

# The Plasterk Effect

## Experiencing Stereotype Threat Increases the Ingroup Trust Bias

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### ABSTRACT

People in a minority position, like females in executive functions, might experience stereotype threat (the anxiety when faced with a stereotype that one will be judged based on this idea). This study explores the effect of stereotype threat on the trust bias (the tendency to trust ingroup more than outgroup members). In an experiment on college students, stereotype threat was successfully induced by making subjects read a text with stereotypes about their college. Behavioural trust was measured by a game played against an ingroup and outgroup member. Stereotype threat increased the trust bias directly and through an interaction with pride.

### Keywords

Stereotype threat, ingroup trust bias, pride, glass-ceiling

### INTRODUCTION

The mechanism of stereotype threat is one of the most studied topics in social psychology. A stereotype threat is “a disruptive concern, when facing a negative stereotype, that one will be evaluated based on this stereotype (Myers, 2006 p.443).” This phenomenon explains how stereotyped groups might behave differently when their group identity is salient, and therefore might behave according to the stereotype – in that way stereotypes work as self-fulfilling prophecies (Steele, 1997) It is found, for example that African Americans score lower on IQ-tests when they are made aware of the fact that there is a stereotype idea prevalent in society that African Americans are not intelligent (Steele, 1997). Moreover, women perform worse on a math test when they are told that men are better in math than women (Steele, 1997). Perceiving stereotype threat might not only influence academic performance, but might also influence our ability to trust others. More specifically, perceiving stereotype threat might make us trust members of the group under threat more and outgroup members less. Exactly this phenomenon might occur when women are working in an environment with almost exclusively male co-workers, which makes gender identity very salient. This might explain why in Holland and many other European countries only nine

percent of the top executive positions in companies and governmental organisations are taken up by women (Glazen plafond, 2011), while the majority (60 %) of university graduates is female (Nuffic, 2010). Dutch feminist foundations blame the top managers of forming an old boys’ network and consciously trying to keep out the change (Sanders, 2002). The old boys, however, might not consciously keep women from joining their ranks. Networks are very important to get into a high position. Trust is a key ingredient for creating good working relationships and networks. Research indicates that people show generally more trust towards someone they consider being part of their ingroup – this phenomenon will hereafter be called the ingroup trust bias.

Maddux and Brewer (2005) explored whether women had a different trust bias than men. In this experiment, subjects played a game in which a fictional opponent received 11 dollars to distribute between himself and the subject. This fictional opponent was called the ‘Allocator’ (as it was his role to allocate the money) and the subject was called the ‘Recipient’ (as it was the subject’s role to accept or decline the allocator’s offer). This paradigm is often used in research on reciprocity and fairness (Noorderhaven, 2010), but Maddux and Brewer’s design was special as the recipient had to choose to accept or decline the allocator’s offer before the offer of the allocator was revealed. The game therefore measures the trust judgment of the recipient towards the allocator. In the experiment the subjects played two games, once against an allocator from their ingroup (a student from the same university) and once against an outgroup allocator (a student from a different university within the same country). They found that males were stricter about whom they considered to be part of their ingroup and they identified more with this ingroup. Moreover, men had a larger trust bias. Women in this study were more inclusive in their ingroup and relational group, but also showed lower trust ratings than men.

So, men and women both show an ingroup bias, although women are slightly less biased than men. The size of the trust bias, however, might change when gender categories are made salient, for example when women experience stereotype threat because they work in a masculine environment. In that case women would consider other women to belong to their ingroup and men to be part of the outgroup. According to Ensari (2009), feeling insulted (which people do when under stereotype threat)

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makes people more exclusive in their ingroup. Therefore, experiencing stereotype threat might decrease women's ability to trust men, as they will consider men as being part of the outgroup.

