* member (Study 2). Comparisons with no-emotion control conditions revealed that expressions of outgroup anger and ingroup guilt increased participants' reparatory behavior (allocations to an outgroup member in round two). The effect of an outgroup member's anger expression was mediated by participants' diminished feelings of pride about the ingroup action, whereas the effect of an ingroup member's guilt expression was mediated by participants' own feelings of guilt. Taken together, these findings support a social appraisal approach and highlight the roles that pride and guilt can play in shaping intergroup reparatory behavior.

Keywords: *intergroup, guilt, pride, reparation, emotion, appraisal*

Intergroup Emotional Exchange: Ingroup Guilt and Outgroup Anger Increase Reparatory Behavior in Trust Games

People are connected to others through a multitude of relationships which often involve exchanges of money, services, or other valuable resources. These transactions can take place between individuals, but also between groups – including companies, institutions, and countries. Justice, fairness, and trust play an essential role in such exchanges. In the 18th century, Adam Smith was one of the first economists to highlight their importance in his influential *Theory of Moral Sentiments* (1790/2005). A large body of contemporary research corroborates this classic account. Fairness and trust – defined as the willingness to make oneself vulnerable based on the belief that others can be relied upon – are critical factors in economic exchanges (Güth, Ockenfels, & Wendel, 1993; Rabin, 1993; Rotter, 1967), and are associated with personal and societal well-being (DeNeve & Cooper, 1998; Fukuyama, 1996). The current research focuses on intergroup trust, which is harder to establish and easier to damage than trust between individuals (Ferrin, Bligh, & Kohles, 2007; Insko & Schopler, 1987; Polzer, 1996). Specifically, we study the consequences of one group failing to reciprocate another group's trust and examine whether subsequent intergroup exchanges are influenced by emotion communication.

Intergroup Trust and Reparation

Despite the positive outcomes of trust, and despite people's strong propensity for cooperation and fairness (e.g., Gintis, 2000; Hamlin, Wynn, Bloom, & Mahajan, 2011), humans are also motivated to pursue their own selfish interests or the interests of their group at the expense of other individuals and groups. People systematically underestimate the severity of social as well as physical pain experienced by others (e.g., Nordgren, Banas, & MacDonald, 2011), and the greater the social distance from these others, the more likely

people are to cheat, steal money, exploit others, or sell faulty goods (e.g., Hoffman, McCabe & Smith, 1996).

Such selfish transactions have a negative impact on subsequent exchanges (Fehr & Fischbacher, 2004). They are, however, especially damaging in intergroup settings, because such contexts tend to elicit stronger competitive tendencies than do relations between individuals (Folmer, Klapwijk, De Cremer, & Van Lange, 2012; Wildschut, Pinter, Vevea, Insko, & Schopler, 2003). People also expect competitive behavior in intergroup contexts, making it difficult to establish and restore trust (Insko et al., 1993). Accordingly, extant research documents the limited effectiveness of intergroup apologies (Hornsey & Wohl, 2013; Nadler & Liviatan, 2006). Even if only one person causes harm, members of the victim group can still hold other members of the transgressor's group responsible, because they perceive the perpetrating group as an entity rather than a collection of separate individuals (Insko et al., 1988). As a consequence, violations committed by one group member may lead to retaliatory behavior (a common response to unfairness, e.g., Bosman, & van Winden, 2002; Brebels, De Cremer, & Sedikides, 2008) directed towards other members of the group, thus escalating intergroup conflict.

An important question is whether and how cooperation between groups can be improved following such transgressions. The most straightforward method is to offer reparations for the harm done: Empirical evidence suggests that reparations help to reestablish cooperation after transgressions (Bottom, Gibson, Daniels, & Murnighan, 2002; De Cremer, 2010; Desmet, De Cremer, & Van Dijk, 2011). Individuals compensate for their own misdeeds in interpersonal settings (Berscheid & Walster, 1967; Regan, Williams, & Sparling, 1972), and may also do so if they feel responsible for transgressions committed by their group. Indeed, studies using intergroup contexts show that witnessing transgressions or defections committed by in-group members can motivate observers to compensate or make

amends, especially if they identify with their group (Arora, Logg, & Larrick, 2015) or are observed by outgroup members (Gino, Gu, & Zhong, 2009). These reparative behaviors – as well as most economic decisions in mixed-motive situations – are typically embedded in a broader context and are therefore accompanied by other social signals.

Reparatory Emotions and Their Influence

Arguably, expressions of emotions accompanying resource-allocation decisions are among the most important of these signals because they convey information about the extent to which a given behavior is consistent with the allocator's or receiver's goals (Manstead & Fischer, 2001; Ortony, Clore, & Collins, 1988). For example, observing a person express regret after making an unfair allocation in a computer game increases the likelihood of participants making a fair offer themselves (van der Schalk, Kuppens, Bruder, & Manstead, 2015). Similarly, people cooperate significantly more with individuals who express guilt or regret after unfair behavior in economic games (de Melo, Carnevale, Read, & Gratch, 2014). These studies belong to a larger body of evidence demonstrating that emotions communicated in the context of economic exchanges shape receivers' subsequent behaviors (e.g., DeSteno, Bartlett, Baumann, Williams, & Dickens, 2010; Moretti & di Pellegrino, 2010; Schwarz, 2000; van Kleef, de Dreu & Manstead, 2010; Zeelenberg, Nelissen, Breugelmans, & Pieters, 2008).

