

The Effects of Empathy and Perspective-Taking on Trust Decisions

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Abstract

Trust is a necessity in every day live and affected by various features of the trust interaction. The current study investigates the effect of empathy and perspective-taking on trust decisions via a trust game (experiment 1) and an investment game (experiment 2). The effects of empathy and perspective-taking were not tested prior to the present research. Therefore, the main research subject concerns the effect of empathy and perspective-taking on trust, but exploratory detours are taken to identify conceivable causes that drive these effects. Two experiments tested the effects of empathy and perspective-taking on trust and found mixed-results. Experiment 1 found that empathy leads to an increase in trust and that perspective-taking can lead to both an increase and decrease in trust based on the tendency to feel affiliated. Experiment 2 was incapable of replicating these results in an investment game, but contributed to the research by investigating who is preferred when playing the investment game; male or female trustees. Results suggested that women prefer female trustees, but men do not have a preference.

The Effects of Empathy and Perspective-Taking on Trust Decisions

Almost everybody can think of a situation where a bullying child is asked to imagine how they are making their victim feel. Likewise, we can probably think of a conflict situation in which we were advised to try and see the others point of view. Employees receive identical instructions when they are settling an agreement with a competing party and for a good reason. People tend to not consider another's view when making a trust or cooperation decision, while taking the other's view should improve decision making (Malhotra, 2004; Evans & Krueger, 2011). Research has suggested that taking another's perspective enhances conflict resolutions (Paese & Yonker, 2001) and improves negotiation results by uncovering hidden agreements and avoiding impasses (Galinsky et al., 2008; Trötschel et al., 2011). In this research we will explore if this assumption is true for trust. So, does taking the viewpoint of the other party improve trust decisions? And when is it smarter to use your brain (perspective-taking) and when is it smarter to use your feelings (empathy) to reach an improvement of trust?

No prior research has addressed the question if empathy and perspective-taking effect trust decisions, but prior research has suggested that empathy and perspective-taking effect a variety of other social interactions. Due to the relative novelty of the topic, the current research will contain both hypothesised and exploratory elements.

In the following sections of the introduction, we will first discuss the meaning of trust, the measurement of trust and when we trust. Secondly, we will discuss the fault of not considering the other party in decision making and the expected effect of empathizing and perspective-taking.

Trust and the trust game

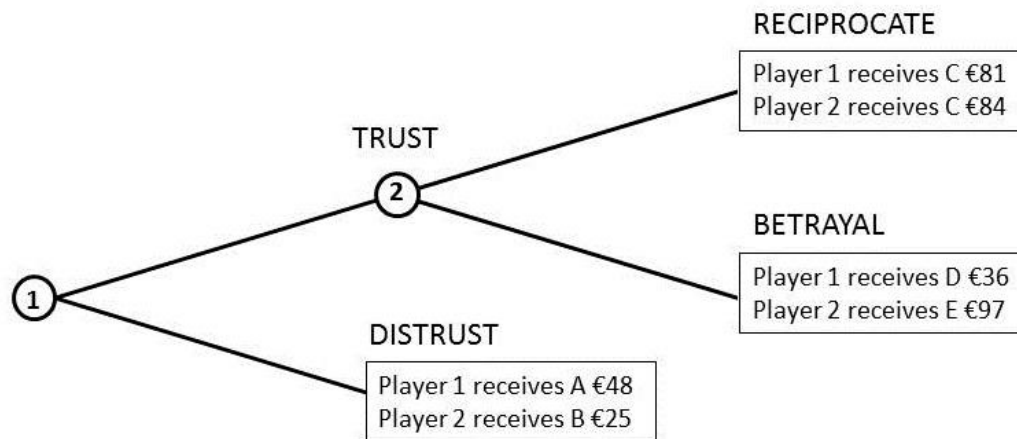
Trust is considered an important contributor of cooperation (Parks, 1994) and a necessity in everyday life. The short-lived relationship of buyer and seller is based on trust. For example, when buying a product in an online webshop, you trust that the distributor transfers your product with care. Or, when you are trying out the newest tablets in a tech store the personnel trusts that you handle their product with discretion. We trust others in order to obtain goods or services we cannot provide ourselves. People need trust. Therefore, trust is a well-covered topic in psychological literature.

Trust has been defined across different fields of science and is at times perceived as too chaotic and untestable, because the definition of trust lacks clarity (Mayer, Davis & Schoorman, 1995). Nonetheless, two consistent factors are found in all definitions; a willingness to be vulnerable or to take risk. In the present research trust is defined as a willingness to be vulnerable to exploitation with the expectation of a benefit (Rosseau et al., 1998) and measured by the trust game.

The most prominently used tool to measure trust is the trust game. It is most frequently used by both psychologists and economists (Evans & Krueger, 2009). The trust game is played by two players and is illustrated in figure 1. Player 1, the so-called trustor, will first decide to trust or distrust. Deciding to distrust finishes the game and both players receive their monetary endowment ($A > B$). If Player 1 decides to trust, Player 2 (trustee) has to decide to reciprocate or betray Player 1. Reciprocating will give both players a fairly equal amount of money (C), but betrayal will benefit Player 2 ($E > D$). In the trust game the value of payoff is ordered as $E > A > C > B > D$. The present research focuses on the role of the trustors and their trust decisions.

Figure 1

Visualization of the Trust Game



The trust game paradigm is primarily used by researchers since it creates an extreme trust situation. The sequential and anonymous format cause all decisions to be based on expected motives and incentives. In this way trust decisions cannot be explained by expected capabilities of the other player, since no information concerning capabilities are included in the game.

Egocentric views and trust dilemmas

The body of research concerning determinants of trust has developed various theories. Game theory predicts that in the trust game paradigm endowments will not be shared based on the selfishness and pure rationality assumption. Both trustee and trustor are self-interested and focused on pay-off. The trustee will keep all the received money and the rational trustor will anticipate the behavior and not send money (von Neumann & Morgenstern, 1947). However, people playing the game do trust each other. Trust only seems to happen under certain circumstances. The question that emerges is: When do people decide to trust? What conditions are needed in order to trust one another?

The definition of trust, as formulated by Rousseau (1998), states that the expectation to reciprocate and risk are large contributors to trust. A large body of research supports this

definition and prove that people trust only when they expect others to reciprocate (Gneezy, Guth & Keren, 2000; Snijders & Keren, 1999). Other scientists debate that the effect of expectation is not as large as psychological research might depict. For example, Dunning et al. (2011) found that people only trust when the expectation to reciprocity meets or exceeds their level of risk. Thus, people trusted more than their expectation thresholds predicted. However, in this experiment 35% would still decide to trust someone even when the expectation of reciprocity suggest not to. Based on these findings, one can suggest that expectations have an effect on trust, but it remains unclear to what extent.

The willingness to take risks is a major contributor to trust, but only for trustors. Research suggests that when risk increases, trust decreases (Evans & Krueger, 2011; Malhotra, 2011). Also, the trustees trust decisions are not sensitive to risk, but are depended of the benefit provided by the trustor, the level of fairness and the temptation to defect (Malhotra, 2011; Falk & Fishbacher, 2006; Snijder & Keren, 1999). Temptation to defect, or betray, is defined by the difference in pay-off between betrayal and reciprocity. The temptation to defect increases when the pay-off for betrayal is significantly beneficial compared to the pay-off for reciprocity for the trustee. Evans & Krueger (2011) showed that trustors do not review the temptation to defect when their risk is high, but base their decision to trust on their risk alone. Trustors only review the level of temptation if risk does not surpass a certain threshold and decide to trust when the temptation to defect is high. Trustors should exclude themselves from their egocentric views and consider taking the perspective of the trustee in the high risk games then they recognize that the probability of betrayal is minimal.

