Tolerance of Justice Violations: The Effects of Need on Emotional Reactions After Violating Equality in Social Dilemmas¹

JEROEN STOUTEN² AND
EVA CEULEMANS
*University of Leuven
Leuven, Belgium*

MARIEKE E. TIMMERMAN
*University of Groningen
Groningen, The Netherlands*

ALAIN VAN HIEL
*Ghent University
Ghent, Belgium*

Equality is an important coordination rule in social dilemmas. Studies have shown that a violation of equality elicits strong negative emotions. This research addresses whether these emotional reactions occur when another group member is in need of social support. Results showed that participants reacted less negatively if equality was violated and the other person was in need. Moreover, it was shown that there are individual differences in the extent to which people are influenced by fairness violations in their emotional reactions. In particular, Conscientiousness was important for people's emotional reactions, and people low rather than high in Conscientiousness reacted more negatively. These findings are discussed in light of coordination rules and emotions in social dilemmas and individual differences.

In daily life, people often participate in groups that have a number of important functions, such as providing members with a sense of belongingness and tangible resources (Baron & Byrne, 2000). Group membership often involves a conflict between personal and collective interests, and a public-good dilemma constitutes one of the clearest examples of this conflict. In a public-good dilemma, it is personally more advantageous to contribute few resources and benefit from the group's profits. Yet, if all group members decide to pursue their personal interests, and thus decide not to contribute, then no one profits from the public good and all will be worse off (Komorita & Parks, 1994).

In these public-good situations, people tacitly coordinate their decision behavior by using coordination rules (Van Dijk & Wilke, 1995, 2000). An

¹This work was supported by GOA/05/04 from the Research Fund of the Katholieke Universiteit Leuven and Fund for Scientific Research Flanders (G.0477.09).

²Correspondence concerning this article should be addressed to Jeroen Stouten, Department of Psychology, University of Leuven, Tiensestraat 102, 3000 Leuven, Belgium. E-mail: jeroen.stouten@psy.kuleuven.be

important coordination rule and fairness principle is the equality rule (e.g., Biel, Eek, & Gärling, 1999; Deutsch, 1975). The equality rule holds that when everyone expects to earn an equal share from the public good, group members are also expected to contribute equally (Van Dijk & Wilke, 1995, 2000). However, it also holds that if everyone contributes equally, all members should be paid equally as well.

The present research focuses on this specific instance of distributing the public good in an equal way. The equality principle has been shown to be strongly related to justice issues, as it is perceived to be fair to contribute or receive an equal share (e.g., Van Dijk & Wilke, 1995). Moreover, violation of the equality principle is perceived as unjust and may lead to strong emotions of anger (Stouten, De Cremer, & Van Dijk, 2005).

However, the question arises as to whether people will still react negatively if it is known that the person being advantaged by an unequal distribution of resources is in personal need (even though this person ended up with larger earnings)? Indeed, in everyday situations, people are often confronted with others who have recently been hurt in their social lives. How do people react emotionally when they receive unfair outcomes, but it is known to them that the advantaged person is in need of help? Will this arouse feelings of sympathy and empathy, and will this eventually lower observers' negative emotional reactions?

In the present paper, we draw on research that has shown that people's reactions to fairness violations are a complex interaction between the description of the situation and individual differences (Colquitt, Scott, Judge, & Shaw, 2006; Schmitt, Eid, & Maes, 2003; Schmitt & Sabbagh, 2004; Skarlicki, Folger, & Tesluk, 1999). The present research, therefore, also focuses on individual differences in affective reactions to fairness violations.

Empathy and Equality

Feelings of empathy may emerge as an emotional response to another person in need (Batson et al., 1991). That is, if someone is in need (Deutsch, 1975), observers may feel emotionally sympathetic or compassionate. This is specifically enhanced if people keep the perspective of the other in mind (Batson, Chang, Orr, & Rowland, 2002). Feelings of empathy have been shown to increase helping behavior and to motivate people to be more prosocial (Batson et al., 1991, 1995; Eisenberg & Miller, 1987). For example, feelings of empathy are able to encourage people to donate for charity (Van Vugt, Snyder, Tyler, & Biel, 2000).

Also, in nonhuman beings, responses to need can be observed. For example, rhesus monkeys that were trained to pull two chains tied to different

amounts of food deliveries saw that after some time, pulling the chain that gave larger food supplies resulted in shocking another monkey. By witnessing the other monkey being shocked, two thirds of these monkeys chose to pull the other chain, which led to a smaller reward. Of the remaining third, some monkeys even stopped pulling the chains altogether for a number of days or even weeks, showing that they preferred to starve themselves, rather than endanger the life of the other monkey (Preston & De Waal, 2002).

Hence, responding to need with feelings of empathy seems to be a universal property. Both human and nonhuman primates respond to the distress of others with their own feelings of distress (Sagi & Hoffman, 1976). Understanding the distress and need of others entails experiencing these observed emotions (Brothers, 1990; Cialdini et al., 1987) and may result in feelings of compassion and empathy. Therefore, it may well be that although violating an important fairness rule as equality elicits strong emotions of anger, perceiving the advantaged party in need may likely decrease one's emotional reactions. That is, the present research addresses whether people will hold the other person against a rule of equality (and react negatively, even if the person is in need) or whether people may hold the other person against a rule of need (and react less negatively if the person is in need).

Personality Influences

Research has also suggested that large individual differences exist in the tendency to react with anger to certain events (e.g., George, 1990). Knowledge about which personality factors establish these differences can be important in determining which group members are prone to anger if unfairness takes place in a mixed-motive situation (i.e., one's self-interest is violated). To date, however, little research has taken into account the influence of group members' individual differences in negative emotions as a result of unjust situations, such as equality violations in social dilemmas.