But how do communicated emotions affect economic decisions? According to social appraisal accounts, people's behaviors are guided not only by their own feelings and evaluations of a given situation but also by the ways in which other people react and appraise the same event (Manstead & Fischer, 2001). Indeed, research documents that emotions displayed by an interaction partner influence observers' event appraisals and emotions (e.g. de Melo et al., 2014; Parkinson & Simons, 2009). In mixed-motive situations people may even engage in reverse appraisals, inferring the motives and intentions of a social partner

from their facial expressions, and using these inferences to guide their own behavior (de Melo et al., 2014). Knowing how a social partner appraises a situation provides a strong foundation for predicting their likely actions (Schelling, 1960). However, emotions can also convey corresponding appraisals implicitly and affect perceivers' behavior without the need for sophisticated reasoning about their meaning (e.g. Parkinson, Phiri, & Simons, 2012; Parkinson, 2011; Sorce, Emde, Campos, & Klinnert, 1985).

Intergroup Emotions: The Role of Guilt and Pride

Extending the social appraisal approach to group processes implies that emotions expressed in an intergroup interaction can shape group members' appraisals as well as their emotional reactions and subsequent behavior (Parkinson & Manstead, 2015). Consistent with this claim, studies examining intergroup relations, like the research in interpersonal contexts, indicate a central role for emotion (e.g., Harth, Kessler, & Leach, 2008; Harth, Leach, & Kessler, 2013; Lelieveld, Van Dijk, Van Beest, & Van Kleef, 2013; Maitner, Mackie, & Smith, 2007). For example, Lelieveld and colleagues (2013) examined how disappointment communicated by the recipient in a bargaining game affects the allocator's emotions and behavior. When an ingroup recipient expressed disappointment, allocators felt more guilt and consequently sent more resources. However, when an outgroup recipient expressed disappointment, allocators felt less guilt and made lower offers. Similarly, a recent study (Solak, Tagar, Cohen-Chen, Saguy, & Halperin, 2016) showed that outgroup disappointment increased participants' willingness to engage in collective action protecting that outgroup. However, this effect was only observed when participants perceived the situation as illegitimate. Such findings demonstrate that emotions are embedded in broader relational contexts and that their consequences cannot be fully understood without reference to the surrounding situation (Harth et al., 2008; Leach, 2016).

People may express emotions about the specific behavioral choices of ingroup and outgroup members as well as the outcomes they experience. Guilt and pride are especially important in the context of intergroup transgressions, because they imply contrasting reactions to the group-serving behavior of an ingroup member (Harth et al., 2008; Harth et al., 2013; Maitner et al., 2007). Focusing on benefits to the ingroup may lead group members to experience pride (Martens, Tracy, & Shariff, 2012), but focusing on the harm done to the outgroup and on the violation of moral standards may lead members to experience guilt (e.g., Baumeister, Stillwell, & Heatherton, 1994; Doosje, Branscombe, Spears, & Manstead, 1998). Correspondingly, pride or happiness expressed by an ingroup member may lead other group members to focus on benefits for the ingroup and consequently experience pride themselves, whereas guilt expressed by an ingroup member may lead other group members to focus on harm to the outgroup and consequently also to experience guilt.

These emotions are also associated with different behavioral outcomes: Pride predicts increased perceptions of the behavior's legitimacy (Harth et al., 2008) and a greater likelihood of engaging in the same actions (Tangney, Stuewig, & Mashek, 2007; van der Schalk, Bruder, & Manstead, 2012); guilt, on the other hand, has been linked with inhibition of ongoing behavior, and self-reflection (Amodio, Devine, & Harmon-Jones, 2007), as well as reparatory gestures and behaviors (Baumeister et al., 1994; Brown, Gonzalez, Zagefka, Manzi, & Cehajic, 2008; Tangney & Dearing, 2003). Group-based pride and guilt should therefore predict behaviors following a transgression committed by the ingroup. Consistent with this reasoning, Harth and colleagues (2013) showed that being informed about the ingroup's responsibility for protecting or damaging the environment influenced participants' anger, pride, and guilt, which in turn affected behavioral intentions to repair the damage or punish the wrongdoer. Maitner et al. (2007) obtained similar effects of presenting participants with emotion-inducing statements describing their country's aggressive actions. The degree

to which these descriptions elicited satisfaction or guilt predicted opposing behavioral intentions: to increase or decrease support for future aggression, respectively.

In sum, research suggests that emotions communicated in intergroup interactions predict behavioral intentions to allocate resources. This influence is likely to operate through the elicitation of emotions in receivers. In particular, guilt and pride following unfair behaviors may have significant and contrasting consequences for intergroup exchanges.

The Present Research

The present research focuses on resource allocation in competitive exchanges between groups – specifically, after a member of one's own group fails to reciprocate another group's trust, leading to a sizeable inequality in the two groups' resources. We investigate how emotions expressed in response to such group-serving behavior affect other group members' pride and guilt as well as their subsequent resource allocation decisions. We examine these effects for emotions expressed by outgroup members (Study 1) and by ingroup members (Study 2). We propose that both ingroup and outgroup emotional responses to ingroup-serving behavior will affect how other group members feel and consequently act. In accord with social appraisal accounts, negative emotions – such as anger or disappointment – expressed by the victim outgroup and signaling the negative impact of the trust violation, should influence ingroup members' evaluations of how the group has behaved and their willingness to reduce the inequality between groups. Correspondingly, emotions expressed by ingroup members – such as happiness or guilt – are likely to emphasize either the ingroup's superiority or the costs imposed on the outgroup by this behavior.

We therefore examine how ingroup members' pride and guilt are affected by anger and disappointment expressed by an outgroup member (Study 1) and by happiness and guilt expressed by the ingroup perpetrator (Study 2). We focus on these emotions because of their relevance in resource allocation (e.g., Bosman & van Winden, 2002; Lelieveld et al., 2013;

Maitner et al., 2007; Solak et al., 2016; van Kleef, de Dreu, & Manstead, 2004; van Kleef, de Dreu, & Manstead, 2006) and because their consequences appear to vary depending on who is the expresser (e.g., Lelieveld et al., 2013).

