The Effects of Status on Perceived Warmth and Competence

Malleability of the Relationship Between Status and Stereotype Content

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Abstract. Research has shown that perceived group status positively predicts competence stereotypes but does not positively predict warmth stereotypes. The present study identified circumstances in which group status positively predicts both warmth and competence judgments. Students ($N = 86$) rated one of two groups (psychologists vs. engineers) presented as either being low or high in social status on warmth and competence. Results showed that status positively predicted competence stereotypes for both groups, but warmth stereotypes only for psychologists, for whom warmth traits are perceived to be functional in goal achievement. Moreover, for psychologists perceived warmth mediated the relationship between status and perceived competence. Results are discussed in terms of the contextual malleability of the relationship between perceived status, warmth, and competence.

Keywords: competence, group perception, status, stereotype content, warmth

Introduction

One of the major psychological payoffs of social status is perceived ability and competence. Research on intergroup relations has shown that high-status groups are judged as capable, intelligent, and competent; in contrast, low-status groups allegedly lack those qualities (e.g., Fiske, Cuddy, Glick, & Xu, 2002; Fiske, Xu, Cuddy, & Glick, 1999; Phalet & Poppe, 1997; Poppe & Linssen, 1999). Interestingly, competence, combined with warmth, is a basic dimension on which we judge groups (for reviews, see Abele, Cuddy, Judd, & Yzerbyt, 2008; Cuddy, Fiske, & Glick, 2008). Whereas warmth pertains to functioning in social relations and involves qualities such as warmth, kindness, friendliness, and sincerity, competence refers to task functioning and involves qualities such as efficiency, competence, and capability (see Abele et al., 2008; Cuddy et al., 2008).

A substantial body of research on group perception has investigated the relationship between perceived status and the two basic stereotypical dimensions of warmth and competence (e.g., Caprariello, Cuddy, & Fiske, 2009; Conway, Pizzamiglio & Mount, 1996; Cuddy et al., 2008, 2009; Eagly & Steffen, 1984; Fiske et al., 2002; Phalet & Poppe, 1997; Poppe & Linssen, 1999). Specifically, it has been shown that perceived group status is a predictor of perceived group competence, but not of perceived warmth. Evidence for this assumption was found considering con-venience (Eagly & Steffen, 1984; Fiske et al., 2002) and representative samples (Cuddy, Fiske, & Glick, 2007), real groups, and experimentally constructed groups (Caprariello et al., 2009). Moreover, the same findings emerged from a recent cross-cultural study (Cuddy et al., 2009).

As to warmth stereotypes, research demonstrated that they are predicted by perceived group competition, rather than by group status: Noncompetitive groups are judged to be warm, whereas competitive groups are perceived as cold (Fiske et al., 2002; Phalet & Poppe, 1997; Poppe & Linssen, 1999). The observed pattern between perceived group status and warmth and competence judgments has been explained by the assumption that status assesses the capability of groups to control resources. Groups with high status typically have high power as well, which is defined by the ability to obtain and provide resources. Both status and power, however, are defined by their abilities to regulate resources; thus, recognition of status is inherently linked to perceived competence (Fiske, 1993). Because warmth is related to social relations and caring rather than to ability and control of resources, it is not surprising that it is unrelated to social status.

However, research on group perception has demonstrated that many groups receive complementary stereotypes on warmth and competence, comprising a positive evaluation on one dimension and a negative evaluation on the other one (Fiske et al., 2002; Judd, James-Hawkins, Yzerbyt, &

Kashima, 2005). It seems that such patterns of stereotypes are functional to maintaining the status quo and to defending the position of societal reference groups (Jost & Kay, 2005; Kay & Jost, 2003). Building on this evidence, one may argue that perceived group status could positively predict competence judgments that, in turn, negatively predict warmth stereotypes in order to define a complementary pattern of stereotypes. Such a conjecture was advocated to explain the negative relationship between perceived group status and warmth ratings observed in some studies (Betancor, Rodriguez, Rodriguez, Leyens, & Quiles, 2005; Conway et al., 1996; Phalet & Poppe, 1997), where low-status groups were perceived to be warmer than high-status groups.