People may react differently to injustice events, depending on their personality characteristics (Edney, 1980; Mitchell, Tetlock, Mellers, & Ordóñez, 1993), because they may appraise the situation differently (e.g., Roseman & Smith, 2001). Research has shown that people's reactions to fairness judgments are a complex interaction between the description of the situation and individual differences (Colquitt et al., 2006; Skarlicki et al., 1999; Schmitt et al., 2003; Schmitt & Sabbagh, 2004; Van Hiel, De Cremer, & Stouten, 2008). The inclusion of individual differences, therefore, may contribute to a more complete picture of people's emotional reactions to unfair situations (e.g., Leventhal, Karuza, & Fry, 1980).

Given the small number of studies on individual group members' reactions to unfairness, we opted for a comprehensive model of personality to

look for potential correlates of reactions to equality violations. One of the most important summary descriptions of individual differences in personality is the Five-Factor model. Studies that aim at establishing the underlying structure of the lexicon of personality language have repeatedly identified five major personality dimensions, and these Big Five dimensions have been identified many times in different languages, populations, cultures, and age groups. The Five-Factor model is thus a comprehensive framework to study personality (Wiggins & Trapnell, 1997) that meaningfully organizes a wide array of personality variables into five basic factors. The Five-Factor model consists of five independent factors: Neuroticism, Extraversion, Openness to Experience, Agreeableness, and Conscientiousness.

It is expected that people's individual differences specifically play a role in a situation in which equality is violated, in contrast to a situation in which all group members will be paid equally. Such a situation is expected to create more uncertainty, which, in turn, makes group members more susceptible to rely more on their own personalities (De Kwaadsteniet, Van Dijk, Wit, & De Cremer, 2006; Snyder & Ickes, 1985). That is, uncertainty on how to react allows people to draw on existing and fundamental properties (e.g., their personality characteristics). More specifically, people high in Conscientiousness are expected to be unaffected by inequality. People high in Conscientiousness can be characterized as self-disciplined and hard working. Moreover, Conscientiousness has been shown to be related to cooperation, exemplifying that conscientious people will be more likely to act for the collective (Van Hiel et al., 2008). In a situation in which equality is violated, people high in Conscientious are expected to not be led by feelings of distress and inequity (Adams, 1965); hence, this is less likely to arouse emotional reactions.

The Present Research

The primary issue we address in the present research is how perceptions of another person in need will affect people's emotional reactions in a situation in which an important fairness norm as equality is violated and group members are highly interdependent. Although need has been shown to induce prosocial behavior, it is less known whether this will also be the case in a situation in which one's personal interests are violated by transgressing equality. In addition, violations of equality in this study represent inequality in dividing the public good; doing so allows for differential experiences of emotion. That is, people may react with sympathy toward the other group member, but in anger with the procedure that established the inequality. Little is known on how transgressions of equality with regard to the

distribution of the public good influence people's emotional reactions in such a mixed-motive situation. Therefore, the present research primarily addresses people's emotional reactions.

In general, *emotions* can be described as psychological responses or states that emerge in response to a particular evaluation or appraisal of persons or events (e.g., Frijda, 1986). More specifically, the negative emotion of anger may be instigated by an unpleasant event for which another person is responsible (Smith & Ellsworth, 1985). In addition, anger may emerge when accepted social norms are violated or when there is disapproval of someone's blameworthy action (Shaver, 1985). It has been suggested that emotions are closely related to issues of morality and fairness (Averill, 1983; Leventhal et al., 1980), as people evaluate certain conditions according to their personal goals and values, and that from these evaluations emotional reactions may arise. Situations that are perceived as unjust are very likely to elicit negative emotions from the person who was treated unfairly (Aquino, Lewis, & Bradfield, 1999; Mikula, Scherer, & Athenstaedt, 1998; Weiss, Suckow, & Cropanzano, 1999). However, even though group members are confronted with a negative outcome, will anger still emerge if another person is known to be in need?

In addition to the emotion of anger, the present research also focuses on the emotions of empathy and sympathy, as another person in need may specifically elicit empathetic or sympathetic emotions in others. Anger is generally targeted at the violator of equality (Stouten et al., 2005) whereas sympathy is targeted at the person in need (Batson et al., 1995). Hence, the current study also focuses on how situations elicit differential emotions.

In an experimental study, the influence of another person's need on group members' emotional reactions if equality is violated is addressed. In addition, the role of people's individual differences is taken into account. In the present research, participants were told to perform a task together with another person. The specific task was a public-good dilemma situation in which participants could contribute to the group's public good. If sufficient investments were contributed, the public good could be provided. Participants then were told that the public good was provided (because the other player ostensibly contributed sufficiently), but that the public good would or would not be divided equally. In the latter condition, the other player would be paid more from the public good. This procedure is similar to previous research (Stouten et al., 2005; Stouten, De Cremer, & Van Dijk, 2006) and is known to be perceived as unfair and to evoke strong anger responses.

However, before participants decided on their contribution, we introduced the need manipulation. Participants in the low- and high-empathy conditions received a written note from the player with whom they could decide to share their endowment. This message signaled that the other player

was in need of help. This need was unrelated to the social dilemma game and was related to people's need with regard to social support (i.e., they just experienced a disturbing life experience and needed cheering up). Participants in the control condition did not receive such a message. In addition, participants in the low-empathy condition were asked when reading the other's message to be as objective as possible, whereas participants in the high-empathy condition were asked to imagine how the other feels. Perspective-taking in concurrence with the perception that another person is in need has been shown to elicit high feelings of empathy; whereas in the low-empathy condition, the effects of only a person in need can be studied without the participant getting emotionally involved.