We hypothesize that emotional reactions to an ingroup member's selfish behavior communicated by an ingroup or outgroup member will affect other group members' subsequent reparatory behavior. We also hypothesize that this effect will be mediated by changes in group members' feelings of guilt and pride. Specifically, emotion expressions that elicit lower levels of pride and higher levels of guilt in ingroup members should lead them to share more resources in subsequent intergroup interactions, thereby encouraging reparatory behavior.

To test these predictions, we conducted two laboratory experiments using an interactive trust game (Berg, Dickhaut, & McCabe, 1995) adapted for an intergroup context. Within the game, we manipulated the emotions expressed by the outgroup (Study 1) or by the ingroup representative (Study 2), following an unfair exchange benefitting the ingroup in a competitive intergroup setting (Benton & Druckman, 1974; Folmer et al., 2012). To examine how emotional experience was affected by ingroup and outgroup expressions, we measured perceivers' feelings of pride and guilt before asking them to play a second round of the game with another member of the outgroup. Their allocations in this second round served as a measure of reparatory behavior. We then examined how this behavior varied as a function of ingroup and outgroup members' reactions to unfairness and as a function of participants' own feelings of pride and guilt.

Study 1

Study 1 focused on the impact of outgroup members' emotional reactions to an ingroup member's trust-violating behavior. In particular, we investigated how the communication of anger or disappointment affected participants' pride and guilt as well as

their subsequent resource allocation to an outgroup member. Both anger and disappointment are plausible reactions to unfairness (Keltner, Ellsworth, & Edwards, 1993; Lelieveld et al., 2013) but elicit contrasting reactions and perceptions. Disappointment – like sadness – is a help-seeking emotion that elicits sympathy but may also convey weakness and dependency (Keltner & Kring, 1998; Lelieveld et al., 2013). Its effects may differ depending on the emotion it elicits in the receiver: If communicated disappointment elicits guilt, subsequent behavior is likely to be prosocial; if it does not elicit guilt, more selfish behavior is likely to follow (Lelieveld et al., 2013).

Unlike disappointment, anger conveys toughness and high limits in negotiations and economic exchanges, often leading to better outcomes for the expresser than other emotions such as happiness or disappointment (Lelieveld et al., 2013; Van Kleef et al., 2004). It indicates that goals have been hindered and that the expresser blames someone else for it (Smith, Haynes, Lazarus, & Pope, 1993). As with disappointment, existing research suggests that the effects of anger depend on the emotional reaction it elicits in the receiver. In particular, it may benefit the expresser only when it leads the receiver to experience fear rather than reciprocated anger (e.g., Lelieveld, Van Dijk, Van Beest, & Van Kleef, 2012).

Because the social effects of disappointment and anger depend on the emotions they evoke in receivers, we hypothesized that intergroup reparatory behavior would differ depending on the extent to which participants responded with pride or guilt. Consistent with previous research (Lelieveld et al., 2013), we predicted that outgroup disappointment would increase reparatory behavior only to the extent that it induced guilt in participants. Conversely, outgroup anger communicates toughness and a threat to the common resource pool (Bosman & van Winden, 2002), and should therefore reduce participants' positive feelings about their group's competitive advantage without eliciting guilt. We therefore

predicted that increases in guilt and decreases in pride should encourage reparatory behavior, with outgroup disappointment increasing guilt, and outgroup anger decreasing pride.

Method

Participants and design. Eighty-five participants (50 females, M_{age} = 21.70, *SD* = 5.10) were recruited in groups during lab sessions (for a total of 16 sessions) and paid £5 for their time. We recruited as many subjects as we could over six weeks and excluded data from 18 participants: ten who did not answer screening questions correctly and eight who did not complete the experiment due to a computer error (final $N = 67$). The study used a between-subjects design, with three outgroup emotion conditions (anger: $n = 23$; disappointment: $n = 24$; control: $n = 20$).

Procedure. We implemented the study in Qualtrics (Provo, UT). Participants were recruited in groups of 4 to 10 and worked at separate computer stations in the same room. After providing consent, they completed a questionnaire (Doosje et al., 1998) that ostensibly divided them into two groups. Members of the two groups then played a trust game (Berg et al., 1995) to gain lottery tickets for their respective teams. The goal was to maximize the group's tickets thus increasing the chances of winning a lottery prize of £100. The trust game itself involved an 'investor' transferring lottery tickets to a 'trustee.' The number of tickets transferred was then tripled, and the trustee could theoretically return any proportion of this new total to the investor. Note that investors in trust games risk exploitation by trustees who are not compelled to repay; however, if investors transfer sufficient resources and trustees reciprocate, both parties end up better off than at the start of the game.

After reading the instructions, participants were informed that their team would act as trustees and that one member of their group would play a 'demonstration round' with someone from the other team (supposedly to help them learn the rules of the game). They then read a message stating that another member of their team had been selected to play and

that that they would be shown what was happening on this person's screen during the demonstration round. After a short waiting time, ostensibly to establish a computer connection, participants watched what they believed was the real-time trust game but was in fact a pre-recorded screen capture.

The representatives of both teams started the game with an initial endowment of 10 lottery tickets, which could be increased or decreased depending on players' decisions. The video showed the ingroup representative receiving 7 tickets (then tripled to 21) and subsequently returning 0 tickets to the other team. After this breach of trust, the ingroup representative received a message from the other player, reporting how this person felt about the round. The message stated either "I am angry about the round" (anger condition), or "I am disappointed about the round" (disappointment condition). In the control condition, the ingroup representative did not receive a message from the outgroup representative.