Unfortunately we regularly fail to exclude ourselves from our own perspectives, since we find it easier to review information that is relevant to ourselves. Gilovich et al. (1999) state that

egocentrism makes it difficult to remove oneself from our own view. We rather focus on information that is salient and simple to process and usually that is information relevant to ourselves (Hastie & Dawes, 2010; Alicke et al., 2005). Egocentric views have proven to carry detrimental consequences in trust. Perspective-taking would be beneficial for both parties, since trust (and reciprocity) would benefit equity. These findings suggest that trust decisions should improve if trustors consider the view of the trustee.

The present research tests if taking the perspective of the trustee improves trust decisions. Does trust increase when we take the trustee's perspective? People can use different tactics of taking another person's view such as perspective-taking and empathy. Empathy is an instant affective reaction and can increase prosocial behavior, while perspective-taking is a cognitive capacity and does not necessarily increase prosocial behavior (Davis, 1985). Perspective-taking and empathy can co-occur and are both often used interchangeably. However, in the present research the effects of both empathy and perspective-taking on trust will be tested separately. Previous research states that empathy and perspective-taking lead to different outcomes over varying interactions (Coke, Batson & McDavis, 1978). Therefore, we expect both to have an effect on trust decisions, however based on previous research we suspect differing results.

Empathy and trust

Empathy is an instant emotional response often experienced when observing suffering. In an experimental setting, empathy can be elicited via different approaches. For example, one approach contains asking the participants to imagine how they would feel if they themselves were in a certain situation. This approach will not only elicit empathy, but will also elicit distress. However, for our research we want to purely elicit empathy, since distress is believed to evoke egoistic motivations (Batson, Early & Salvarani, 1997). Therefore, we will ask participants to

consider how another person would feel in a certain event. This type of perspective-taking will most likely lead to empathy, which in turn will increase prosocial behavior and cooperation (Batson, Early & Salvarani, 1997). Moreover, the studies by Cohen (2009) demonstrated that empathy led to a decrease in unethical bargaining, such as lying and bribing. In a prisoner's dilemma it is wisest to refrain from cooperation, since defecting is always more beneficial. In a study, evoking empathy in female respondents led to an increase in cooperation (Batson & Moran, 1998). Furthermore, in negotiations empathizing individuals became more prosocial to such a degree that they compensated to get a deal at the cost of their own benefit (Galinsky et al., 2008). Thus, empathy leads to prosocial behavior in various situations and sometimes even at the cost of the self. We suspect that the same prosocial behavior will occur in trust interactions. Therefore we hypothesize that empathy will lead to an increase in trust. Hypothesis 1: When people empathize they are more likely to trust.

Perspective-taking and trust

Empathy is an affective response. Perspective-taking on the other hand is a cognitive capacity. Empathy is the act of consciously taking the viewpoint of others in order to anticipate behavior and reactions of others (Davis, 1983), whereas perspective-taking does not lead to an increase in prosocial behavior and can even be used against others. For example, in a chess game, players try to uncover their opponents moves and use this knowledge against them. In such a situation perspective-taking may not lead to an increase in prosocial behavior, but there is reason to believe that perspective-taking will lead to an increase in trust since it leads to improved strategic decisions. Research indicates that perspective-taking decreases egocentric biases and is considered a big contributor to conflict resolution (Epley, Caruso & Bazerman, 2006; Paese &

Yonker, 2001). Additionally, in a study conducted by Galinsky et al. (2008) perspective-taking participants were more likely to find a win-win agreement in negotiation. Perspective-taking turned out to be a creative tool for negotiations, because it enables people to balance cooperation and competition leading to a situation where both parties increased their endowment. We expect that a similar situation can occur in the trust game. Based on these expectations and the findings by Evans & Krueger (2011), we hypothesize that perspective-taking will increase trust.

As the literature on perspective-taking is quite divergent, we also explore the opposite. To be precise, based on the findings by Epley et al. (2006) we will also hypothesize that perspective-taking will decrease trust. In their research Epley et al. (2006) argue that taking the perspective of others decreases egocentric biases, but it increases egocentric behavior due to reactive egoism. Reactive egoism states that people only react egocentrically, because egocentric behavior from others is anticipated. In other words, perspective-taking triggers reactive egoism by activating our cynical views of others. That we have cynical views of others was proven by a study of Fetchenhauer and Dunning (2009). In their study 80% of the trustees guaranteed that they would reciprocate if they were trusted, but only 45% of the trustors expected them to reciprocate. Cynical views are caused by both asymmetric feedback in trust interactions and naïve cynicism. First, in a trust situation a trustor is informed when they decide to trust and the trustee breaks their trust. However, when a trustor decides not to trust they will not be informed of the trustee decision. In this scenario, the trustor does not receive feedback if the trustee decides to reciprocate. Asymmetric feedback creates the illusion that distrust seems more likely to happen. The second cause is naïve cynicism, our tendency to believe that we deserve more than is possible (Ross & Sicoly, 1979), is caused by our tendency to interpret information in a self-serving manner. We tend to find more information supporting our own cause than

contradicting information (self-serving bias) and the information we find seems more important when it supports rather than contradicts our cause (Miller & Ross, 1975; Thompson & Loewenstein, 1992). Based on these findings we hypothesize that perspective-taking leads to a decrease in trust, because when we are perspective-taking we are most likely to focus on negative factors decreasing the willingness to trust.

Based on presented previous research by Evans & Krueger (2011) and Epley et al. (2006) we have to hypothesize that perspective-taking may lead to both an increase and decrease in trust. Hypothesis 2: When perspective-taking the decision to trust can both increase and decrease.

Based on the findings by de Bruine (2005), similarities in appearance enhance perceptions of trustworthiness of the other person, we hypothesize that closeness determines the direction of the effect of perspective-taking on trust. When closeness is high perspective-taking will increase trust. On the contrary, perspective-taking will decrease trust when closeness is low. Closeness can be described as the degree of affiliation felt between parties. The self-expansion theory states that close interpersonal relations can be described as including another in the self. People seem visualize an overlapping in life space when they feel closely affiliated (Aron, Aron, Smollan, 1992). Feeling affiliated can either be defined by the type of relation and as a competence. Meaning, closeness can vary across individuals. In the present research we will test if the degree of closeness explains the double sided relationship between perspective-taking and trust.

In general, closeness should lead to an increase in trust. Moreover, if the effect of perspective-taking on trust is determined by the activation of cynical views, then an affiliated trustor should activate less or no cynical views and focus on positive views. In turn these positive views should make the trustor more trusting. On the other hand, if the trustor does not feel

affiliate, perspective-taking should again activate cynical views leading to a decrease in trust. In other words, the direction of effect by perspective-taking on trust should be enforced by closeness.

Hypothesis 3: The effect of perspective-taking on trust depends on the affiliation felt towards the trustee. Perspective-taking leads to an increase in trust when affiliation is high and to a decrease when affiliation is low.