In sum, another person in need would likely influence participants' emotional reactions, even though the transgression of equality negatively impacts one's outcome. More specifically, it is expected that participants in the control condition will react with stronger negative emotions after a violation of equality in rewards than will participants in the low-empathy condition. In addition, it is expected that participants in the low-empathy condition will react with stronger negative emotions than will participants in the high-empathy condition. However, if no such equality violation occurs (i.e., group members are to be paid equally), another person in need will not influence participants' emotional reactions. With respect to individual differences, as argued previously, it is expected that Conscientiousness will be related to negative emotional reactions. More specifically, we expect an inverse relationship between Conscientiousness and emotions.

Method

Participants and Design

Study participants were 162 undergraduate students who were paid 7 Euro for their participation. These participants were randomly assigned to a 2 (Equality: equal vs. unequal) $\times$ 3 (Empathy: no, low, or high) between-subjects factorial design.

Procedure

Upon entering the laboratory, participants were seated in separate cubicles containing a chair, a table, and a computer. All instructions were presented on the computer screen. Participants were informed that they were part of a two-person group that would play several games, and that they

(supposedly) would be able to interact with one another via their computer. In reality, the computers were not connected with each other. Group members were referred to as Group Member 1 and 2 (in reality, all participants learned that they were Group Member 1).

Public-good dilemma. The public-good dilemma was then introduced. Participants learned that they possessed a personal endowment of 5 chips (each chip = 0.05 Euro), which they, if they wished to, could contribute. If the group managed to reach a given threshold of 6 chips, then the group would receive a bonus of 12 chips, which would be divided between the two group members. Yet, the exact allocation of the bonus was not known to participants.

After explaining the situation, some comprehension questions were asked to check whether participants understood the situation. All participants answered these questions correctly. Then, participants could decide which amount they wished to contribute to the public good. After their decision, participants learned about the other member's contributions. First, it was said that the group succeeded in providing sufficient investments in order to reach the threshold. Then, the exact contribution of all group members was shown. Participants learned that the other group member contributed 3 chips to the public good (i.e., an equal share). Further, participants in the equal-outcome condition learned that they received half of the bonus, and the other person received the other half; that is, both group members received 6 chips. Participants in the unequal-outcome condition learned that the other person received two thirds of the bonus, while the participant received one third; that is, the other person received 8 chips, and the participant received 4 chips.

Empathy manipulation. Before participants learned about the outcome, they were told that one group member could write a message to the other person in the group. The computer would decide which group member had the opportunity to write such a message. In reality, Group Member 2 would always write such a message.

After a few moments, the experimenter returned and gave participants the message from the other group member. Participants in the low- and high-empathy conditions received the following message (which was adapted from Batson et al., 1995):

I'm supposed to write about something interesting that's happened to me lately. Well, I don't know if this will be interesting to anybody else, but the only thing I can think of is that 2 days ago, I broke up with my boyfriend (girlfriend). We've been going together since our junior year in high school and have been really close, and it's been great studying together. I thought he (she) felt the same, but things have changed. Now he

(she) wants to date other people. He (She) says he (she) still cares a lot about me, but he (she) doesn't want to be tied down to just one person. I've been real down. It's all I think about. My friends all tell me that I'll meet other guys (girls), and they say all I need is for something good to happen to cheer me up. I guess they're right, but so far that hasn't happened.

In addition, in the low-empathy condition, the instructions read "While you are reading the note, try to take an objective perspective toward what is described. Try not to get caught up in how the other person feels; just remain objective and detached." Participants in the high-empathy condition received the following instructions: "While you are reading the note, try to imagine how the other person feels about what is described. Try to imagine how it has affected his (her) life and how he (she) feels as a result." This procedure was similar to prior research to induce empathy (see Batson, 1991).

To control for possible gender effects, the experimenter handed over the message in such a way that women received a message from another woman and men received a message from a man (i.e., the text that was put into brackets). In the control condition, participants received no message.

Ten-Item Personality Inventory (TIPI). A Dutch version of the TIPI (Gosling, Rentfrow, & Swann, 2003) was used to assess the Big Five dimensions. Each dimension is assessed by means of two items, which are rated on a 7-point scale ranging from 1 (*disagree strongly*) to 7 (*agree strongly*). Despite its short length, the TIPI demonstrates remarkable reliability and validity.

Dependent measures. All questions were rated on a 7-point scale ranging from 1 (*not at all*) to 7 (*very much so*). Participants were asked how they felt in this situation using 21 emotion terms: *angry, hurt, irritated, sympathetic, elated, warm, annoyed, compassionate, fearful, frustrated, surprised, tenderhearted, satisfied, disappointed, relieved, indignant, happy, concerned, enraged, tender, and hostile*. About half of the emotions were primarily negative and about half were positive. Finally, participants were debriefed, paid, and thanked.

Analysis

To gain insight into how the emotional reactions were determined by the experimental conditions and by individual differences, we analyzed the 162 participants by the 21 emotion term data matrix D by means of a recently proposed dimension reduction technique, called MultiLevel Simultaneous Component analysis (MLSCA; Timmerman, 2006). In essence, MLSCA

separately models the between-condition variance of the data (i.e., the differences in the average emotion profiles of the six conditions) and the within-condition variance (i.e., the differences in the emotion profiles of the 162 participants once the condition averages have been subtracted). The magnitude of the between-condition and within-condition variance hereby gives an indication of the extent to which the differences in emotional experience are determined by the equality and empathy manipulations and by individual differences.