The specific ambition of the present research was to investigate whether – and under which circumstances – perceived group status positively predicts judgments regarding both competence and warmth. Theoretically, it is important to verify the existence of such a relationship in order to define whether the relationship between perceived group status and the two fundamental dimensions of group perception is malleable on the basis of the context. Previous studies have almost exclusively stressed the universality of such relationship over its possible malleability, showing that perceived group status is a predictor of competence judgments but not of warmth judgments (for reviews, see Cuddy et al., 2008; Fiske, Cuddy, & Glick, 2007), or sometimes predicts warmth judgments negatively (Betancor et al., 2005; Conway et al., 1996; Phalet & Poppe, 1997). By contrast, we hypothesized that, in social contexts in which warmth traits are perceived to be functional in goal achievement, perceived group status should positively predict competence as well as warmth stereotypes.

Research on occupational stereotypes (see Glick, 1991; Glick, Wilk, & Perreault, 1995; Webb & Speer, 1986) showed that healthcare professions (e.g., nurses, psychologists, social workers, and pediatricians) and education-related jobs (e.g., school teachers) are represented as involving warmth traits (e.g., empathy, understanding, and warmth) in goal achievement. In contrast, jobs that are unrelated to such domains (e.g., managerial and technical professions) are not perceived as requiring such traits in task functioning. Consistent with these findings, Eagly and coauthors (see Eagly & Diekman, 2005; Eagly & Karau, 2002) showed that those attributes that are perceived to be required for success and goal achievement change according to social role.

As assumed by status characteristics theory (Berger, Ridgeway, & Zelditch, 2002), status level would lead to an inferential process about both capacities and characteristics possessed by the target in a specific social position. According to this theory, a particular characteristic is linked to status if it is socially perceived as being relevant in a specific task-related setting. Expectancies of ability and competence are inferred from the association between status and status characteristic: The shorter and stronger the link, the higher the performance expectancies. Considering

that warmth traits are considered crucial in task functioning in healthcare and educational settings – as suggested by previous studies (Glick, 1991; Glick et al., 1995; Webb & Speer, 1986) – one may argue that in such contexts warmth traits are involved in the status-organizing process. Indeed, the perceived status of a psychologist or a school teacher may positively predict the perception of warmth. Moreover, because the perception of competence and ability is inferred by the link between status level and status characteristic, warmth traits would be necessary to describe the members of such groups as competent. Therefore, in healthcare and educational settings, warmth should be one important characteristic underlying the relationship between social status and competence stereotypes.

In other words, in those contexts in which warmth traits are perceived to be crucial to the pursuit of a goal, warmth should positively mediate the relationship between perceived status and competence judgments. Conversely, in those contexts in which warmth traits are not considered functional to goal achievement, status should predict competence but not warmth judgments, as demonstrated in previous studies (see Cuddy et al., 2008). In the present paper we specifically tested these hypotheses.

Overview of the Experiment

The present experiment was designed to test the hypotheses that, in the contexts in which warmth traits are considered necessary to achieve a goal (i.e., healthcare and educational settings), perceived group status positively predicts competence as well as warmth stereotypes (*Hypothesis 1*), and that warmth mediates the relationship between status and competence (*Hypothesis 2*). We experimentally tested these hypotheses by manipulating the target group and the group status. Following previous studies (Glick, 1991; Glick et al., 1995; Webb & Speer, 1986) we considered the healthcare setting to be a context in which warmth traits are perceived functional to achieving a goal; more specifically we considered psychologists to be one of the prototypical targets that acts in this context. As a control condition, namely, a context in which warmth traits are not considered strictly relevant in task functioning, we considered a technical setting and, more specifically, engineers as one of the prototypical targets.

Method

Participants

A total of 86 students (25 female, 61 male) from a large university in Italy took part in this study. Participants ranged in age from 19 to 29 years ($M = 21.97$; $SD = 2.26$).

All participants were Italian citizens and none attended psychology or engineering courses.