Carr and Steele (2010) induced stereotype threat in their subjects to manipulate risk-taking in a gambling game. They found that subjects who were faced with a stereotype statement which applied to their own ingroup tended to take fewer risks in the gambling game. They also found that perceiving a stereotype threat leads to a negative mood (Carr & Steele, 2010). They theorized that experiencing stereotype threat causes ego depletion: they will show less self-control in making risk-judgments, as they use all their resources to suppress negative stereotype related thoughts. Ego depletion in turn leads subjects to use an intuitive decision-making strategy instead of a rational decision-making strategy which requires more cognitive resources (Carr & Steele, 2010). And using an intuitive decision-making leads to risk aversion (Carr & Steele, 2010). This study will explore whether experiencing stereotype threat also influences judgments in the social domain, specifically trust behaviour. This study is exploratory in nature, and therefore three other factors were included in the study to find out the relationship between these factors and the trust bias. Firstly, subjective ingroup identification was considered as a factor in the stereotype threat – trust relationship, as stereotype threat might change how strongly we feel attached to a certain social group. Moreover, social risk-taking was evaluated, as previous research indicates that high risk-seekers show more trust as they are willing to bare the risks of being let down by the other (Byrnes, Miller, & Schafer, 1999). Finally, the role of emotions was also evaluated, as research indicates that positive emotions increase trust and negative emotions decrease trust (Dunn & Schweitzer, 2005).

## PRESENT RESEARCH

The present research will explore whether perceiving stereotype threat increases the ingroup trust bias and through which mechanisms this effect might work. This is the first study to explore this possible link between stereotype threat and trust. Although the link between stereotype threat and trust was inspired by the position of women in higher job positions, the effect is expected to be universal for all groups who are stereotyped. For practical reasons, it was therefore decided to test this hypothesis not on women (versus men), but on students from a small Liberal Arts college in the Netherlands about whom certain stereotype ideas prevail in the general Dutch population. Half of the subjects were manipulated to experience stereotype threat, as they were reminded of these stereotype ideas by reading a text written by one of the primary critics of the college, Ronald Plasterk. After the stereotype manipulation, subjects complete several scales, including a measurement of ingroup identification, emotion and risk-taking. Subsequently, all students played a trust game against a student from their own university (an ingroup

member) and from a different university in the Netherlands (an outgroup member) to win lottery tickets. This game functions as a behavioural measurement of trust, as the subject in the game had to decide whether they trusted the other player or not. It is expected that stereotype threat influences ingroup identification, and in that way will lead to higher trust towards members of the ingroup under threat and lower trust towards outgroup members. A hypothetical model was created to visualize the possible relationships between the trust bias, stereotype threat and several factors that in previous research have been connected to trust (social risk-taking, emotion and ingroup identification). This model was evaluated with the use of an experiment.

## METHODS

The experiment was conducted using students from University College Utrecht (UCU), a small honours college affiliated with Utrecht University in the Netherlands. As this is a relatively small and cohesive community (600-700 students living together on one campus), it was expected that students identify themselves strongly with UCU. Moreover, there are some stereotype ideas about UCU. At the time of the founding of UCU (1998), its educational philosophy was revolutionary in the Netherlands: it was the first college to use the liberal arts and science system, and first to use a selection procedure for student admission. The college met with quite some scepticism. One of UCU's biggest and most prominent critics was Ronald Plasterk, who wrote a series of columns about UCU in a national newspaper (Plasterk, 2004). At the time, he was part of the Biology department of Utrecht University, the parent University of UCU. A few years later, Plasterk became the Dutch minister of Education, and in this function he slowly revised his opinion on UCU. At one point he even used the University College system as an example for the reforms he wanted to make to the Dutch higher education system (NRC, 2009). However, it was expected that UCU students still feel threatened by stereotypic ideas.

### *Procedure*

This is a mixed within and between-subjects test, with two trials, inspired by the design used by Maddux and Brewer (2005). The subjects were seated behind a computer and answered some general questions. Subsequently, they had three minutes to read a text as part of a (fake) memory experiment. In the experimental condition this text was an excerpt of one of Ronald Plasterk's columns in a newspaper, where he called UCU "a day-care centre for rich kids" (Plasterk, 2004). In the control condition this was a promotional text about student life in Utrecht derived from the University's website (uu.nl). Then, the subjects completed a risk-taking scale, measuring how risky they perceived certain social and financial scenarios. Next, subjects filled in a questionnaire that measured their ingroup identification with UCU, with items like "Do you feel like you're a typical UCU student." Subsequently, subjects in the experimental condition filled in a scale that measures how much they felt stereotyped as a UCU student