In particular, MLSCA splits the standardized data matrix D (i.e., analogously to the common procedures in ordinary PCA, the data are centered and standardized per emotion term over all 162 participants) into two matrices D^{between} (6 conditions by 21 emotions) and D^{within} (162 participants by 21 emotions), of which the elements are defined as follows

$$d_{ik}^{\text{between}} = \frac{\sum_{j=1}^{J_i} d_{jik}}{J_i} \quad (1)$$

$$d_{jik}^{\text{within}} = d_{jik} - d_{ik}^{\text{between}} \quad (2)$$

where i denotes the i th condition, j_i denotes the j th participant assigned to condition i , k denotes the k th emotion term, and J_i denotes the number of participants assigned to condition i . Subsequently, MLSCA performs a weighted PCA analysis on the average emotion profiles for the six conditions in D^{between} ; in this weighted PCA analysis, the average emotion profile of a condition is weighted by the number of participants in this condition. Moreover, a simultaneous component analysis (SCA; Timmerman & Kiers, 2003) is applied to the emotion profiles of the participants in D^{within} . The key idea of SCA is to decompose the data of each condition into a few components, which are equal across conditions. The common components ensure comparability. The amount of variance explained per component can be compared across conditions to assess the relative importance of this component. Furthermore, the variances of individual components provide a basis to compare the extent to which individual differences show up across conditions.

As such, MLSCA yields between-condition components that describe the between-condition differences in emotional reactions and within-condition components that describe the remaining differences in the emotion experience of the participants once the main effect of the condition has been removed. From the between-condition components and the associated component scores of the conditions, one can derive whether the manipulated characteristics of the conditions influenced emotional experience. The within-condition components and associated component scores of the participants

allow investigation of how the emotional reactions of the participants to the fairness situations differ from each other. Moreover, correlating these within-component scores to personality traits such as the TIPI measures, it is possible to shed light on how personality may shape the emotional reactions of persons to unfairness.

From the previous description of MLSCA, two advantages emerge over the traditional ANOVA or MANOVA approach to the data at hand. First, MLSCA reduces the 21 emotion terms to a few dimensions, which makes it possible to grasp in a parsimonious way how equality and empathy aspects of justice situations affect a rich variety of emotions. Second, MLSCA further analyzes the individual differences in the emotional reactions; that is, the deviations of the participants from the condition averages, which are disregarded as error in ANOVA.

Results

Before discussing the MLSCA results, it is important to note that more than 90% of the participants contributed at least their equal share. Specifically, 4, 4, 7, 103, 25, and 19 participants contributed 0, 1, 2, 3, 4, and 5 chips, respectively.

Fit Results and Selection of MLSCA Model

A first inspection of the data reveals that 24.8% of the total variance in the emotional experience data was determined by between-condition differences and 75.2% was determined by within-condition differences (and error variance). This suggests that both situational and person-bound factors influence the affective responses of persons. Subsequently, a summary description of these between-condition and within-condition differences in experienced emotions was obtained by fitting MLSCA models to the data with the number of between-condition components and the number of within-condition components both varying from 1 to 6. Regarding between-condition differences, Figure 1a displays the fit values (percentage of variance accounted for) for increasing numbers of between-condition components.

Applying a scree test suggests a two-component solution. This solution accounts for 97.6% of the between-condition variance in emotional experience, corresponding to 24.2% of the total variance in the data. Regarding within-condition differences, the fit results of the SCA analyses are plotted in

Figure 1. (a) Fit values (percentage of variance of between conditions differences accounted for) for different numbers of between-condition components; and (b) fit values (percentage of variance of within-condition differences accounted for) for different numbers of within-condition components.

Figure 1b.³ Applying a scree test to Figure 1b indicates the selection of a solution with two within-condition components, accounting for 52.1% of the within-condition variance in emotional experience, which corresponds to 39.2% of the total variance in the data.

Between-Condition Solution

The component loadings of the 21 emotion terms on the two between-condition components can be found in Table 1. All of the emotions with a positive valence loaded highly positively on the first component, while all of the emotions with a negative valence loaded highly negatively. The empathy-related emotions of compassion, tenderheartedness, and concern had a high positive loading on the second component. Therefore, we label these between-condition components as *Positive Versus Negative Emotions* and *Empathetic Emotions*, respectively.

³The reported SCA analyses are SCA-IND analyses; that is, SCA analyses that restrict the covariances between within-condition components to be equal to 0, but impose no constraints on the variances of the component scores per condition. These analyses performed about equally well as SCA analyses with less constraints (i.e., SCA-P, SCA-PF2), but clearly better than the SCA analysis with more constraints (i.e., SCA-ECP). We refer readers to Timmerman and Kiers (2003) for further details.

Table 1

Loadings of Emotion Terms on Between- and Within-Condition Components

Emotion term	Between-condition components		Within-condition components	
	Positive vs. negative	Empathetic	Negative	Positive
Angry	-.58	.04	.69	-.03
Hurt	-.43	.07	.64	.06
Irritated	-.63	-.03	.64	-.05
Sympathetic	.29	.19	-.01	.70
Elated	.63	-.07	-.18	.53
Warm	.51	.01	-.24	.63
Annoyed	-.59	-.00	.67	-.02
Compassionate	.04	.46	.11	.51
Fearful	-.16	.10	.27	.33
Frustrated	-.61	-.05	.68	-.05
Surprised	-.34	-.04	.51	.11
Tenderhearted	.14	.27	.17	.62
Satisfied	.63	-.05	-.40	.48
Disappointed	-.60	.10	.63	-.02
Relieved	.44	-.15	-.21	.59
Indignant	-.58	.04	.66	-.06
Happy	.58	-.05	-.27	.55
Concerned	.16	.31	.21	.53
Enraged	-.33	-.10	.61	.05
Tender	.33	.12	-.10	.69
Hostile	-.43	-.03	.67	.01

Note. Absolute values > .45 appear in boldface.

The component scores of the six conditions on the two between-condition components are shown in Figure 2. Additionally, Figure 2 gives bootstrapped 95% confidence intervals (CIs) around these component scores.⁴

⁴To compute 95% confidence intervals (CIs) around the between-condition component scores, 1,000 bootstrap datasets were generated by resampling with replacement from the 27 participants in each condition. Subsequently, these bootstrap datasets were analyzed with

Figure 2. Component scores of the conditions on the between-condition components: (a) positive versus negative; and (b) empathetic, with bootstrapped 95% confidence intervals.