Materials and Procedure

The study was introduced as dealing with group perception. The experiment employed a 2 (Target: psychologists vs. engineers) × 2 (Status: high vs. low) between-subjects design. Participants were randomly assigned to one of the four experimental conditions. Depending on experimental condition, participants read the results of a fictitious ministerial report in which psychologists (vs. engineers) were described as a high (vs. low) status professional group. According to previous studies (Caprariello et al., 2009; see Cuddy et al., 2008, for a review), social status was manipulated as job success and occupational prestige (see Appendix A). After reading the description participants rated the target on perceived competence (α = .88) and warmth (α = .85). Moreover, to check the efficacy of the experimental manipulations, participants rated the target on perceived group status (α = .90). Considering that previous studies (e.g., Fiske et al., 2002; Phalet & Poppe, 1997; Poppe & Linssen, 1999) showed that warmth stereotypes are predicted by perceived intergroup competition, participants also evaluated the group on perceived competition (α = .86) in order to exclude the possibility that this variable plays a role in the hypothesized mediation (all items are listed in Appendix B). Participants provided their answers on a 5-point scale, ranging from 1 (*not at all*) to 5 (*extremely*). All items came from prior studies on stereotype content (see Cuddy et al., 2008; Fiske et al., 2007; Suitner & Maass, 2008).

Results

Manipulation Check

To check the manipulation, we performed an analysis of variance on perceived group status as a function of the manipulated group status and target. The analysis yielded a main effect of manipulated status $F(1, 82) = 130.47$, $p < .01$, $\eta_p^2 = .61$. As predicted, participants rated high-status targets ($M = 4.01$; $SD = .75$) as higher in status than low-status targets ($M = 2.44$; $SD = .61$). We also found a main effect of target, $F(1, 82) = 16.25$, $p < .01$, $\eta_p^2 = .17$. The

engineers ($M = 3.56$; $SD = 1.07$) were perceived as being higher in status than the psychologists ($M = 2.96$; $SD = .93$). This finding is not surprising, because previous studies (e.g., Glick et al., 1995) had demonstrated that engineers are perceived as more economically successful than those involved in healthcare jobs. Finally, we did not find an interaction effect between manipulated status and target $F(1, 82) = 0.81$, $p > .3$, $\eta_p^2 = .01$.

Perceived Warmth and Competence

We analyzed competence and warmth[1] scores with a series of 2 (Target: psychologists vs. engineers) × 2 (Status: high vs. low) analysis of variance (ANOVA) with both factors varying between participants (for condition means and *SD*s, see Table 1). Considering competence ratings, the analysis yielded only a main effect of status, $F(1, 82) = 18.88$, $p < .01$, $\eta_p^2 = .19$, indicating that high status targets were perceived as more competent ($M = 3.97$; $SD = .71$) than low status targets ($M = 3.18$; $SD = .95$). For all other effects, $p > .46$

Table 1. Mean scores (*SD*) of warmth and competence ratings by experimental condition

Trait	Target	Status	
		Low	High
Warmth	Psychologists	2.88 (0.77)	3.77 (0.73)
	Engineers	2.77 (0.99)	2.67 (0.59)
Competence	Psychologists	3.22 (0.90)	3.88 (0.71)
	Engineers	3.13 (1.02)	4.06 (0.72)

For the warmth ratings, the analysis yielded a main effect of target, $F(1, 82) = 12.98$, $p < .01$, $\eta_p^2 = .14$. Participants evaluated psychologists as warmer ($M = 3.33$; $SD = .87$) than engineers ($M = 2.71$; $SD = .80$). We also found a main effect of status, $F(1, 82) = 5.65$, $p < .05$, $\eta_p^2 = .06$. Participants rated high status targets as warmer ($M = 3.21$; $SD = .86$) than low status targets ($M = 2.82$; $SD = .88$). More importantly, the analysis also yielded a significant target by status interaction effect, $F(1, 82) = 8.83$, $p < .05$, $\eta_p^2 = .10$. Within the psychologist condition participants rated high status psychologists as being warmer ($M = 3.77$; $SD = .73$) than low status psychologists ($M = 2.87$; $SD = .77$, $p < .01$). Within the engineer condition, we found no significant effect of status ($p > .60$). These findings supported Hypoth-