After observing the demonstration round, participants rated the extent to which they felt proud and guilty, using 7-point Likert scales running from 1 (*Not at all*) to 7 (*Extremely*). These items were presented along with five other items (interested, enthusiastic, upset, happy, and attentive; see also Supplementary Materials, Table S1), which served as fillers. Participants then played a second round of the game with another member of the outgroup team. In this round, they were informed that they had received 4 tickets (tripled to 12) from the outgroup player and were asked to decide how many of their resulting 22 tickets (10 initial tickets + 12 received from other player) to return. The number of tickets sent to the outgroup member served as an index of reparatory behavior.

After the second round, participants were asked to think back to the demonstration round and rate how responsible and how guilty they felt about the outcome, and how much they had wanted to compensate and make amends for it. They also rated how fairly the ingroup representative had behaved in the demonstration round, and how much they had in

common with ingroup and outgroup members. To respond, participants made ratings on scales ranging from 1 (*Not at all,* or *Very little*) to 5 (*Very much).* Three items tested participants' understanding of the trust game, and, in the anger and disappointment conditions, one open-ended question asked about the emotion communicated by the outgroup member. Finally, subjects completed the Test of Self-Conscious Affect (TOSCA, Tangney, Wagner, & Gramzow, 1989) and the 'slider' measure of Social Value Orientation (Murphy, Ackermann, & Handgraaf, 2011). After finishing the questionnaire, they were thanked and debriefed. One of the 16 sessions was randomly selected and the 4 participants in this session shared the £100 lottery prize. The study was reviewed and approved by the ethics committee of the institution where the study took place (University of Oxford: R47094/RE001).

Results

Correlations between all key dependent variables are reported in Supplementary Materials.

Manipulation checks. Participants rated the fairness of the ingroup representative as significantly lower than 3, the scale midpoint, $M = 1.53$, $SD = 1.01$, $t(66) = -11.81$, $p < .001$. These ratings did not vary as a function of outgroup emotion, $F(2,63) = 2.13$, $p = .13$, $\eta^2_p = .06$.

Responses to the open-ended question asking about the emotion communicated by the outgroup member were coded as instances of anger (if they contained the word "anger" or "angry") or as disappointment (if they contained the word "disappointment" or "disappointed") by two independent judges (in complete agreement, all $\kappa s = 1.00$, $ps < .001$). Two subsequent chi-square tests revealed that participants reported perceiving anger more frequently in the anger (78%) than in the disappointment condition (4.2%), χ^2 (1, $N = 47$) = 26.77, $p < .001$, and perceiving disappointment more frequently in the disappointment condition (79%) than in the anger condition (0%), χ^2 (1, $N = 47$) = 30.56, $p < .001$.

Reparatory behavior. Allocations in the second round were significantly affected by outgroup emotion, $F(2, 64) = 3.25$, $p = .045$, $\eta^2_p = .09$, showing that participants sent more tickets in the anger condition ($M = 6.17$, $SD = 2.92$) than in the control condition ($M = 3.70$, $SD = 3.96$), $p = .06$ (Tukey HSD), 95% CI [-5.01, .06]. The allocations made in the disappointment condition ($M = 4.12$, $SD = 3.49$) did not differ from those made in the control condition, $p = .91$, or from those made in the anger condition, $p = .11$.[1]

Pride. Feelings of pride were also affected by outgroup emotion, $F(2,64) = 3.31$, $p = .04$, $\eta^2_p = .09$, such that participants felt less pride in the anger condition ($M = 1.56$, $SD = 1.04$) than in the control condition ($M = 2.65$, $SD = 1.69$), $p = .04$, 95% CI [.04, 2.12]. The difference between the control and disappointment conditions ($M = 2.29$, $SD = 1.49$) was not significant, $p = .68$.

We conducted an indirect effects analysis to investigate whether the effect of outgroup anger on reparatory behavior was mediated by feelings of pride (Hayes, 2013).[2] Outgroup anger (compared to the control condition) was a significant positive predictor of allocations, $B = 2.47$, $F(1,64) = 5.47$, $p = .02$, and a significant negative predictor of pride, $B = -1.08$, $F(1,64) = 6.24$, $p = .01$. When participants' allocations were regressed on outgroup anger and self-reported pride, the effect of pride remained significant, $B = -0.87$, $F(1,63) = 9.19$, $p = .003$, 95% CI [-1.44, -.30], but the direct effect of outgroup anger was no longer significant, $B = 1.53$, $F(1,63) = 2.15$, $p = .15$, 95% CI [-.55, 3.62]. In addition, the indirect effect of outgroup anger through participants' feelings of pride was significant, $B = .94$, 95% CI [.18, 2.25], estimated with 5000 bootstrap resamples.

Guilt and guilt-related appraisals. Participants' ratings of guilt were not influenced by outgroup emotion. Similarly, the guilt and guilt-related appraisal ratings (willingness to compensate and responsibility for the outcome of the first round) measured after the second round allocation were also not significantly affected by emotion condition, Fs < 1, *ns*.

Discussion

Study 1 investigated effects of emotions expressed by a member of the outgroup on participants' own emotions and reparatory behavior. Following an ingroup member's selfish behavior, an outgroup member communicated anger, disappointment, or no emotion via a written message. Results revealed that participants' allocations were higher when the outgroup member communicated anger than when no emotion was communicated. In other words, anger increased reparatory behavior. Further, the effect of anger on allocations was mediated by decreased feelings of pride, suggesting that participants' pride about the ingroup advantage was diminished when the outgroup expressed anger. Outgroup anger did not affect participants' guilt, perhaps because feelings of responsibility for the behavior of the ingroup member were not influenced. These results are consistent with social appraisal accounts (e.g., Manstead & Fischer, 2001), suggesting that emotion and behavior in intergroup exchanges partly depend on the emotions expressed by members of the other group. In particular, outgroup anger appears to have reduced participants' positive orientation to the behavior of the ingroup trustee resulting in lower pride and higher reparation.