First of all, Figure 2 indicates a main effect of the equality manipulation on the valence of the experienced emotions: Whereas participants in equal conditions report a positive affective reaction, those in unequal conditions report a negative one. Furthermore, there is a main effect of the empathy manipulation on whether or not participants feel empathy. The empathetic component scores of the high-empathy conditions are clearly higher than are those in the control conditions, with the scores of the low-empathy conditions being in between. Most importantly, the CIs in Figure 2 bear evidence of the presence of an interaction effect of the equality and empathy manipulations

MLSCA-IND in the same way as the original dataset, followed by an orthogonal procrustes rotation of the between-condition solution for the bootstrap data toward the between-condition solution for the original data. Finally, 95% CIs were calculated using the BCa method (Timmerman, Kiers, Smilde, Ceulemans, & Stouten, 2009).

on the valence of the experienced emotions. Whereas the presence of empathy has almost no effect on the valence of the affective reaction in the equal conditions, the presence of empathy reduces the negative affective reactions in the unequal conditions.

Within-Condition Solution

The component loadings of the emotion terms on the two within-condition components are presented in Table 1. The two components can be interpreted as negative emotions and positive emotions, as the first component is clearly characterized by high component loadings for emotions with a negative valence, whereas the other component is characterized by high component loadings for emotions with a positive valence.

With respect to the difference in interpretation of the between and within components, it is important to note that both sets of components are independent. The results suggest that when describing the interindividual differences within the conditions, positive and negative emotions are separate dimensions, implying that people may feel positive as well as negative at the same time. Summarizing the differences between conditions, however, positive and negative emotions form the poles of one dimension. This implies that for characterizing differences in generally perceived emotions across conditions, it is not useful to distinguish positive and negative emotions as separate dimensions.

The component scores of the participants on the two within-condition components are graphically represented in Figure 3, for each condition separately. From this figure, one may derive that there are clear differences in the variances of the negative component scores across the six conditions, as is also indicated by Levene's test for the homogeneity of the variances, $F = 9.41$, $p < .0001$. In particular, the variance of the negative component scores is larger in the unequal conditions, suggesting that inequality leaves more room for individual differences in negative emotions, as compared to equality. In contrast, the variances of the positive component scores do not differ significantly across the six conditions, $F = 1.46$, *ns*.

We further investigated whether these obtained individual differences in emotional reactions are related to individual differences in the Big Five personality traits. Specifically, correlating the within-component scores of the participants to their scores on the TIPI measures (see Table 2) reveals that Conscientiousness was negatively related to the negative emotions component scores: the higher the level of Conscientiousness, the less the negative emotions emerged.

Figure 3. Participants' component scores on the within-condition components of negative emotions and positive emotions for each condition separately.

Table 2

Correlations Across All Conditions Between the Within-Condition Components and the Big Five

Within-condition component	Big Five				
	N	E	O	A	C
Negative	-.00	-.03	.06	-.03	-.20*
Positive	.12	.07	.09	-.05	-.06

Note. N = Neuroticism; E = Extraversion; O = Openness; A = Agreeableness; C = Conscientiousness.

* $p < .05$.

Discussion

Receiving unequal pay for equal effort is often perceived as unfair and leads to strong emotional reactions (Deutsch, 1975; Weiss & Cropanzano,

1996). Yet, if another person were in need, would the other person still be held against the equality rule, or would that person be held against the need rule? The present research addressed this in seeing how another person in need would affect group members' emotional reactions in a situation in which equality in social dilemmas was violated (hence, personal interests would be harmed). Previous research has shown that such an equality violation is perceived as unfair and elicits strong negative emotions (Stouten et al., 2005, 2006). The present research specifically examined how another group member who was in social need influenced one's emotional reactions, even though one's personal interest would be harmed. Moreover, we addressed the role of individual differences in people's emotional reactions on equality violations and perceptions of need.

The present research showed that if one received equal rewards with another person, one generally felt positive about this. This result is in line with previous research showing that in such social dilemma situations, people wish to be equally rewarded for equal investments (Deutsch, 1975; Stouten et al., 2005; Van Dijk & Wilke, 1995). In contrast, if people received unequal rewards for equal investments, this resulted in negative emotions. The present research showed that if the other person were in need, this reduced one's negative emotional reactions. In addition, the present study showed that one's negative emotions were mostly reduced if the other person were in need and one actively adopted the perspective of the other. That is, negative emotions were stronger if the person expressed only a need, but no perspective was adopted. Finally, negative emotions were shown to be strongest if no need information was available.

These results show that if the other person were in need, and one tried to place oneself in the position of the other—that is, how the other would feel—negative emotions were reduced in a situation in which one was unequally rewarded. Hence, if there is a conflict of interest between all parties and one is disadvantaged as a result of another person's decision, people feel negative about this. However, if the person who was advantaged is known to be in need, people feel less negative about the event. This supports the argument that people hold the other person against a coordination rule of need, rather than against a rule of equality (which would imply that people would have reacted negatively, irrespective of the other's need). This finding seems to suggest that people felt sorry for the other person, and the fact that he or she earned more from the collective investments might be seen as fair, and the other may have been perceived as deserving. Results showing that more empathetic feelings emerged if the other were in need seem to support such an argument.

These findings align with social psychological research showing that if another person is in need and the observer takes the perspective of this

person, feelings of empathy emerge (Batson et al., 1991). Feelings of empathy have been shown to make people more prosocial and cooperative in a social dilemma game (Batson et al., 1995), even if the other party defected (Batson & Ahmad, 2001). The present research adds to this by showing that if the fairness rule equality of rewards is violated, empathy also influences people's emotional reactions.