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[1]   To ascertain whether warmth and competence were two different constructs as previous studies had demonstrated (for a review, see Cuddy et al., 2008), we ran confirmatory factor analyses (for a similar procedure with the same constructs see Lin, Kwan, Cheung, & Fiske, 2005). The six items for psychologists and for engineers were analyzed separately. Two different factor models were tested for each item set. In Model 1, representing the possibility that all of the items reflect a single dimension, all six items loaded on one factor. In Model 2, representing the possibility that the items reflect two dimensions, the items loaded on two different factors (i.e., warmth and competence). Looking at psychologists, fit statistics were satisfactory for the two-factor model (χ^2 (8) = 12.10, $p > .15$; GFI = .92; CVI = .86; RMSEA < .10). Conversely, they were not adequate for the one-factor model (χ^2 (9) = 24.78; $p < .001$; GFI = .84; CVI = 1.12; RMSEA > .20). Considering engineers, fit statistics were satisfactory for the two-factor model (χ^2 (8) = 5.36, $p > .7$; GFI = .96; CVI = .77; RMSEA < .05), but not adequate for the one-factor model (χ^2 (9) = 88.62, $p < .001$; GFI = .11; CVI = 2.40; RMSEA > .4).
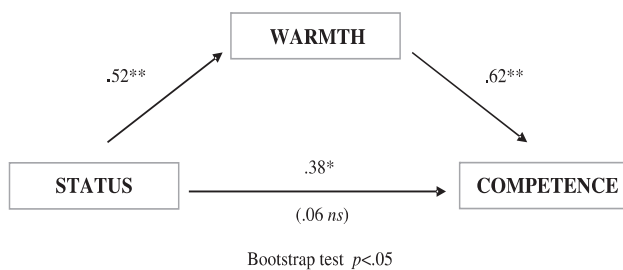
Figure 1. Mediational analysis, psychologists (i.e., health-care setting).

Figure 2. Mediational analysis, engineers (i.e., control condition).

esis 1, indicating that perceived group status affects warmth judgments when warmth traits are perceived as crucial to goal achievement.

Mediation Analyses

According to Hypothesis 2, a mediational model with warmth as a mediator between status and competence should be supported when the target group is psychologists but not when the target group is engineers. Following Baron and Kenny (1986), we conducted a first set of regression analyses for the target group psychologists. Here we found that the manipulation of group status (coded as: low = 0, high = 1) predicted competence stereotypes ($\beta = .38$, $p < .05$). Furthermore, the manipulation of group status also predicted warmth stereotypes ($\beta = .52$, $p < .01$). Finally, when warmth stereotypes were included in the regression equation, these positively predicted competence stereotypes ($\beta = .62$, $p < .01$), whereas the direct effect of the manipulation of group status on competence stereotypes was no longer significant ($\beta = .06$, $p > .60$). The reduction in the direct effect of status on competence stereotypes after accounting for warmth judgments was significant (Bootstrap test = .55, $p < .05$)[2], indicating that the effect of status on competence judgments was mediated by warmth stereotypes (see Figure 1). We also tested for the reverse model, in which competence stereotypes were used as the potential mediator and warmth judgments as the dependent variable. Results indicated that the independent variable (i.e., manipulated group status) continued to significantly affect perceived warmth ($\beta = .32$, $p < .05$) after controlling for competence stereotypes.

In a second set of regression analyses, for the target group engineers, we found that perceived status only affected the attribution of competence, as previous studies had demonstrated (see Figure 2).

Additional analyses showed that perceived competition was affected neither by group status, nor by target, nor by their interaction, F values(1, 79) < 1.49, p values > .25. Furthermore, for 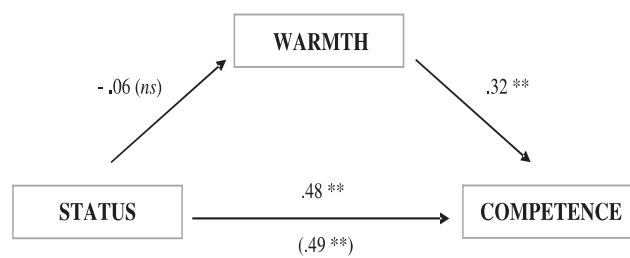psychologists, the manipulation of group status continued to significantly affect perceived warmth after controlling for perceived competition ($\beta = .49$, $p < .01$), and the effect of perceived competition on warmth stereotypes was not significant ($\beta = -.19$, $p > .15$).