Present Research

In sum, the current research examines the effect of mindsets on trust decisions. First, it is hypothesized that empathy will lead to an increase in trust. Secondly, it is hypothesized that perspective-taking can lead to both an increase and decrease on trust and the final hypothesis states that the direction of this effect is decided by the affiliation felt. Furthermore, due to the exploratory setting of the current research we will also conduct measurements concerning the expectation to reciprocate. These additional measurements can be used as an insight to determine the cause of the different effects of empathy and perspective-taking.

In order to test our hypotheses, two experiments were conducted. The first experiment used a trust game to measure the differing effects mindset (perspective-taking and empathy) on trust decisions. The second experiment measures trust via an investment game to check for possible robustness and to strengthen the findings of experiment 1.

Experiment 1

Experiment 1 explores the relationship between mindset (empathy and perspective taking) and trust decisions. The hypotheses are tested by multiple trust games in which all participants partook as trustors. Experiment 1 concerned a between subjects design in which the independent variable mindset was represented by three conditions; empathy, perspective-taking and a control

condition. The dependent variable trust was calculated by the amount of times a participant decided to trust the trustee across all games.

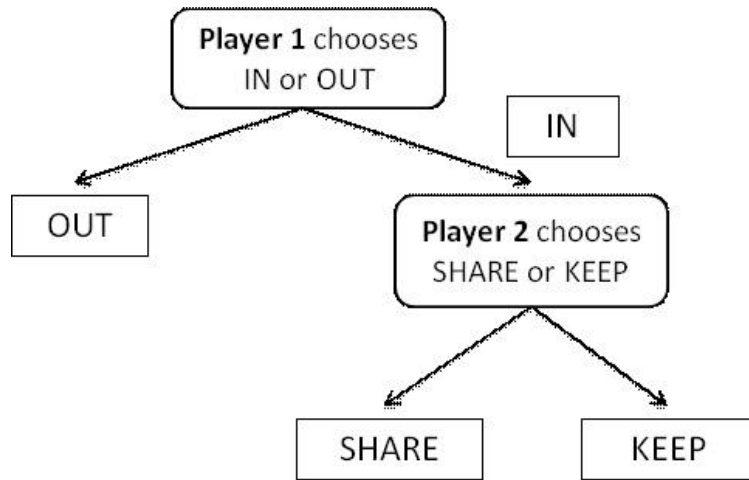
Method

participants. The experiment was administrated via an online survey. All participants were recruited within our social circle via social media (Facebook). Participants were excluded from analysis if they did not complete all questions in a section of the survey (trust games $N = 171$, expectation $N = 161$). After removing the dropouts, 171 participants remained for analyses. All participants were Dutch native speakers of which fifty-two percent was male and an average age of 25, $SD = 5.1$.

procedure. All participants were informed that they would be playing all 12 rounds of the trust game as trustor (Player 1) and every game would be played with the same trustee (Player 2). The trust game instructions were illustrated by a visual scheme as provided in figure 1. The participants were informed that the objective of the trustor is to make a decision to either play the game (IN) or to not play (OUT). Deciding not to play the game would finish the game. However, if they decided to play, the trustee would subsequently decide to KEEP or to SHARE the money with the participant. The participants did not receive feedback on the results or decisions made in the game. Next, all participants were forced to answer three questions concerning trust game situations (If Player 1 chooses OUT, how much money will Player 1 and Player 2 receive? If Player 1 chooses IN, and Player 2 chooses SHARE, how much money will Player 1 and Player 2 receive? If Player 1 chooses IN, and Player 2 chooses KEEP, how much money will Player 1 and Player 2 receive?) to estimate if they understood the trust game and the consequences of the decisions made. Words that could expose the true nature of our study, such as trust and game, were avoided and exchanged by decision and scenario.

Figure 1

Visualization of the Trust Game as Presented in the Online Survey



Prior to the trust games, the mindset manipulation was presented at random. The mindset manipulations were based on the successful empathy and perspective-taking manipulations as created by Galinsky et al. (2008). The following text was presented to the participants in the control condition: “In preparing for and making the decision, focus on your own role.”. The participants in the empathy condition were told: “In preparing for and making the decision, take the perspective of Player 2. Try to understand what Player 2 is feeling, what emotions he or she may be experiencing (in making his/her decision). Try to imagine what you would be feeling in that role.”. The administered to the perspective-taking condition were instructed: “In preparing for and making the decision, take the perspective of Player 2. Try to understand what Player 2 is thinking, what his or her interests and purposes are (in making his/her decision). Try to imagine what you would be thinking in that role.”. Sixty-one participants were confronted with the empathy mindset, fifty-one with perspective-taking and fifty were not manipulated.

Next, the participants partook in twelve trust games in which they had to decide to trust or distrust the trustee. All games were low in risk, but varied in levels of temptation. No games

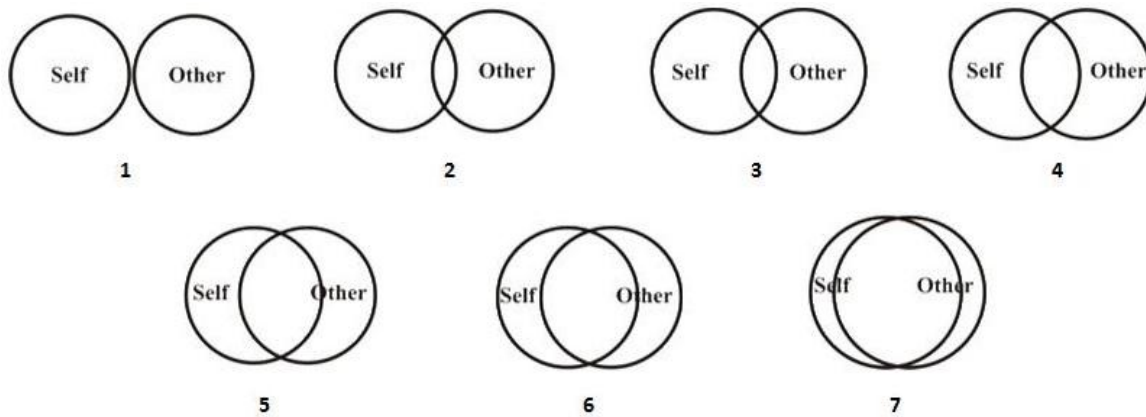
were repeated. All games represented low risk scenarios, since trustors decide to trust more when risk is low (Evans & Krueger, 2001; Malhotra, 2004). The game's values (money) were a replica of the low risk games presented in the paper by Evans & Krueger (2001). The presentations of games in the survey were randomized and participants were informed that the games were hypothetical.

After the games, the participants had to estimate the probability that the trustee would reciprocate. For every game played, they had to estimate the amount of trustees that would reciprocate out of a hundred trustees. The participants received the following instructions: "In the next part of the experiment, your task is to predict Player 2's behavior in the previous scenario. On the following pages, you will be presented with the 12 rounds of the game. Your task is to estimate the percentage that Player 2 chose SHARE in each round of the game.". The participants indicated their answers on a horizontal slider ranging from 0 to 100. For both the games and the estimations time was registered.

The inclusion of other in the self scale by Aron, Aron and Smollan (1992) was administrated to measure closeness perceived by the participants towards the trustee. The closeness scale by Aron et al. (1992) consists of seven different overlapping circles and is presented in Figure 2. The amount of overlap of the two circles increases linearly from no- to complete overlap imitating the amount of overlap felt in a relationship. The participants were asked to pick the illustration that best described their affiliation with Player 2.