The results show that although fairness was violated, the fact that the other person was in need reduced the severity of the situation. In addition, it could be shown that both positive and negative emotions matter for people's reactions, as well as empathetic emotions. Our findings also point out that although people draw on an equality rule in such a mixed-motive situation, if the other person is in need, they seem to focus more on a need rule instead (cf. Deutsch, 1975). Hence, even if people are disadvantaged and their personal interest is harmed, if another person is in need, this may reduce their negative feelings about the situation. Therefore, rather than directing their negative emotions at the experimenter or the distribution procedure and empathetic feelings at the other group member, the present research shows that participants directed both negative and empathetic feelings at the other member.

Because negative feelings decrease as empathetic feelings increase, this provides some first evidence for the notion that the other person is blamed for the perceived inequality, although this member did not cause the inequality (but only benefited from it). Yet, future research is needed to address whether there are differential emotional reactions if the other group member or someone else is responsible for the equality violation. A limitation of the present research is that although it appears that experienced emotions were directed at the other person, the dependent variables only measured how people felt. Assessing how people feel with regard to a specific person might give us a more detailed look at who is the perceived harmdoer.

The present research adds to the literature on need and perspective taking by showing that if another person is in need, people generally are inclined to feel more empathetic and less negative, especially if they are unequally advantaged. More so, perspective taking had an additional impact on empathetic and negative emotions, as people were even less negative and more empathetic if the other were in need and they were asked to take a perspective. Hence, people are sensitive to another person in need, even though they lost financial outcomes. This finding is in agreement with research by Batson et al. (1991, 1995), who suggested that need and perspective taking elicit altruistic behavior.

The present research adds to this by showing that in highly interdependent situations, people's emotional expressions are influenced by another person in need. In fact, to date, very little research has focused on the issue of coordination rules, such as equality in social dilemmas and people's

emotional reactions. Additionally, social dilemma research has paid little attention to emotions—and anger in particular—despite the fact that recent literature has specifically outlined the importance of emotions in decision making (Hertel, 1999; Knapp & Clark, 1991; Loewenstein & Lerner, 2002).

Interestingly, even if the need of the other person was unrelated to the social dilemma, participants were still influenced by this. This shows that in these mixed-motive situations, people tend to take into account information that goes beyond the dilemma context (e.g., personal need information). This adds to research on allocation rules (Deutsch, 1975) by showing that need information must not necessarily be related to the dilemma context. People seem to be willing to endorse the need rule, even if the need would be unrelated to the dilemma situation.

In addition, the present research showed that individual differences exist in emotional reactions to justice situations. The results clearly show that individual differences specifically emerged in the unequal outcomes condition. This is not surprising, as it has been argued recently that individual differences play a role mainly in situations that are characterized by uncertainty and in which people have no clear guideline as to how to react (Snyder & Ickes, 1985). For example, research has shown that if uncertainty increases, individual differences predict how people will react in such a situation (e.g., De Kwaadsteniet et al., 2006). The present research adds to this by showing that if unequal outcomes emerge, people rely on their individual characteristics for their emotional reactions.

More specifically, relating the obtained individual differences in emotional reactions to the Five-Factor model shows that the differences in negative emotions were inversely related to Conscientiousness. Hence, people high in Conscientiousness may be more focused on rule following (as part of morality characteristics) and are more inclined to accept the decision of a hierarchically higher person. Indeed, Conscientiousness has been shown to be specifically related to issues of fairness and morality (Colquitt et al., 2006), as well as cooperation (Van Hiel et al., 2008). Conscientiousness is also related to a person's hard work and motivation in the pursuit of goal accomplishments (Barrick & Mount, 1991) and is linked to the motivation to achieve (Mount & Barrick, 1995). This seems to suggest that because of its underlying characteristics, especially low Conscientious people were found to react negatively. Yet, a limitation of this study is that it could only speculate about the exact processes of the pattern of Conscientiousness and did not address this directly. Future research is needed to address what the underlying processes are that specifically drive the results for Conscientiousness.

The present research argued and demonstrated that individual differences in response to injustice and need are important. The results discussed previously show that taking into account individual differences is important for

creating a more complete picture of how people react in a situation in which fairness is violated. Research has convincingly demonstrated that people differ in how they perceive situations and in the emotional reactions that follow from these perceptions (e.g., Brief, Burke, George, Robinson, & Webster, 1988; Cropanzano, James, & Citera, 1993; George, 1990). Moreover, people's reactions are often dependent on the combined result of individual differences and the situation with which they are confronted (Skarlicki et al., 1999; Van Lange, De Cremer, Van Dijk, & Van Vugt, 2007). The present research was able to show that individual differences are indeed important to describe people's negative and positive emotional reactions to violations of equality in rewards, depending on whether the other person was in need and the perspective taken. Taking into account personality influences may actually improve one's understanding of the functioning of small workgroups.

A better understanding of how certain people will react (emotionally and behaviorally) in a certain situation is essential for a conception of social interactions. That is, individuals may differ greatly in the extent to which their affective reactions are aroused, depending on the specific circumstances of the situation, as can be seen from the present results. However, more research is needed to clarify why such individual differences occur with respect to equality and empathy situations. The present research contributes by showing that individual differences matter, but the precise processes that drive these reactions could not be identified. Nevertheless, the present study's main goal was to address whether individual differences exist in the emotional reactions to such equality and empathy situations. Future research is needed to identify what the exact processes are that could explain these findings.

Another strength of the current research is that using the MLSCA technique, rather than the more conventional method of ANOVA, enabled us to more thoroughly examine our research questions (also see Van Mechelen & Schepers, 2007). In particular, by using MLSCA analysis, it was possible to take all emotions into account simultaneously. In addition, MLSCA also provided the opportunity to look at the impact of individual differences, whereas such individual differences would be regarded as error in more common analyses (e.g., ANOVA).