Interestingly, expressions of outgroup disappointment following the ingroup member's behavior did not increase guilt and did not affect participants' allocations. This is consistent with Lelieveld and colleagues' (2013) earlier finding that expressed disappointment only elicited cooperative behavior when it evoked guilt. In their research, guilt was only elicited when disappointment was communicated in individual (versus representative) negotiations or by an ingroup (versus outgroup) member. In the current study, disappointment was communicated by a single outgroup member to another member of the participant's group and not directly to the participant himself or herself. Thus, consistent with previous research (Lelieveld et al., 2012; Lelieveld et al., 2013), the absence of an effect on

allocations in the disappointment condition is likely due to the fact that expressing this emotion did not increase participants' guilt.

The results of the current study show that emotions communicated following group-serving actions can influence subsequent intergroup reparatory behavior. The emotion in this experiment was communicated by the outgroup, but there are good reasons for believing that the emotional reaction of the ingroup member who engaged in group-serving behavior should also influence reparations. Ingroup member's emotions – especially those expressed by the person who engaged in the unfair behavior – are likely to affect how participants feel and consequently act. For example, recent evidence reveals that positive or negative emotions displayed by someone who has acted unfairly influence observers' economic decisions by communicating how the expresser appraises the unfair act and by reinforcing (or undermining) social norms of cooperation and fairness (van der Schalk et al., 2015). These effects, observed in interpersonal settings, should also operate during interactions between groups. Therefore, Study 2 focused on the influence of emotions expressed by the transgressing ingroup member on reparatory behavior.

Study 2

Study 2 manipulated emotions expressed by the ingroup rather than the outgroup, and again investigated the mediation of their influence on participants' reparatory behavior by participants' own experiences of pride and guilt. We extended the methods used in Study 1 to create a more immersive paradigm to investigate participants' reactions in a similar trust-game context. In this study, the ingroup member's group-serving behavior was enacted by a confederate, posing as another participant. The confederate was (apparently randomly) selected to play a 'demonstration round' of the trust game. In this round, she engaged in the same group-serving behavior as seen in Study 1. She then communicated verbal and nonverbal expressions of either guilt or happiness.

By expressing guilt, an ingroup member emphasizes the harm done to the outgroup and implicitly conveys a negative appraisal of their own behavior towards that outgroup. According to social appraisal accounts (e.g., Manstead & Fischer, 2001; Parkinson, 2011), this communication should affect how other ingroup members feel about the situation. Specifically, we predicted that guilt expressed by the ingroup representative would evoke guilt in participants and thereby result in reparatory behavior (Baumeister et al., 2014). Van der Schalk and colleagues (2015) found that participants who observed another individual expressing regret about unfair resource allocation decisions expected to feel a similar emotion if they were to behave in the same way, and were more likely to behave fairly when making their own resource allocation decisions. These findings suggest that regret about acting unfairly establishes a social norm of fairness and sharing. We predicted that expressions of guilt by the ingroup representative would have a similar effect, but only to the extent that they increased participants' own feelings of guilt.

The possible outcomes of expressing happiness following the group-serving behavior are less clear-cut. The most straightforward prediction – in line with the findings of van der Schalk et al. (2015) – is that expressing happiness will serve to frame the intergroup exchange as competitive, one in which it is normative to act in a way that favors one's own group. If this is the case, pride should be increased and reparatory behavior should be decreased. Indeed, expressions of happiness in relation to an action resulting in ingroup benefit may be interpreted by other group members as satisfaction or pride, potentially increasing participants' support for the confederate's unfair behavior (e.g., Harth et al., 2013; Maitner et al., 2007). Thus, effects of the ingroup representative's expressed happiness on reparatory behavior should depend on the extent to which it elicits pride in participants.

In summary, Study 2 manipulated ingroup reactions to the same group-serving behavior that was used in Study 1 to investigate whether they would evoke pride or guilt in

ingroup members and thereby influence reparatory behavior in subsequent exchanges with outgroup members. As in Study 1, we predicted that the influence of emotion expressions on participants' allocations would be mediated by participants' own feelings of pride and guilt. Emotion expressions eliciting lower pride and higher guilt should increase participants' allocations. Conversely, emotion expressions evoking greater pride and lower guilt should reduce allocations to outgroup members.

Method

Participants and design. One hundred and sixty-four participants (139 females, M_{age} = 18.43, *SD* = 0.82) were recruited in groups of two or three persons (for a total of 60 sessions) and compensated with course credit. We recruited as many participants as we could during a 3-week period, aiming for at least 53 usable data points in each condition to ensure 80% statistical power to detect a medium-sized effect in a between-subjects ANOVA. We excluded data from 17 participants: three who did not follow experimental instructions, one who reported having participated in a similar experiment in the past, and 14 who did not correctly answer the three questions checking the understanding of the trust game (final *N* = 147). The study used a between-subjects design, where each group was randomly allocated to one of the three ingroup emotion conditions (guilt: *n* = 53; happiness: *n* = 47; control: *n* = 47).

Procedure. The procedure was similar to Study 1, but used a more immersive paradigm. Participants were recruited in groups of 2 or 3. Each group was accompanied by one of two female confederates who posed as a fellow participant.