Figure 2

The Inclusion of Other in the Self Scale as presented by Aron, Aron & Smollan (1992)



Finally, all participants had to fill out their demographic information, were debriefed and thanked for their participation.

Results

The dependent variable of experiment 1 is trust decision, or more specifically the degree to which the trustor decided to trust the trustee. The effects of mindset, time and expectations on trust were analyzed in separate ANOVA's in which trust was defined as the amount of times a participant decided to trust over all games (min. 0, max. 12). The relationship of closeness and mindset on trust was measured via an ANCOVA.

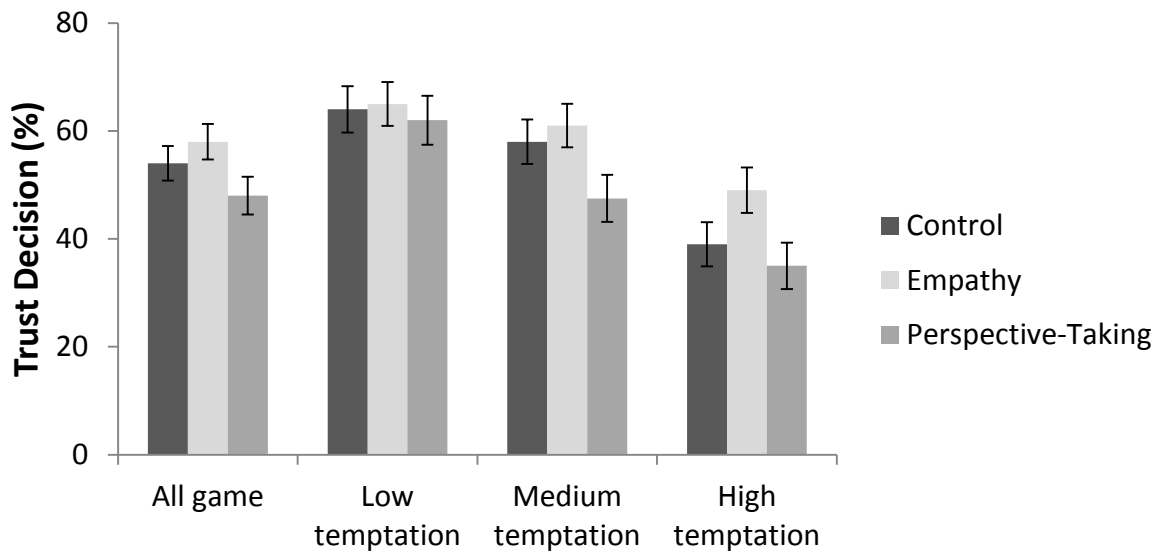
To measure the degree of trust, all decisions were counted (0=distrust and 1=trust) and summed per temptation level and overall games. Participants decided to trust the trustee 54% of all games ($M = 6.40$, $SD = 3.06$). Across temptation levels, levels of trust varied within 41% and 63% in which trust decrease from low ($M = 2.54$, $SD = 1.29$), medium ($M = 2.22$, $SD = 1.28$) to high temptation ($M = 1.64$, $SD = 1.30$). Mind that the different temptation levels only consist of 4 games and therefore can only vary from 0 to 4. Trust decreases when temptation increases.

trust and mindset. A one-way ANOVA revealed that overall games and in the medium and high temptation games, perspective-taking led to significantly less trust than empathizing. Figure 2 visualizes the effect of mindset on trust decisions for all games and games per temptation levels. Over all games mindset had an effect on trust decisions, $F(2,168) = 2.50$, $p = .09$. An LSD post-hoc test clarifies that empathizing respondents decide to trust the trustee significantly more than perspective-taking respondents ($M = 0.10$, $SD = 0.46$), $p = .03$. These findings are duplicated across all temptation levels, but mindset did not have a significant effect on trust in the low temptation games, $F(2,168) = 0.12$, $p = 0.89$. In the medium temptation games, mindset had a significant effect on trust decisions, $F(2,168) = 3.07$, $p = .05$. Perspective-taking respondents trusted significantly less than empathizing respondents ($M = -0.14$, $SD = 0.06$), $p = .02$. In the high temptation games, mindset also had a significant effect on trust, $F(2,168) = 3.26$, $p = .04$. Again, a LSD post-hoc test indicated that perspective-taking led to less trusting than empathizing ($M = -0.14$, $SD = 0.06$), $p = .01$.

Overall games and levels, apart from the low temptation game, perspective-taking led to significantly less trusting than empathizing. No significant differences in trust were found between control and perspective-taking or empathy. However, a relationship was observed in which participants scored highest on empathy, followed by control and subsequently perspective-taking. These findings support hypotheses 1 and 2b, namely that empathizing increases trusting and perspective-taking decreases trusting.

Figure 2

Trust Decision per Mindset in Percentages including Standard Error Bars



The effect of mindset on trust decisions is reflected amongst the unconditional trustors and distrusters, but the differences were not significant. Out of all the hundred-seventy-one respondents twelve decided to trust and ten decided to distrust in all rounds of the survey. Out of the twelve, a majority of seven respondents were empathizing (58%). Out of the ten people that decided to distrust in all rounds, six were in the perspective-taking condition (60%). To test if mindset has a significant effect on unconditional trusting and distrusting, a chi-square analysis was conducted in which the unconditional trust was compared to unconditional distrust. It revealed that empathy led to more unconditional trusting and perspective-taking led to more unconditional distrusting, but it was not significant, $X^2(2, N = 171) = 3.15, p = .21$.

time and mindset. A one-way ANOVA analysis was conducted to test the effect of mindset on the decision making time. Decision making time measurements were logged and differed significantly between conditions, $F(2,168) = 2.70, p = .07$. Respondents in the perspective-taking condition, who tended to distrust more often, took marginally significant

more time than the respondents in the empathy condition ($M = 0.08$, $SD = 0.04$), $p = .02$. Our data hereby supports the findings by Rand, Greene & Nowak (2012) who stated that people are intuitively cooperative and can only overcome this impulse and behave egotistically by deliberation. Their respondents were less likely to trust when they had time to consider their decision and the reversed effect occurred when respondents had a limited amount of time. Rand et al. (2012) suggested that people are naturally cooperative and only reject this impulse by reflecting upon their decision.

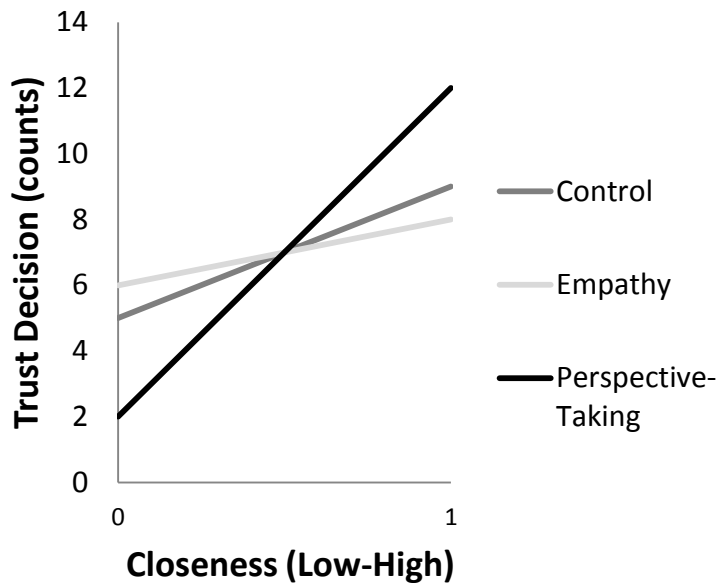
closeness, trust and perspective-taking. To test the effect of closeness and mindset on trust, a correlation test and an ANCOVA analyses were performed. As predicted, the Pearson correlation test confirmed that closeness and trust are positively correlated, $r(169) = .35$, $p < .01$. Recall, that previous research suggests that perspective-taking can lead to both an increase and decrease in trusting. Previous results suggest that perspective-taking leads to a decrease in trust, but we expect closeness affects the effect of perspective-taking on trust.