Discussion

As discussed in the Introduction, research on perceived group status and the two fundamental dimensions of group perception showed that status is a positive predictor of competence but not of warmth stereotypes, or it may sometimes predict warmth stereotypes negatively. The universality of such a relationship across contexts and groups was emphasized over its possible malleability (see Cuddy et al., 2008). The current research explores whether, and in which situations, perceived group status positively predicts both competence and warmth judgments. The results fully support our hypothesis that perceived group status positively predicts competence as well as warmth stereotypes in contexts in which warmth traits are considered necessary to achieve a goal (Hypothesis 1). Moreover, in such contexts, the relationship between group status and competence is fully mediated by warmth stereotypes (Hypothesis 2). We consider such findings a novel contribution to research on the two fundamental dimensions of group perception and perceived group status. Indeed, previous research showed that culture influences group status and perceived group competition. Hence, specific group stereotypes on warmth and competence vary crossculturally (see Cuddy et al., 2009). However, the relationship between stereotype content dimensions and their predictors was assumed to be fixed. Extending prior research, we provide support for the assumption that the relationship between the two fundamental dimensions of group perception and group status is contextually malleable. Research to date had suggested that status does not positively predict warmth. However, our study shows that this relationship emerges if specific contexts are examined (i.e., the healthcare setting).

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[2] Given the small sample size, a bootstrap analysis was employed to test the mediation effect (Preacher & Hayes, 2004). As the confidence interval around the indirect effect did not contain zero, this analysis provided evidence for a significant mediation effect (point estimate unstandardized $b = .55$; 95% confidence interval around $b = .20$ to 1.01; 5000 bootstrap resamples).

One limitation of the present research should be acknowledged. We considered only professional groups and manipulated the target group to operationalize different professional contexts. One direction that would be interesting to take in further research is to go beyond the professional context and look at how group status affects warmth and competence stereotypes as a function of the relevance of warmth to pursue a goal without manipulating the target group. For example, it could be interesting to explore how status affects warmth and competence stereotypes when a group is involved in tasks in which warmth traits are either necessary to pursuing a goal (e.g., to resolve an international conflict mediating different economic and political interests) or unrelated to pursuing a goal (e.g., to obtain funds in order to finance the construction of a building).

Acknowledgments

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Appendix A

Descriptions of the Target Group in the High and Low Status Conditions

High Status Condition

According to a recent ministerial report (ind_prof_2008), psychologists' (engineers') socioeconomic status has changed significantly over the past 5 years. Currently, psychologists (engineers) are well educated and economically successful. Moreover, the psychologists' (engineers') average income is quite high in comparison to other professions. Finally, the ministerial investigation reports that the profession of psychologist (engineer) is considered to be a prestigious job.

Low Status Condition

According to a recent ministerial report (ind_prof_2008), psychologists' (engineers') socioeconomic status has changed significantly over the past 5 years. Currently, psychologists (engineers) are not well educated and are not economically successful. Moreover, the psychologists' (engineers') average income is quite low compared to other professions. Finally, the ministerial investigation reports that the profession of psychologist (engineer) is not considered to be a prestigious job.

Appendix B

Items Used to Measure Warmth, Competence, Status, and Competition

Warmth	How likely it is that psychologists (engineers) are …? [warm, kind, understanding]
Competence	How likely it is that psychologists (engineers) are …? [competent, capable, skillful]
Status	How economically successful are psychologists (engineers)? How prestigious are the jobs typically achieved by psychologists (engineers)?
Competition	Tell us to what extent you agree with the following items: The more power psychologists (engineers) have, the less power people like you and of your future profession are likely to have. Resources that go to psychologists (engineers) are likely to be taken away from resources of people like you and of your future profession.

Note. For the competence and warmth scales, the points of ellipsis were replaced by the words in brackets for each question.