Participants were first informed that they would be interacting with another group of students. The two groups had ostensibly been recruited on the basis of participants' scores on a prior survey. To reinforce the impression that participants were interacting with another team, the experimenter appeared to communicate by telephone with a colleague who was

supervising the other group. After providing written consent, participants were left alone in the room for 10 minutes with the task of selecting a name for their group. This task served as an icebreaker designed to increase group cohesion.

As in Study 1, participants next played a 'demonstration round' in order to learn the rules of the game. The experiment was implemented in MediaLab (version 2012.4.133, New York, NY: Empirisoft Corporation). Participants gathered around the computer, which selected (supposedly at random) one representative from each of the two teams. In reality, the confederate was always selected as the ingroup representative. She sat at the computer and ensured that other group members standing behind her could read the trust game instructions on the screen. As in Study 1, the participant's team acted as trustees, while the other team acted as investors. After receiving 7 tickets (tripled to 21) from the outgroup member, the confederate decided not to return any tickets to the other team. In the guilt and happiness conditions, the program asked the confederate how guilty and happy she felt about the number of tickets returned to the other group. The confederate answered the question following a standardized script. In the guilt condition she sighed, looked down, and said "*Now I don't feel so good about it,"* before selecting the response *very much* for guilt and *a little* for happiness. In the happiness condition, she laughed, nodded her head, and said "*I feel pretty good about it,"* then selected the response *very much* for happiness, and *a little* for guilt. In the control condition, the ingroup representative was not asked about how she felt and did not express any emotion.

Next, participants moved to another room and sat at separate workstations. There, they reported the extent to which they felt proud and guilty after the demonstration round, using 5-point scales ranging from 1 (*Not at all*) to 5 (*Extremely*) in a questionnaire that also included four filler items (interested, enthusiastic, upset, and attentive, see also Supplementary Materials, Table S2 for details). Participants then played the second round of

the game with a member of the other group. As in Study 1, they were informed that they had received 4 tickets from this other person, and were asked how many of the resulting 22 tickets they wished to return.[3]

As manipulation checks, participants rated the fairness of the decision made by the ingroup representative and how happy and positive the representative had felt about it. Then, as measures of guilt and guilt-related appraisals, there followed items asking about the extent to which participants felt guilty about and responsible for the (unequal) outcome of the demonstration round, and how much they had wanted to compensate for it. Participants were also asked how much they thought they had in common with other members of their own team and with members of the other group. Finally, they answered three screening questions testing their understanding of the trust game and completed the TOSCA (Tangney et al., 1989). They were thanked and debriefed by e-mail. One lottery-winning team was randomly selected to share £100 between its members. The study was reviewed and approved by Cardiff University's School of Psychology ethics committee (14.10.14.3866).

Results

Similar to Study 1, we examined how emotions expressed by the ingroup member (happiness, guilt, control) affected participants' feelings of pride and guilt and their behavior in the second round of the trust game.

Manipulation checks. Participants rated the fairness of the ingroup representative as significantly lower than 3, the scale midpoint, $M = 2.13$, $SD = 1.12$, $t(146) = -9.44$, $p < .001$. These ratings did not vary as a function of ingroup emotion, $F(2,144) = .44$, $p = .64$, $\eta^2_p < .01$.

Participants' ratings of the extent to which the ingroup representative was happy were significantly influenced by the emotion condition, $F(2,144) = 67.53$, $p < .001$, $\eta^2_p = .48$. Post-hoc comparisons using the Tukey HSD test revealed that happiness ratings were significantly lower in the guilt condition ($M = 2.23$, $SD = 0.97$) than in the control condition ($M = 3.83$, SD

= 0.89), $p < .001$, 95% CI [1.18, 2.03]. However, the differences between the happiness condition ($M = 4.17$, $SD = 0.82$) and the control condition were not significant, $t(92) = -1.97$, $p = .21$.[4]

Reparatory behavior. Participants' allocations in the second round were significantly affected by ingroup emotion, $F(2,144) = 3.25$, $p = .04$, $\eta^2_p = .04$.[5] Participants sent significantly more tickets in the guilt condition ($M = 4.02$, $SD = 2.73$) than in the control condition ($M = 2.77$, $SD = 2.19$), $p = .03$, 95% CI [.07, 2.43]. There were no significant differences between the happiness ($M = 3.26$, $SD = 2.47$) and control conditions, $p = .61$, or between the happiness and guilt conditions, $p = .28$.

Pride. Feelings of pride were marginally significantly influenced by ingroup emotion, $F(2,144) = 2.93$, $p = .06$, $\eta^2_p = .04$, such that participants were less proud in the guilt ($M = 1.72$, $SD = 0.84$) than in the control emotion condition ($M = 2.19$, $SD = 1.30$), $p = .06$, 95% CI [-.01, .96]. The difference between the control and happiness conditions ($M = 1.81$, $SD = 0.90$) was not significant, $p = .17$.

Mediation analysis revealed that expressions of guilt by the ingroup representative (compared to the control condition) significantly affected participants' allocations, $B = 1.25$, $F(1,144) = 6.34$, $p = .01$, as well as their feelings of pride, $B = -0.47$, $F(1,144) = 5.34$, $p = .02$. There was a tendency for participant pride to predict participants' allocations when controlling for emotion condition, $B = -.35$, $F(1,143) = 3.09$, $p = .08$, 95% CI [-.75, .04]. The direct effect of guilt emotion condition on participants' allocations remained significant in this joint regression model, $B = 1.09$, $F(1,143) = 4.66$, $p = .03$, 95% CI [.09, 2.08]. However, the indirect effect of condition through pride was significant when estimated with 5000 bootstrap resamples, $B = .17$, 95% CI [.001, .52], suggesting partial mediation.