An ANCOVA (between subjects factor: mindset (control, empathy and perspective-taking); covariate: closeness) revealed a marginally significant interaction effect, $F(2,156) = 5.11$, $p = .01$. Three separate Pearson correlation tests, between trust and mindset within all mindset, were conducted and revealed that across all mindsets, feeling affiliated (closeness) with the trustee always leads to more trust. However, trust and closeness correlate stronger in perspective-condition ($r(56) = .66$, $p < .01$) than in the empathy ($r(53) = .28$, $p < .01$) or control condition ($r(47) = .37$, $p < .01$). Meaning, respondents who partake in perspective-taking trust the trustee significantly less than the empathizing respondents when they do not feel affiliated, however they trust the trustee significantly more than the empathizing respondents when they feel highly affiliated with the trustee ($M = 1.26$, $SD = .50$), $p = .01$. This relationship is visualized in figure 3.

Perspective-taking moderates the relationship between closeness and trust and confirms hypothesis 3.

Figure 3

Moderation Effect of Perspective-Taking on Closeness and Trust



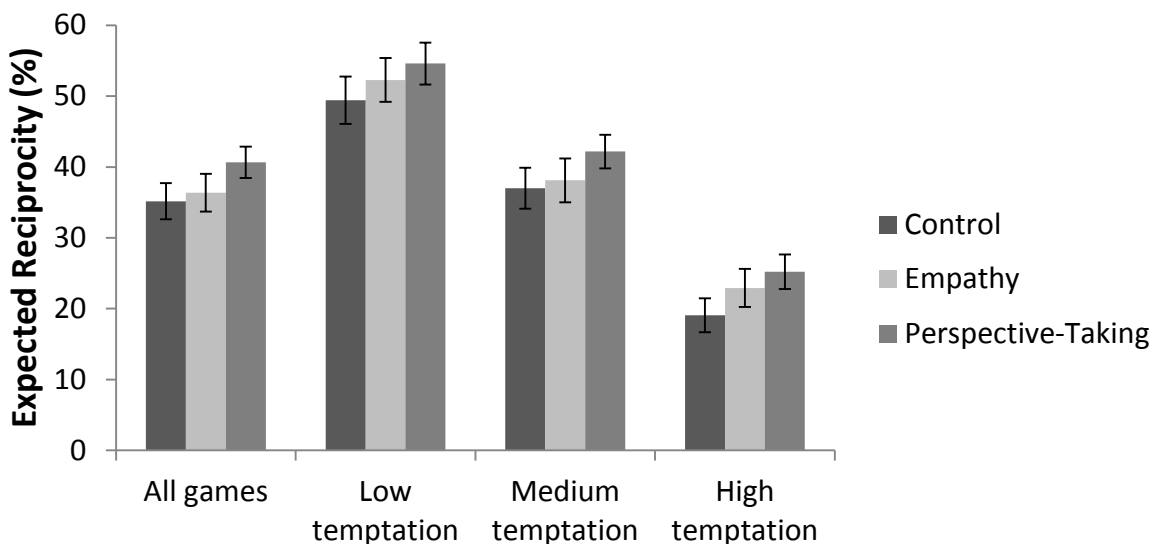
expectation to reciprocate and trust. The following results address the involvement of reciprocity expectations in trust decisions. Our data supports previous research that expectation to reciprocity predicts trust decisions. A Pearson correlation test confirms that the expectation of reciprocity and trust are positively correlated, $r(169) = .58, p < 0.01$). When expectation of reciprocity increases, then trust increases as well. These findings do not add to previous research. In the present paper the main focus is the effect of mindset on trust decisions and whether expectation of reciprocity can explain the different effect of mindset on trust.

The mean scores of expected reciprocity per mindset are presented in figure 4 and highlight two patterns. First, expectation to reciprocity scores are highest amongst low temptation games and decline to a minimum in the high temptation games, suggesting that

trustors are capable of estimating reciprocity when taking the trustees point of view. Recall that a trustee's decision to reciprocate is partially dependent on temptation (Evans & Krueger, 2011). Secondly, the figure insinuates that perspective-taking leads to expecting more reciprocity than empathizing. However, a one-way ANOVA over all games (and per temptation level) do not confirm a significant difference between the groups, $F(2,164) = 1.35, p = .26$. Mindset does not affect the expectation to reciprocate. These findings suggest that the expectation to reciprocate may not explain the different effect of mindset on trust.

Figure 4

Expectation of Reciprocity per Mindset

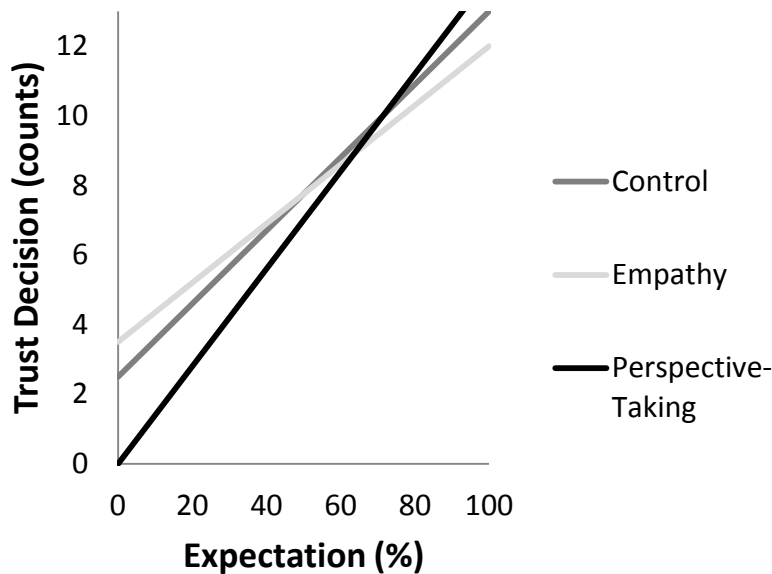


An ANCOVA analysis (between subjects factor: mindset (control, empathy and perspective-taking); covariate: expectation to reciprocate) do not support these speculations, $F(2,161) = 2.26, p = .11$. However, a pattern between these variables is found and illustrated in figure 5. Expecting the trustee to reciprocate always leads to more trust, however when employing perspective-taking the negative effect is stronger. When the expectancy of reciprocity is low, then the respondents in the perspective-taking condition trust the trustee less than the

respondents in the other two conditions. However, when the expectancy is high then the respondents in the perspective-taking condition tend to trust more.

