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### Abstract

Previous research has shown that the people in low status, negatively-valued groups are perceived to be more homogeneous than the people in high status, positively-valued groups. The present research investigated the possibility of an opposite effect in which people perceive positive groups to be more homogeneous than negative groups. The researchers hypothesized that winning groups would be perceived to be more homogenous than losing groups because group homogeneity is associated with group cohesiveness, and group cohesiveness has a positive value in the context of an intergroup competition. In a first experiment ( $N = 175$ ), target groups varied according to their objective group variability and whether they won or lost a competition. As predicted, winning groups were perceived to be significantly more homogenous than losing groups regardless of their objective variability. In a second experiment ( $N = 186$ ), these effects were replicated using different social groups, and the effect of group performance on homogeneity judgements was mediated by perceptions of group cohesiveness.

### The Effects of Winning and Losing on Perceived Group Variability

Judgements of a group's homogeneity are highly contextual. They depend on the group's status (Badea & Deschamps, 2009; Lorenzi-Cioldi, 1998; Sachdev & Bourhis, 1991), size (Badea & Askevis-Leherpeux, 2005; Simon & Brown, 1987), power (Brauer, 2001; Guinote, Judd, & Brauer, 2002), the intergroup comparison dimension (Rubin & Badea, 2007, 2010), and whether or not the perceiver belongs to the target group (Park & Judd, 1990; Quattrone & Jones, 1980). It is now well established in the literature that the members of low status groups, minority groups, and groups with low social power are evaluated as being more similar one to each other than the members of high status groups, majority groups, and groups with high social power.

Two interpretations have been suggested to explain this effect. First, this difference has been interpreted as a *subjective perceptual bias* due to perceivers' knowledge of each group's social position. This bias may be due to the attributions that people make about group members' behaviour (Brauer & Bourhis, 2006). Overbeck, Tieden, and Brion (2006) found that people tend to make dispositional attributions for the behaviour of high power individuals but situational attributions for the behaviour of low power individuals. Consequently, members of high social power groups are more individualized than those of low social power groups. Another possible explanation for this subjective perceptual bias is that individuals are more attentive to members of advantaged groups (Brauer & Bourhis, 2006). For example, people make more mistakes in identifying members of disadvantaged groups than they do in identifying members of advantaged groups (Fiske, Haslam, & Fiske, 1991). They also understand and react more quickly to demands from members of advantaged groups than from members of disadvantaged groups (Holtgraves, 1994).

An alternative, but complementary, explanation is that these differences reflect *objective differences* in the variability of socially asymmetrical groups that can occur in the absence of knowledge about each group's social position (Guinote et al., 2002). Research has shown that members of high power groups talk longer, describe themselves in more abstract and dispositional terms, and mention more interests and activities than members of low power groups (Brauer, 2001; Chappe, Brauer, & Castano, 2004; Guinote, et al., 2002). In addition, Berdahl and Martorana (2006) showed that high power individuals display a higher number of positive emotions than low power individuals.

The subjective and objective explanations are complementary, and they support the idea that perceptions of homogeneity tend to have negative associations. In particular; homogeneous groups are usually low status, low power, minority groups, whose members are perceived in less individualistic terms, receive less attention, and display less positive emotions. Homogeneous groups are also more often the subject of stereotyping and discrimination than heterogeneous groups (Brauer & Er-Rafiy, 2011). However, some studies suggests that judgements of a group's homogeneity can be relatively flexible and context-specific, and that group homogeneity may carry a positive meaning under certain circumstances.

### The Variability and Significance of Group Homogeneity Judgements

Recent research has shown that a group's winning performance may be associated with higher within-group similarity (Jehn et al., 1999; Murnighan & Conlon, 1991; Simons et al., 1999). For example, Murnighan and Conlon (1991) showed that the members of more successful classical music quartets have a greater tendency to be unanimous in their opinions about their music repertoire. They also saw their fellow group members as very similar "in all the important ways" with respect to music. More recently, Rubin and Badea (2010) examined the homogeneity judgements of a group of fashion designers who were presented as either winners or losers of a fashion competition. Participants perceived winners to be more homogenous than losers on positive traits and less homogeneous on negative traits. This

effect was fully mediated by the extent to which the two groups were believed to possess the trait under consideration. In other words, judgements of group variability were determined by the participants' heuristic that "homogeneity equals possession of traits" (see also Rubin & Badaea, 2007): Winning groups were rated as being more homogeneous on positive traits (e.g., creative, hardworking) because they were perceived to possess these traits to a greater extent than losing groups. Finally, Simon and Brown's (1987) research supports the idea that the perception of in-group homogeneity increases the 'groupness' of the in-group relative to the out-group and highlights the superiority of the in-group vis-à-vis the social support and solidarity that it offers its members.

Taken together, this line of research suggests that judgements of group homogeneity are sensitive to factors other than the knowledge of social hierarchies or objective variability. In particular, group homogeneity judgements appear to be influenced by the *meaning* of group homogeneity within specific contexts (Voci, 2000). It should be noted, however, that in the studies reported above, the positive connotations of group homogeneity may have been due to objective differences in variability rather than a subjective perceptual bias. The aim of the present research was to investigate the possibility of a genuine perceptual bias in which people perceive positive groups to be more homogeneous than negative groups regardless of their actual, objective level of group homogeneity.