To conclude, if people receive unequal rewards, even though their efforts were equal relative to another person, this elicits negative emotional reactions. However, perceptions of need and perspective taking can reduce such emotional reactions and can induce empathetic emotions, even if the need information was unrelated to the distribution context. In addition, people differ considerably in their emotional reactions to justice situations, especially if equality is violated. Hence, both individual differences and need

information pull people's attention from the harm that their personal interests suffered and create tolerance for fairness violations.

References

- Adams, J. S. (1965). Inequity in social exchange. In L. Berkowitz (Ed.), *Advances in experimental social psychology* (Vol. 2, pp. 267–299). New York: Academic Press.
- Aquino, K., Lewis, M. U., & Bradfield, M. (1999). Justice constructs, negative affectivity, and employee deviance: A proposed model and empirical test. *Journal of Organizational Behavior*, 20, 1073–1091.
- Averill, J. R. (1983). Studies on anger and aggression: Implications for theories of emotion. *American Psychologist*, 38, 1145–1160.
- Baron, R. A., & Byrne, D. (2000). *Social psychology* (9th ed.). Boston: Allyn & Bacon.
- Barrick, M. R., & Mount, M. K. (1991). The Big Five personality dimensions and job performance: A meta-analysis. *Personnel Psychology*, 44, 1–26.
- Batson, C. D. (1991). *The altruism question: Toward a social-psychological answer*. Hillsdale, NJ: Lawrence Erlbaum.
- Batson, C. D., & Ahmad, N. (2001). Empathy-induced altruism in a prisoner's dilemma: II. What if the target of empathy has defected? *European Journal of Social Psychology*, 31, 25–36.
- Batson, C. D., Batson, J. G., Slingsby, J. K., Harrell, K. L., Peekna, H. M., & Todd, R. M. (1991). Empathic joy and the empathic-altruism hypothesis. *Journal of Personality and Social Psychology*, 61, 413–426.
- Batson, C. D., Batson, J. G., Todd, R. M., Brummett, B. H., Shaw, L. L., & Aldeguer, C. M. R. (1995). Empathy and the collective good: Caring for one of the others in a social dilemma. *Journal of Personality and Social Psychology*, 68, 619–631.
- Batson, C. D., Chang, J., Orr, R., & Rowland, J. (2002). Empathy, attitudes, and action: Can feeling for a member of a stigmatized group motivate one to help the group? *Personality and Social Psychology Bulletin*, 28, 1656–1666.
- Biel, A., Eek, D., & Gärling, T. (1999). The importance of fairness for cooperation public-goods dilemmas. In P. Juslin & H. Montgomery (Eds.), *Judgment and decision making: Neo Brunswikian and process tracing approaches* (pp. 245–259). Mahwah, NJ: Lawrence Erlbaum.
- Brief, A. P., Burke, M. J., George, J. M., Robinson, B., & Webster, J. (1988). Should negative affectivity remain an unmeasured variable in the study of job stress? *Journal of Applied Psychology*, 73, 193–198.

- Brothers, L. (1990). The neural basis of primate social communication. *Motivation and Emotion*, 14, 81–91.
- Cialdini, R., Schaller, M., Houlihan, D., Arps, K., Fultz, J., & Beaman, A. (1987). Empathy-based helping: Is it selflessly or selfishly motivated? *Journal of Personality and Social Psychology*, 52, 749–758.
- Colquitt, J. A., Scott, B. A., Judge, T. A., & Shaw, J. C. (2006). Justice and personality: Using integrative theories to derive moderators of justice effects. *Organizational Behavior and Human Decision Processes*, 100, 110–127.
- Cropanzano, R., James, K., & Citera, M. A. (1993). A goal hierarchy model of personality, motivation, and leadership. In L. L. Cummings & B. M. Staw (Eds.), *Research in organizational behavior* (Vol. 15, pp. 267–322). Greenwich, CT: JAI Press.
- De Kwaadsteniet, E. W., Van Dijk, E., Wit, A., & De Cremer, D. (2006). Social dilemmas as strong versus weak situations: Social value orientations and tacit coordination under resource uncertainty. *Journal of Experimental Social Psychology*, 42, 509–516.
- Deutsch, M. (1975). Equity, equality, and need: What determines which value will be used as the basis of distributive justice? *Journal of Social Issues*, 31, 137–149.
- Edney, J. J. (1980). The commons problem: Alternative perspectives. *American Psychologist*, 35, 131–150.
- Eisenberg, N., & Miller, P. (1987). Empathy and prosocial behavior. *Psychological Bulletin*, 101, 91–119.
- Frijda, N. H. (1986). *The emotions*. Cambridge, UK: Cambridge University Press.
- George, J. M. (1990). Personality, affect, and behavior in groups. *Journal of Applied Psychology*, 75, 107–116.
- Gosling, S. D., Rentfrow, P. J., & Swann, W. B., Jr. (2003). A very brief measure of the Big Five Personality domains. *Journal of Research in Personality*, 37, 504–528.
- Hertel, G. (1999). Mood effects in social dilemmas: What we know so far. In M. Foddy & M. Smithson (Eds.), *Resolving social dilemmas: Dynamic, structural, and intergroup aspects* (pp. 227–243). Philadelphia: Taylor & Francis.
- Knapp, A., & Clark, M. S. (1991). Some detrimental effects of negative mood on individuals' ability to solve resource dilemmas. *Personality and Social Psychology Bulletin*, 17, 678–688.
- Komorita, S. S., & Parks, C. D. (1994). *Social dilemmas*. Dubuque, IA: Brown & Benchmark.