Figure 5

Interaction Effect of Expectation of Reciprocity and Mindset on Trust Decisions



Discussion

The results of experiment 1 indicate that mindset effects trust decisions. Especially empathy a mindset that evokes prosocial behavior, leads to an increase in trust decisions and confirming hypothesis 1. Perspective-taking can lead to both an increase and decrease in trust decisions which confirms hypothesis 2. The direction of this relationship seems to be guided by closeness, confirming hypothesis 3.

Furthermore, we suspected that expectations to reciprocity could explain the differing effects of mindset on trust. Consistent with previous research, expectations to reciprocate and trust are positively related. However, mindset does not seem to have an effect on expectations. Therefore we should be skeptical of the three relationships.

A limitation of this experiment is that respondents only decide if they are willing to trust. It does not test the degree to which trustors are willing to trust the trustee, since the amount of money is previously specified. Experiment 2 administrates an investment game and includes the ability to choose the trustee to test gender preferences. It was designed to explore the effect of mindset on trusting behavior and its robustness across situations.

Experiment 2

After a relationship between mindset and trust was found in experiment 1, we wanted to test the relationship to another economic game; the investment game. If we find a similar result in study 2, then we can argue for robustness across situations.

In experiment 2 we will present a variation of the investment game as it was first introduced by Berg et al. (1995). The game consists of two players; the trustor and trustee. In experiment 2, all participants will participate as trustors. In the first stage the trustor will receive €10,-. The trustor then has to decide how much money to send to the trustee. After sending, the send money is tripled and given to the trustee. In the final stage, the trustee has to decide how much money to reciprocate and send to the trustor.

The trust and investment game share similarities and differences. First, they both provide anonymous interaction between two players. Second, both ask for dichotomous choices in trust from the trustor, even when deciding to trust contradicts game theory predictions. Finally, both games are sequential. The trustor makes a decision prior to the trustee. The games differ in some ways as well. First, they differ in the degree of threat, or risk. In the trust game the amount of risk can vary from high to low, whereas in the investment game risk is not flexible. Second, in the trust game the trustor can merely decide to either trust or distrust. The trustor in the investment game also decides the amount of money shared.

Our second point of interest for experiment 2 is the effect gender on trust decisions. A large body of research is present to identify the effect of gender differences in trust interactions. Most of this research is dedicated to revealing which gender is more trusting and trustworthy. We will not discuss the latter since the present research focuses solely on trusting decisions by the trustor. Multiple studies find that, men are more trusting than women (Snijder & Keren, 1999; Chaudhuri & Gangadharan, 2002; Buchan et al., 2008), but in other studies no significant differences were found (Eckel & Wilson, 2003; Eckel & Wilson, 2005). Bellemare & Kröger (2003) even found women to be more trusting than men. Croson & Gneezy (2009) argue that these non-absolute findings in trust, which can also be found in reciprocity (Solnick, 2001; Eckel & Grossman, 2008), are caused by the differential sensitivity of men and women to social conditions in a study. Thus, there seems to be a lot of discussion on gender differences. We have to remain aware of this sensitivity to study context when deducting conclusions from our data.

The present research will investigate who trustors prefer to play the investment game with by allowing participants to choose the trustee. Prior to experiment 2 we do not suspect a single direction due to incoherent research. According to Scharlemann et al. (2001) and Slomin & Guillen (2010) trustors tend to prefer, choose and send more money to the opposite sex. They argued that a man's choice was determined by tastes and a woman's by expectations. However, other studies have found that women were expected to reciprocate or cooperate more than men (Orbel et al., 1994), but this did not translate to behavior. Women were not picked more often to play the economic game with (Schaub, 1996). No predictions will be made prior to experiment 2. Trustors could prefer trustees who are women, men, same or opposite sex as the trustor.

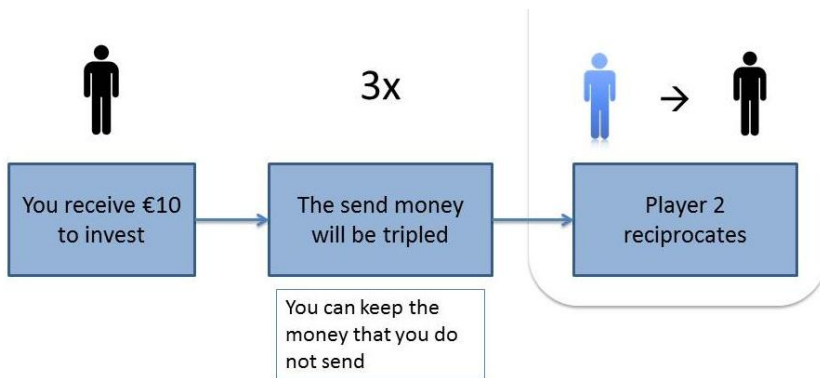
Method

participants. Experiment 2 was both administrated via an online survey and was brought to respondents via on-campus recruitment. Most participants were recruited on Tilburg University and Radboud University Nijmegen campus, but some were recruited via online media (Facebook). Again, participants were excluded from analysis if they did not complete all questions in a section of the survey. After removing the dropouts, 185 participants remained for analyses. There was a small overrepresentation of women, 114 women (61.6%) and 71 men (38.4%), which had an average age of 22, $SD = 4.7$.

procedure. As in experiment 1 all participants were told that they were selected as trustor (Player 1). However, instead of playing 12 trust games, they only played 1 investment game. In the instruction the three stages of the investment game were explained. In the first stage, the participant would receive €10,- and decide if they would send money to the trustee (Player 2). In the second stage, the money sent by the participant would be tripled before being handed to the trustee. In the final stage, the trustee would decide the amount of money to reciprocate. Words that could expose the true nature of our study, such as trust and game, were avoided and exchanged by decision and scenario. The instructions were accompanied by a scheme as presented in figure 3, visualizing the investment game in order to increase understanding of the game. The participants were also reminded that the game would be hypothetical, meaning they could not earn or lose real money.