Guilt and guilt-related appraisals. Feelings of guilt were significantly affected by ingroup emotion, $F(2,144) = 4.64$, $p = .01$, $\eta^2_p = .06$, such that participants felt more guilty in

the guilt condition (M = 2.91, SD = 1.23) than in the control condition (M = 2.21, SD = 1.02), p = .008, 95% CI [.15, 1.23]. The difference between the control and happiness conditions (M = 2.64, SD = 1.15) was not significant, p = .17.

Mediation analysis showed that expressions of guilt by the ingroup representative (compared to the control condition) significantly predicted participants' allocations, B = 1.25, $F(1,144) = 6.34$, p = .01, and their own feelings of guilt, B = 0.69, $F(1,144) = 9.20$, p = .003. Participants' guilt remained a significant predictor of their allocations in a joint regression model controlling for emotion condition, B = 0.97, $F(1,143) = 35.45$, $p < .001$, 95% CI [.65, 1.29], but the effect of emotion condition on allocations was no longer significant, B = .58, $F(1,143) = 1.58$, p = .21, 95% CI [-.33, 1.49]. The indirect effect of condition through self-reported feelings of guilt was significant when estimated with 5000 bootstrap resamples, B = .67, 95% CI [.26, 1.23], consistent with full mediation.

Participants' ratings of guilt and guilt-related appraisals measured after second round allocations were not predicted by emotion condition, Fs < 1.6, *ns*.

Discussion

Study 2 examined the effect of an ingroup member's expressed emotions on participants' pride, guilt, and reparatory behavior. As predicted, the results indicated that guilt expressed by an ingroup member who had engaged in group-serving behavior led participants to make higher allocations to an outgroup game partner in a subsequent round, compared to happiness or no emotion. The effect of guilt expression on reparatory behavior was fully mediated by participants' own experienced guilt. This pattern of findings is in line with social appraisal accounts (Manstead & Fischer, 2001). There was also evidence, albeit weaker, that the ingroup member's guilt expression reduced subjective pride about the ingroup's behavior and thereby increased allocations to the outgroup. This finding mirrors the results of Study 1, where lower levels of participants' pride also increased reparatory behavior.

There was no evidence that ingroup expression of happiness influenced pride, guilt, or reparatory behavior. As noted earlier, previous research shows that seeing someone expressing positive emotion after an unfair behavior increases the likelihood of the observer acting unfairly (van der Schalk et al., 2015). We therefore expected that seeing the representative's happiness following a group-serving behavior would increase participants' pride, and decrease their guilt and subsequent reparatory behavior. It is possible that the low allocation of the ingroup representative in the demonstration round, combined with the intergroup setting (Folmer et al., 2012), established a particularly competitive social norm, leading to participants' low allocations in the control condition. The influence of happiness might therefore be stronger if the emotion expression followed a less extreme instance of unfair behavior. Alternatively, general fairness norms (Gintis, 2000; Hamlin et al., 2011) may have made it hard for participants to share the confederate's apparent happiness following trust-violating behavior. A third possible explanation for the lack of effect in the happiness condition is that the happiness and control conditions elicited similar degrees of happiness and positivity. This suggests that future research will need to use stronger manipulations of happiness.

General Discussion

In two studies, we demonstrated the impact of communicated emotions on reparative behavior in intergroup interactions. Emotions communicated by both outgroup (Study 1) and ingroup (Study 2) members following group-serving behavior by an ingroup member influenced subsequent allocations to the outgroup. In Study 1 we showed that when the outgroup communicated anger, compared to no emotion, ingroup members experienced less pride, and subsequently made higher allocations to the outgroup. In Study 2 we found that when the ingroup member expressed guilt, participants felt more guilty and less proud, and made higher allocations to the outgroup than when the ingroup member expressed no

emotion. Together, these findings highlight the importance of emotion expressions in intergroup relations and suggest a mechanism through which these emotions can shape intergroup trust and behavior. Specifically, the results of our mediation analyses suggest that intergroup emotions affect intergroup reparations by inducing feelings of pride and guilt in group members.

We focused on these emotions because they reflect opposing reactions to ingroup advantage (Hart et al., 2008, 2013; Maitner et al., 2007). This advantage can be framed as legitimate and therefore as a basis for increased pride (Tangney et al., 2007; van der Schalk et al., 2012); or as illegitimate, and therefore as a basis for reduced pride and increased guilt (Brown et al., 2008; Baumeister et al., 1994; Tangney & Dearing, 2003). The results of the two studies strongly suggest that emotions communicated by ingroup or outgroup members in reaction to parochial group-serving behavior encourage a pride-reducing or guilt-enhancing framing of this behavior.

Our findings are consistent with social appraisal accounts of emotion (e.g., Manstead & Fischer, 2001; van der Schalk et al., 2015), and clarify the processes by which emotion expressions influence other people's resource-allocation decisions and shape trust between groups. Specifically, both anger expressed by an outgroup member and guilt expressed by an ingroup member appear to encourage reparatory behavior and reinforce fairness. Anger expressed by a disadvantaged outgroup member threatens ingroup interests by signaling readiness to confront (Leach, 2016), thereby threatening the opportunity to maximize the common resource pool, whereas guilt expressed by a trust-violating ingroup member is likely to attract participants' attention to the breach of moral standards (Baumeister et al., 1994). In our research, expressions of these emotions caused a decrease in participants' feelings of pride and an increase in their feelings of guilt, respectively. Consistent with previous

evidence (e.g., Harth et al., 2013; Lelieveld et al., 2013), these changes in participants' affective state predicted their reparatory behavior towards the harmed group.