(the Stereotype Consciousness Scale (SCQ) based on Pinel, 1999). The control group completed the same questionnaire after the trust game as the scale is known to prime stereotype threat in itself (Pinel, 1999). Moreover, subjects rated how much they experienced the emotions pride, happiness, anger and sadness at that moment (based on Dunn & Schweitzer, 2005). Afterwards, the subjects answered some questions about the manipulation texts, to remind them about the stereotypes. Next, the subjects were told they were going to play a game against other participants to win tickets for a lottery to win money. Subsequently, the rules of the game were explained: each subject would be randomly assigned to be either the role of allocator (who has 11 lottery tickets to allocate between the two participants in the study) or of recipient (who can either accept or decline the offer of the allocator) – however, in reality there was no allocator and the subject was always assigned to be the recipient. Secondly, the subject was told whether the allocator was a UCU Student (ingroup) or Tilburg University student (outgroup). Before the amount of the allocator's offer is revealed, the subject could either choose to accept the allocator offer (a trust choice) or choose to accept the experimenter's offer (a sure offer of three tickets, a distrust choice) – this was the first dependent variable, labelled trust choice. Furthermore, subjects rated how much they trusted the allocator and how many tickets they expected the allocator had offered them (these were two additional dependent variables, labelled respectively trust rating and number of expected tickets). Subsequently, the subjects were told that there was one more round to play with a different allocator, and that the computer would randomly chose the round for which they would receive reward. In the next round the experiment was repeated starting at the moment of the assignment of roles. So, subjects played in a random order once with an ingroup allocator and once with an outgroup allocator. After completing the game, the control condition completed the scale that measured how much they felt stereotyped as UCU students that the experimental condition already completed before the game. Next, they gave their opinion on Tilburg University students and indicated whether they believed they played against a real allocator and whether they had any idea what the goal of the study was. Finally, subjects were debriefed, thanked and rewarded one lottery ticket for a lottery with a price of 70,-.

## RESULTS

A total of 103 subjects completed the study, of which two had to be removed due to missing data. Data exploration indicated that there were no outliers, and that the sample was a good reflection of the UCU population. Subjects were equally distributed over the two conditions. Most variables had a normal distribution. For all scales, measurement models were evaluated using structural equation modeling, the scales showed good fit and had a high cronbach's alpha. A mixed-factor MANOVA indicated that the subjects in this study showed a trust bias: they trusted the ingroup more than the outgroup allocator according to their trust ratings

( $p=.015$ ), number of expected tickets ( $p<.000$ ) and trust choice ( $p=.088$  – marginally significant). So, the ingroup trust bias was replicated. According to an ANOVA, the stereotype threat manipulation had a significant effect on perceived stereotype threat as a UCU student, as reported by the SCQ. This effect, however, was in the opposite direction from expected: subjects indicated that they felt less stereotyped as a UCU student in the stereotype threat condition. However, previous research indicates that people under stereotype threat use denial of stereotypes to deal with the anxiety caused by stereotype threat (Ruggiero & Taylor, 1997). Therefore it was concluded that the stereotype manipulation was successful. Subsequently, a structural equation model was used to explore what connection there might be between stereotype threat and the trust bias. The hypothesized model was used as the initial model. The model was evaluated with the use of bootstrap estimation with 2.000 iterations, as the sample was small, one of the dependent variables was dichotomous and because there were problems with normality. It turned out that the initial model did not fit the data very well (bootstrap  $\chi^2 = 39.257$ , Bollen-Stine  $p < .000$ ). There were also many non-significant regression coefficients, and in the next step all these paths were removed. This implied removing the factors sadness, anger, ingroup identification