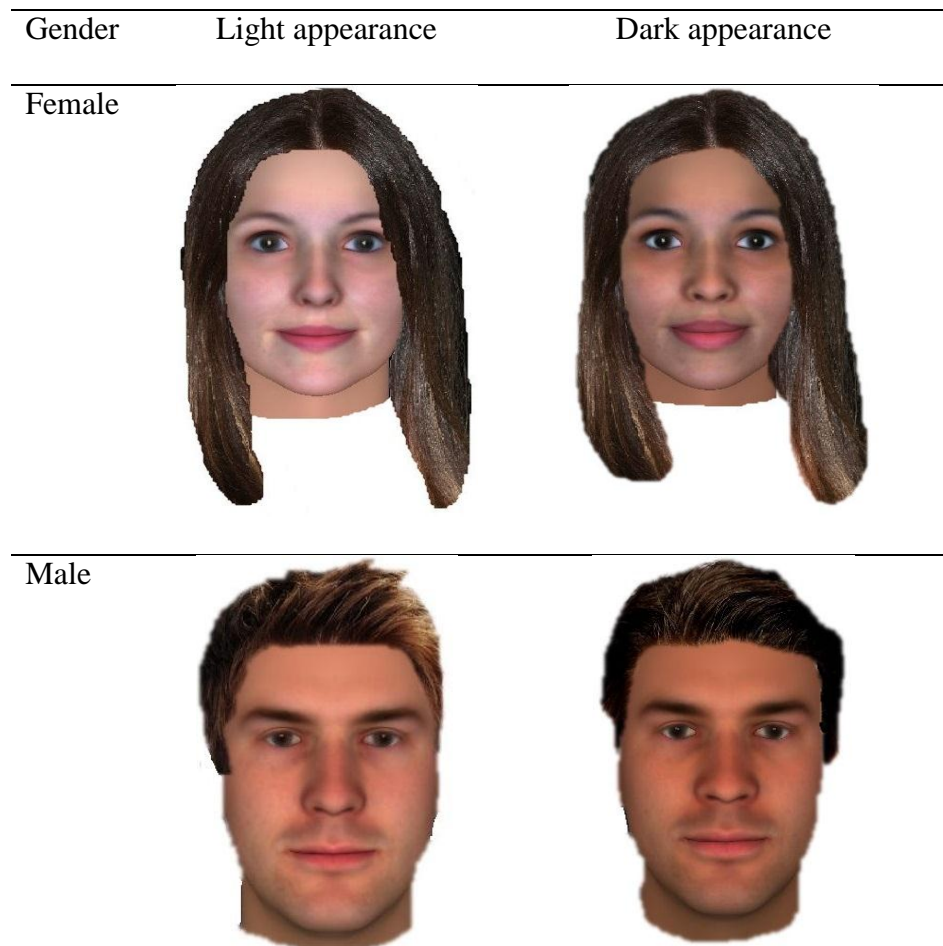
Figure 3:

Visualization of the Investment Game as Presented in the Online Survey



Prior to the investment game, the participants were exposed to the mindset text manipulations as presented in experiment 1. Next, all participants were accompanied by an avatar which represented the outer appearance of the trustee. However, instead of fixing a trustee avatar with a participant at random, we let the participant decide which avatar they wanted to play the game with. The four avatars differed in skin, hair and eye color (light vs. dark) and gender (male vs. female) and are presented in figure 4. Since the gender of the avatar will not be presented at random we will have a quasi-experiment. This may lead to an unequal distribution of male and female avatars which can be used as another measurement. A drawback of this type of measuring however, is it may lead to a disturbance for trust analyses.

Figure 4:

The Trustee Avatars as Presented in the Online Survey

After the instructions and manipulation, the participants played the investment game as the trustor. They were asked how much money, out of €10,- received, that they would send to the trustee. The answer was provided on a horizontal slider ranging from 0 to 10.

After the game, the participants had to estimate the degree of reciprocity by the trustee. The participants were provided with three different scenarios, which corresponded with the previously played investment game. The first stage, deciding what amount of money would be sent to the trustee, was fixed and varied between €4, €7, or €10,-. The participants were asked to

estimate the amount of money the trustee would reciprocate in every scenario. Again, the participants could give their answer on a horizontal slider. The slider ranged changed per scenario, ranging from 0 till €12, €21, and €30.

As in experiment 1, the participants had to fill out the inclusion of other in the self scale to measure closeness and their basic demographics for analyses. At the end of experiment 2 they were thanked for their participation and debriefed.

During the survey another time measurement was installed for the game and estimation of reciprocity. Furthermore, to enhance the effect of the gender of the trustee, the avatar was pasted above the game, estimation and closeness scale.

Results

The main dependent variable in experiment 2 was trust decision, or more specifically the amount of money send to the trustee. Our main interest was duplicating the results of experiment 1, the effect of the mindset manipulation on trust decisions, in a different setting to prove robustness. However, we were also interested in the effects of the trustee's gender on trust decisions and an interaction between mindset and gender of the trustee. The effects of mindset, gender of the trustee, time and expectations on trust were analyzed in separate ANOVA's in which trust was defined as the amount of money send to the trustee (min. 0, max. 10). The relationship of closeness and mindset on trust was measured via an ANCOVA.

The purpose of the second experiment was to test the gender hypotheses and to test if the findings of experiment 1 are robust across settings, especially the effect of mindset on trust decisions.

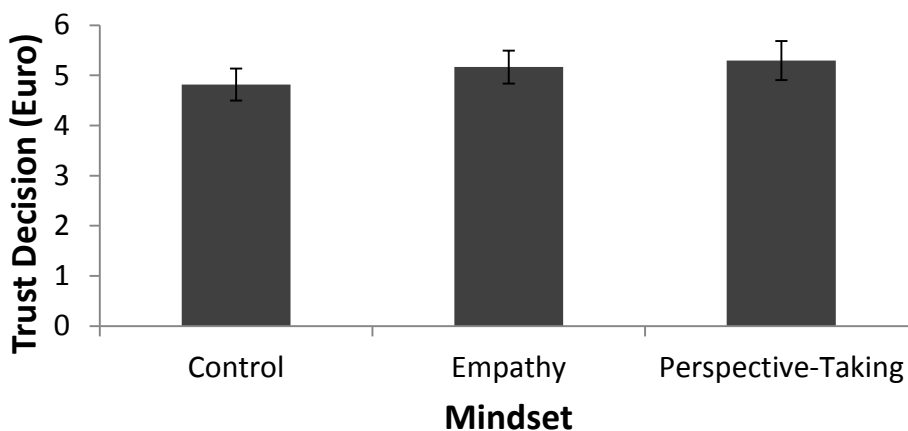
trust and mindset. In experiment 2 the trust game with varying temptation levels across games was replaced with one investment game. Therefore, trust was not measured as a decision,

but as the amount of money send to the trustee. Figure 6 visualizes the means of trust per mindset. Over all conditions respondents send an average of €5,08 to the trustee, $SD = 2.69$.

The effect of mindset on trust was not replicated in experiment 2. In experiment 1, perspective-taking led to a decrease in trust and empathizing led to an increase in trust. To address the robustness of this relationship a one-way ANOVA was conducted and revealed that experiment 2 failed to replicate these results, $F(2,182) = 0.52, p = .59$. As visualized by figure 1, the means of trust per condition only differed slightly between €4,80 and €5,30.

Figure 1

Trust per Mindset in Euro's



The cause of experiment 2's inability to replicate the findings of experiment 1, concerning mindset and trust decisions, could be found in the decision time data. Recall that in experiment 1, perspective-taking respondents needed significantly more time to make their trust decision compared to the respondents in the empathy and control conditions. These findings are not replicated in experiment 2, $F(2,184) = 0.57, p = .57$. We believe that the amount of games could be the cause. In experiment 1, registered time consisted of the logged time of all twelve games combined. Therefore, respondents had the opportunity to master the game. However in

experiment 2, registered time only consisted of time for one game. The mean time scores are presented in table 1 and seem to differ between the two experiments. However, the time differences may not necessarily be caused by the opportunity to master the game. The differing time scores could also be explained by the mechanical aspects of making the decision. Clicking on IN versus OUT or sliding the bar.