- Leventhal, G. S., Karuza, J., Jr., & Fry, W. R. (1980). Beyond fairness: A theory of allocation preferences. In G. Mikula (Ed.), *Justice and social interaction* (pp. 167–218). New York: Springer-Verlag.
- Loewenstein, G. F., & Lerner, J. S. (2002). The role of affect in decision making. In R. J. Davidson, K. R. Scherer, & H. H. Goldsmith (Eds.), *The handbook of affective sciences* (pp. 619–642). Oxford, UK: Oxford University Press.
- Mikula, G., Scherer, K. R., & Athenstaedt, U. (1998). The role of injustice in the elicitation of differential emotional reactions. *Personality and Social Psychology Bulletin*, 24, 769–783.
- Mitchell, G., Tetlock, P. E., Mellers, B. A., & Ordóñez, L. D. (1993). Judgments of social justice: Compromises between equality and efficiency. *Journal of Personality and Social Psychology*, 65, 629–639.
- Mount, K. L., & Barrick, M. R. (1995). The Big Five personality dimensions: Implications for research and practice in human resource management. In G. R. Ferris (Ed.), *Research in personnel and human resource management* (Vol. 13, pp. 153–200). Greenwich, CT: JAI Press.
- Preston, S. D., & De Waal, F. B. M. (2002). Empathy: Its ultimate and proximate bases. *Behavioral and Brain Sciences*, 25, 1–20.
- Roseman, I. J., & Smith, C. A. (2001). Appraisal theory: Overview, assumptions, varieties, controversies. In K. R. Scherer, A. Schorr, & T. Johnstone (Eds.), *Appraisal processes in emotion: Theory, methods, research* (pp. 3–19). New York: Oxford University Press.
- Sagi, A., & Hoffman, M. L. (1976). Empathic distress in the newborn. *Developmental Psychology*, 12, 175–176.
- Schmitt, M., Eid, M., & Maes, J. (2003). Synergistic Person $\times$ Situation interaction in distributive justice behavior. *Personality and Social Psychology Bulletin*, 29, 141–147.
- Schmitt, M., & Sabbagh, C. (2004). Synergistic Person $\times$ Situation interaction in distributive justice judgment and allocation behavior. *Personality and Individual Differences*, 37, 359–371.
- Shaver, K. G. (1985). The attribution of blame: Causality, responsibility, and blameworthiness. New York: Springer-Verlag.
- Skarlicki, D. P., Folger, R., & Tesluk, P. (1999). Personality as a moderator in the relationship between fairness and retaliation. *Academy of Management Review*, 24, 100–108.
- Smith, C. A., & Ellsworth, P. C. (1985). Patterns of cognitive appraisal in emotion. *Journal of Personality and Social Psychology*, 48, 813–838.
- Snyder, M., & Ickes, W. (1985). Personality and social behavior. In G. Lindzey & E. Aronson (Eds.), *Handbook of social psychology* (3rd ed., pp. 883–948). Reading, MA: Addison-Wesley.

- Stouten, J., De Cremer, D., & Van Dijk, E. (2005). All is well that ends well, at least for proselves: Emotional reactions to equality violation as a function of social value orientation. *European Journal of Social Psychology*, 35, 767–783.
- Stouten, J., De Cremer, D., & Van Dijk, E. (2006). Violating equality in social dilemmas: Emotional and retributive reactions as a function of trust, attribution, and sincerity. *Personality and Social Psychology Bulletin*, 32, 894–906.
- Timmerman, M. E. (2006). Multilevel component analysis. *British Journal of Mathematical and Statistical Psychology*, 59, 301–320.
- Timmerman, M. E., & Kiers, H. A. L. (2003). Four simultaneous component models for the analysis of multivariate time series from more than one subject to model intraindividual and interindividual differences. *Psychometrika*, 68, 105–121.
- Timmerman, M. E., Kiers, H. A. L., Smilde, A. K., Ceulemans, E., & Stouten, J. (2009). Bootstrap confidence intervals in multi-level simultaneous component analysis. *British Journal of Mathematical and Statistical Psychology*, 62, 299–318.
- Van Dijk, E., & Wilke, H. (1995). Coordination rules in asymmetric social dilemmas: A comparison between public good dilemmas and resource dilemmas. *Journal of Experimental Social Psychology*, 31, 1–27.
- Van Dijk, E., & Wilke, H. (2000). Decision-induced focusing in social dilemmas: Give-some, keep-some, take-some, and leave-some dilemmas. *Journal of Personality and Social Psychology*, 78, 92–104.
- Van Hiel, A., De Cremer, D., & Stouten, J. (2008). The personality basis of justice: The Five-Factor model as an integrative model of personality and procedural fairness effects on cooperation. *European Journal of Personality*, 22, 519–539.
- Van Lange, P. A. M., De Cremer, D., Van Dijk, E., & Van Vugt, M. (2007). Self-interest and beyond: Basic principles of social interaction. In E. T. Higgins & A. W. Kruglanski (Eds.), *Social psychology: Handbook of basic principles* (pp. 540–561). New York: Guilford.
- Van Mechelen, I., & Schepers, J. (2007). A unifying model involving a categorical and/or dimensional reduction for multimode data. *Computational Statistics and Data Analysis*, 52, 537–549.
- Van Vugt, M., Snyder, M., Tyler, T. R., & Biel, A. (2000). *Cooperation in modern society: Dilemmas and solutions*. London: Routledge.
- Weiss, H. M., & Cropanzano, R. (1996). Affective events theory: A theoretical discussion of the structure, causes, and consequences of affective experiences at work. In B. M. Staw & L. L. Cummings (Eds.), *Research in organizational behavior: An annual series of analytical essays and critical reviews* (Vol. 18, pp. 1–74). Greenwich, CT: JAI Press.

- Weiss, H. M., Suckow, K., & Cropanzano, R. (1999). Effects of justice conditions on discrete emotions. *Journal of Applied Psychology*, 84, 786–794.
- Wiggins, J. S., & Trapnell, P. D. (1997). Personality structure: The return of the Big Five. In R. Hogan, J. Johnson, & S. Briggs (Eds.), *Handbook of personality psychology* (pp. 737–765). San Diego, CA: Academic Press.