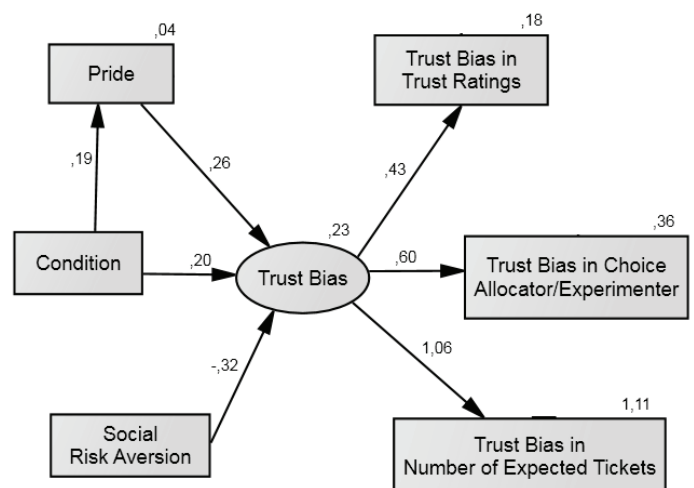


Figure 1. Model of the Trust Bias with Standardized Regression Coefficients

and happiness. The new model did show good fit (bootstrap -  $\chi^2 = 9.459$ , Bollen-Stine  $p = .752$ ). Moreover, all regression coefficients were significant. This new model had a direct effect of condition, pride and social risk-taking on the trust bias, and also an indirect effect of condition through pride on the trust bias (see figure 1). The model explained 32.7 % of the variance in trust bias, 16.6 percent of the variance in the trust choice, 78.6 % of the variance in the number of expected tickets, and 27.3 % of the variance in trust ratings.

## CONCLUSION

The existence of a general bias to trust ingroup members more than outgroup members was replicated in all three

dependent variables. The stereotype manipulation used in this study did have an effect on perceived stereotype threat. However, this effect was in the opposite direction from expected (subjects in the experimental condition reported that they felt less stereotyped as a UCU student than the subjects in the control condition). There is, however, evidence that the manipulation successfully created feelings of stereotype threat, as subjects possibly deny the existence of stereotype ideas about their group as a way of coping with stereotype threat (Ruggiero & Taylor, 1997). The stereotype manipulation increased the trust bias, as was hypothesized. The study also explored through what factors the effect of stereotype threat might have on the trust bias.

First of all, it turned out that stereotype manipulation did not influence subjective ingroup identification. Subjective ingroup identification also did not increase the ingroup bias. These findings indicate that the strength of ingroup identification does not influence trust. Secondly, social risk-taking was found to have an effect on the trust bias: social risk-takers had a larger trust bias. It might be the case that experiencing stereotype threat might increase the trust bias by influencing the risk-taking tendency of the subjects in the stereotype condition. In this study, however, it is impossible to evaluate this link, as the risk scale was conducted before the manipulation text, to limit the time between the manipulation and the trust game.

Emotion might explain the effect of perceived stereotype threat on the trust bias. Of the four emotions measured, only pride had an effect: subjects high in pride showed a larger trust bias. Moreover, subjects in the experimental condition experienced more pride. This finding is interesting, as one would expect that when a subject hears insults about herself, she would feel bad about herself. It might be the case that subjects feel increased levels of pride when under stereotype as they use coping strategies to deal with stereotype threat, similar to the denial of stereotypical ideas mentioned before.

There might be one underlying mechanism that causes stereotype threat and pride to increase the ingroup trust bias. In line with the theory of the study on stereotype threat and risk-taking by Carr and Steele (2010), stereotype threat and high levels of emotionality might lead to ego depletion: subjects have less self-control for decision-making, as all their cognitive resources are used to deal with the stereotype threat. Therefore, the trust decision is made by intuitive decision-making strategies instead of a more costly rational decision-making strategy.

Thus, experiencing stereotype threat creates an increase in ingroup trust and a decrease in outgroup trust. Subjects who were in the stereotype condition and who experienced high levels of pride had the largest ingroup bias. To apply these findings of this study to the glass-ceiling, it seems that the glass-ceiling does not persist because men try consciously to maintain the status quo, nor because women are inherently less qualified for leading positions. The findings of this study hint that the very fact that women are a minority in the business world might

maintain the glass-ceiling. This is both hopeful and discouraging news: the effect of stereotype threat would disappear when the working environment becomes more mixed, as gender would no longer be a salient basis for categorizing (and therefore judging) people. It is, however, difficult to improve the male/female ratio, as the skewed ratio seems to maintain itself. Future research might confirm this hypothesis in a more naturalistic setting, and might explore the mechanism underlying the effect of stereotype threat and pride on the ingroup trust bias. Policy makers, finally, should think of ways to break this cycle, without increasing stereotypes prevalent in managerial circle. Positive discrimination might not be the perfect solution for this problem, as it should be avoided that a business woman will be judged on the stereotype idea that she only got this position because she is a woman.

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