Table 1

Amount of Time per Trust Decision

Mindsets	<u>Experiment 1</u>		<u>Experiment 2</u>	
	Time in seconds	N	Time in seconds	N
Control	14.43	51	17.50	68
Empathy	13.19	61	13.18	64
Perspective-Taking	15.22	59	15.42	53
Total	14.26	171	15.41	185

preferred gender of trustee. As mentioned in the method section, an uneven distribution of male and female trustees could influence our analyses of trust and expectations. The data reports that our respondents are unequally balanced, more females than males, and their preference for female (67%) over male trustees (33%) causes an uneven distribution of trustees. A chi-square test reveals that the respondents significantly prefer a female trustee over a male trustee, $X^2(1, N = 188) = 65.79, p < 0.001$. These results put forth two other questions. First, is the preferred gender of the trustee influenced by mindset? In all conditions female trustees (65%-68%) were preferred over male trustees. A chi-square analysis showed no significant effect of mindset on gender preference was found, $X^2(2, N = 188) = 0.17, p = .92$. Second, do respondents from both genders prefer a female trustee? A chi-square test proves that this presumption only

holds for females but not for males, $X^2(1, N = 185) = 19.10, p < .001$. Female respondents have a preference for female trustees. They chose a female avatar 80% of the time, while men seemed indifferent to the gender of the trustee (48%).

Our data state that female respondents prefer female trustees, however the collected data does not allow interpretation of its cause. Female trustees could be seen as more trustworthy or in need of more help. Due to the inability to explain the differences of preference the data does not allow for further analyses.

Discussion

The results of experiment 2 suggest that women prefer female trustees. Men do not seem to significantly prefer a gender. Although these findings are highly significant, the design of experiment 2 proposes a limitation. The experiment data does not declare the cause of this preference and therefore further analyses, concerning expectations and trust, were uninterpretable. Furthermore, the results on mindset and trust are inconsistent with the findings of experiment 1.

General Discussion

These two studies extend the knowledge about the effects of people's mindset (empathy and perspective-taking) and gender preferences on trust decisions. We found support for all proposed hypotheses, but there was a lack of support for the exploratory assumption that expectation to reciprocity explains the different effects of mindset on trust. The first experiment showed that participants were sensitive to the effects of empathy and perspective-taking. Consistent with the predictions based on prosocial behavior and hypothesis 1, empathy consistently resulted in an increase in trust. Perspective-taking resulted in a decrease and increase in trust supporting both sides of our conflicting hypothesis 2. The direction of this effect is

determined by closeness which support hypothesis 3. Experiment 2 revealed that women have a preference for female trustees, and that males do not have a distinctive preference. The effects of mindset on trust were not replicated in the investment game.

These findings elicit three issues. First, the finding that feeling affiliated seems to determine the effect of perspective-taking on trust, suggest that the effect of perspective-taking on trust is guided by focus. The data suggest that in the default setting, in which no additional information is provided, people tend to focus on negative aspects of the interaction (Ross & Sicoly, 1979). In order to avoid damage most people decide to distrust; reactive egoism (Epley). However, when focusing on positive aspects of the interaction perspective-takers become more trusting. An alternative explanation of the positive effect of perspective-taking on trust could be explained by the reduction of egocentric views. When forming a decision, people do not include the perspective of another decision maker when risk is high (Evans & Krueger, 2011). As affiliation increases, risk may appear smaller leading to more perspective-taking and an increase in trust when temptation is low. For this alternative to be plausible, trust should merely increase when temptation is low. It is important to note that this explanation and our explanation do not exclude each other. They could both explain different parts of the variance.

Second, the inability to replicate the effect of mindset in the investment game may imply that mindset may not affect trust across all settings. Another plausible explanation for finding no effects of mindset on trust is that the opportunity to choose a trustee may increase inclusion of the other in the self.

The final issue is the lack of depth in the exploratory features of the study due to study design.

Limitations

Three main limitations exist in the design of the current study. First, there is a the difference between multiple and singular measurement games across experiments. In experiment 1 trust was measured via multiple binary trust games and in experiment 2 by a singular investment game. Participants in the second experiment were unable to become familiar the investment game and previous research has argued that trust and cooperation differences dissolve over time (Ortmann & Tichy, 1999; Chaudhuri, Paichayontvijit & Shen 2012). Second, experiment 2 lacks a preselected trustee condition and a tool to measure the reason for selecting a male or female avatar. Selecting the trustee led to an imbalance in selected male and female trustees. The indifference was measurement, analyzed and led to the finding that women prefer female trustees, but due to the imbalance we were unable to determine the cause of the preference and therefore unable to research which gender is more trusting. Moreover, it enabled us to explore if expectation to reciprocate are the underlying driving force of the different effects of empathy and perspective-taking on trust decision. Finally, the online administration and hypothetical state of the study could have debilitated some effects. Hypothetical games lack relationships and the activations of norms. Therefore, participants tend to trust less (Dunning, Fetchenhauer & Schlösser, 2012).

Implications and Future Research

This study brings about several implication, both theoretically and practically. To begin with, one major theoretical implication that the present study offers is uncovering the effects of mindset on trust decisions. It contributes to previous literature by establishing the positive effect of empathy and the conflicting effect of perspective-taking on trust. Moreover, closeness is nominated as the determinant of the direction of the latter relationship. Based on the findings of the current study and Malhotra's (2004) finding that both trustors and trustees employ an

egocentric view in trust interactions, we believe that mindset should also influence the trustee's trust decisions.

A second theoretical implication is that female trustors prefer female trustees and that men do not seem to have a preference. The current study does not find a cause for women's preference, and men's lack of preference. The expectation of reciprocity explains trust and previous research suggests that female trustors are expected to be more trustworthy (Ortman, 1999; Buchan, 2008; Chaudhuri, 2012). However, if the expectation of reciprocity explains the preference for female trustees, then men should also prefer female trustees. An explanation for this could be that women are more sensitive to research context than men (Croson and Gneezy, 2009) We believe that the preference of the female trustor is caused by the expectation to reciprocate. This prediction could be tested by replicating the gender preference measure, choosing your own trustee, but adding a fixed gender trustee condition to allow analyses.

Practical implications consist of advising to partake in perspective-taking or empathy based on the objective increase trust. The findings of our study may inspire employers to focus on empathy amongst employees to increase trust within the company and perspective-taking to avoid detrimental trust decisions towards competitors. All the employers have to do is determine when it is smarter to trust and when it would be smarter to distrust.

Conclusion

The current study investigates the effect of empathy and perspective-taking on trust decisions and who trustors prefer to play the investment game with. Both the effects of empathy and perspective-taking, and of the trustee's sex were not tested previously. Prior to the present research, it was expected that empathy and perspective-taking would have different effects on trust decision. Based on previous research by Evans & Krueger (2011), Galinsky et al. (2008)

and Coke et al. (1978), it was hypothesized that empathy would lead to an increase in trust (hypothesis 1) and that perspective-taking lead to both an increase and decrease in trust (hypothesis 2) based on the tendency to feel affiliated (hypothesis 3). The findings of experiment 1, collected with a trust game, supported all the hypotheses, experiment 2 did not. The difference in results could be explained by the differences in administrated games or by the additional confounding effects of choosing your trustee.

The findings of experiment 2 did not support the hypotheses, but it did contribute to the research on trustors preferences. Due to a lack of research on gender preferences in trust games, no hypotheses were conceived. Experiment 2 results exhibited a preference for female trustee by women, but men did not have a preference for gender. Preceding the current study, we believed that the expectation to reciprocate could explain the preference. However, due to the absence of a preselected trustee gender condition we could not explore these expectations.

In sum, the findings of the current research constitute new insights into trust and its determinants. These insights can be used to advice managers to improve trust decisions or to the government to create understanding for a new policy. Furthermore, we would encourage subsequent research to explore the underlying source that drives the effects of empathy and perspective-taking on trust decisions.

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