Although outgroup expressions of anger and ingroup expressions of guilt were effective in influencing ingroup emotions and behavior, the same was not true of outgroup expressions of disappointment or ingroup expressions of happiness. As noted earlier, disappointment is a weaker emotion than anger, in that it implies a less antagonistic stance, and it seems that, when expressed by the disadvantaged outgroup, it is insufficient to change ingroup emotions or behavior (Lelieveld et al., 2013). Regarding ingroup expressions of happiness about the group-serving behavior, we noted earlier that such expressions could signal pleasure at the ingroup's advantage and/or pleasure at the outgroup's disadvantage. The former might be a basis of increased pride, while the latter might be a basis for increased guilt. This ambiguity about the object of the ingroup member's expressed happiness might help to explain why it did not result in significant changes in ingroup emotions or behavior. Future studies could assess the effects of more object-specific emotion communications.

It is worth noting that previous studies of intergroup guilt and pride have tended to assess these emotions using self-reports of feelings about past wrongdoings of one's national ingroup towards other groups (e.g., Brown et al., 2008; Harth et al., 2008, Iyer, Schmader, & Lickel, 2007; McGarty et al., 2005; Swim & Miller, 1999). In these studies, reparative actions are typically indexed by behavioral intentions (e.g., Doosje et al., 1998), attitudes towards affirmative action (Swim & Miller, 1999), or evaluations of official apologies (McGarty et al., 2005). A strength of the current research is that we measured actual behavioral outcomes indexed by participants' economic decisions. We also manipulated intergroup behavior and assessed feelings of pride and guilt in a live and dynamic setting, using the trust game – a flexible experimental tool that models the features of actual intergroup contexts and thereby enables a controlled study of the variables affecting behavior in natural circumstances

(Bornstein, 2003). The present findings are consistent with those from studies that examine the links between feelings about group behavior and behavioral intention in real-world groups (e.g., Brown et al., 2008, Harth et al., 2013, Solak et al., 2016).

Importantly, the effects of emotion communication in the present research were found in a quasi-minimal group context, where the groups were approximately 15 minutes old by the time the intergroup trust game started. It is therefore all the more noteworthy that the emotion expression manipulation had a significant impact on emotions and behavior in both studies. Arguably, these effects would be even stronger in natural groups that provide the basis for significant aspects of one's identity. Investigating how observers' guilt and pride affect reparatory behavior in such contexts is a promising avenue for future research.

Given that our ultimate goal is to shed light on how emotional expression can restore trust between groups following a group's failure to reciprocate a trusting move from another group, it could be argued that the evidence of trust restoration was rather meager. Even in the conditions in which the outgroup expressed anger, or the ingroup member expressed guilt, the mean number of tickets allocated to the outgroup in round 2 was not high in absolute terms, leaving a marked disparity between ingroup and outgroup resources. This may simply reflect the inherent difficulty of establishing cooperation between groups (Folmer et al., 2012; Folmer, Wildschut, De Cremer, & van Lange, 2017), especially when one group has acted in such a group-serving manner in the first round, thereby establishing a social norm of parochial behavior (Fowler & Christakis, 2010). There was nevertheless a significant emotion effect, which highlights the fact that emotion expressions have the potential to influence intergroup interactions, even when such exchanges are highly unfair.

Together, the findings reported here show that the emotions communicated by either ingroup or outgroup members following a group-serving move in an intergroup trust game shape participants' own emotional experience and future allocation behavior. This

demonstrates the importance of communicated emotions in establishing (or re-establishing) trust between groups and provides support for the application of social appraisal accounts of emotion to intergroup settings. Returning to Adam Smith, we believe that both ingroup and outgroup expressions of emotion can remind ingroup members that "when we prefer ourselves so shamefully and so blindly to others, we become the proper objects of resentment" (III.1.46). Because they have the power to evoke emotional reactions in individual and intergroup settings, expressions of emotion can help to create or restore cooperation when trust is a scare resource.

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Footnotes

[1] Including group size, participants' proneness to guilt (as measured by TOSCA) or Social Value Orientation as covariates did not change the pattern of results. The main effect of outgroup Emotion on participants' allocations was significant in all three analyses, $F(2, 63) = 3.13$, $p = .05$, $\eta^2_p = .09$; $F(2, 61) = 3.44$, $p = .038$, $\eta^2_p = .10$; $F(2, 63) = 3.33$, $p = .04$, $\eta^2_p = .10$, respectively. These three measures were not the focus of the present research and will not be discussed further.

[2] Because the emotion factor had three levels, all mediation analyses reported in this paper used two dummy variables, comparing each emotion condition with the control condition. The variable of interest was entered as the main predictor and the other variable was entered as a covariate.

[3] Due to a programming error, the number of tickets that could be returned was constrained to a value between 0 and 10. In practice this error made little difference to the results. Only 4 out of 147 participants (2.7%) chose to return 10 tickets, and the modal number returned was 2.

[4] Analysis of participants' ratings of the representative's positivity revealed an identical pattern of results: There was a significant effect of emotion condition, $F(2,144) = 75.14$, $p < .001$, $\eta^2_p = .51$. Ratings were significantly lower in the guilt condition ($M = 2.30$, $SD = 0.75$) than in the control condition ($M = 3.89$, $SD = 0.84$), $p < .001$, with the differences between the happiness condition ($M = 4.09$, $SD = 0.83$) and the control condition not being significant, $t(92) = -1.11$, $p = .75$.

[5] The pattern of results remained similar after controlling for participants' proneness to guilt (as measured by TOSCA), $F(2,135) = 2.75$, $p = .07$, $\eta^2_p = .04$, and for the confederate's identity, $F(2,143) = 3.27$, $p = .04$, $\eta^2_p = .04$.