It is important to investigate the way in which context influences biased perceptions of group variability for both theoretical and practical reasons. From a theoretical perspective, the influence of context has always been underestimated in the area of perceived group variability. Indeed, researchers initially focused on the out-group homogeneity effect (for a review, see Ostrom & Sedikides, 1992) before identifying moderators in the social context that produced an in-group homogeneity effect (e.g., Simon & Pettigrew, 1990). The present research aimed to contribute towards a deeper appreciation of the effects of context on biased perceptions of group variability. From a practical perspective, the present research will lead to a better understanding of stereotyping in general and, consequently, more effective approaches in addressing negative stereotypes and associated prejudice.

### **Group Performance and Group Homogeneity**

In the present research, we examined the perception of group homogeneity in the context of group performance during an intergroup competition. We assumed that group homogeneity can be seen as a positive quality in this context because it is related to cohesiveness, and cohesiveness is related to better group performance.

There are a variety of reasons why winning groups should be seen as more homogeneous in the context of an intergroup competition. First, although group status (high/low) may be negatively related to group homogeneity, group performance (winning/losing) is conceptually distinct from group status and, consequently, has a different relation with group homogeneity. In particular, group status is a relatively stable characteristic that is related to historical intergroup conflicts and legitimized by ideologies and social beliefs (Jost & Banaji, 1994). In contrast, group performance in an intergroup competition is a more dynamic characteristic that may vary considerably across time and according to the nature of the competition. So, for example, while both high status and winning are positively valued, the status conferred by winning depends on the nature of the competition. For example, winning a cake eating contest might not necessarily confer high status.<sup>1</sup>

Second, winning groups are perceived to be more cohesive than losing groups, and cohesiveness is associated with greater homogeneity. Generally, cohesiveness is inferred from the number and strength of mutual positive attitudes among members of a group (Taylor, Doria, & Tyler, 1983). Most theorists assume that cohesiveness and group performance influence each other mutually (Farris & Lim, 1969; Turner, Hogg, Turner, &

Smith, 1984). However, in a meta-analytic integration of the relation between group cohesiveness and performance, Mullen and Cooper (1994) showed that the most direct effect is likely to be from performance to cohesiveness rather than from cohesiveness to performance (see also Fullagar & Egleston, 2008). Hence, group performance has the potential to affect perceived group cohesiveness.

Cohesiveness and homogeneity are two related aspects of the perception of social groups. Some research showed that the greater commitment of the members of work groups (Riordan & Shore, 1997; Tsui, Egan, & O'Reilly, 1992) and greater cohesion (O'Reilly, Caldwell, & Barnett, 1989) lead to increased perceptions of homogeneity. These studies suggest that winners might be perceived as being more cohesive than losers and, consequently, more homogenous.

### Experiment 1

The aim of our research was to show that a group's successful performance may cause observers to perceive it as relatively homogeneous because, in an intergroup competition, group homogeneity has a positive connotation that is associated with group cohesiveness. In our first experiment, participants learned about members of a fashion designer group that was presented as having either won or lost a fashion competition. Participants read the opinions that the group members had ostensibly given after the competition, and these opinions were either very similar or very different. Hence, we experimentally manipulated group performance and objective variability independently from one another. We predicted that winners would be perceived as being more homogenous than losers regardless of their objective variability.

**Method**  
**Participants and design.** We used a 3 (group performance: winners vs. losers vs. control) x 3 (objective homogeneity: positive homogeneity vs. negative homogeneity vs. heterogeneity) between-subjects design. We included positive and negative homogeneity conditions in order to make sure that the effects were not driven by the valence of the homogeneity.

We recruited 175 French first-year psychology undergraduate students (15 men, 160 women) from Lille 3 University, France. Participants were aged 17 to 34 years old ( $M = 19.54$ ). A female experimenter conducted the experiment across 15 sessions, each containing between 10 and 15 participants.

**Procedure.** Adapting a procedure originally used by Rubin and Badea (2010), we told participants that we were investigating how people perceive groups. Participants were asked to consider five groups of fashion designers who had ostensibly taken part in a fashion competition. Participants were told that each group of designers contained four people and was named after a colour: red, green, yellow, orange, and violet. In the winning condition, the red group occupied the first place in the performance ranking of the fashion competition. In the losing condition, the red group occupied the last place in the ranking. Finally, in the control condition, no information about the outcome of the competition was provided. Participants then viewed four portrait photographs each showing a young woman from the red group wearing a red t-shirt. The women were identified by a code (R1, R2, R3, and R4). Four statements were shown underneath each photograph. These statements were described as the women's personal opinions about the fashion competition. We manipulated the objective variability of the groups via these opinions about the competition. In the positive homogeneity condition, the four group members had a similar positive opinion (e.g., "The contest was very important for me. It was a pleasure to participate. I feel that it was a very enriching experience." "This competition counted a lot for me. I liked to present my ideas. I think that I learned a lot of things.")). In the negative homogeneity condition, the four group members had a similar negative opinion (e.g., "This was not a real competition. I cannot say that I enjoyed participating. But I think that it was a good experience." "This contest was of

no great importance to me. It was fun to participate. However, I did not learn much.”).<sup>2</sup> Finally, in the heterogeneous condition, two members of the group had a positive opinion, and two had a negative opinion.

Participants then completed a measure of general perceived intragroup homogeneity. The six items were: “Generally, the fashion designers of the red group are similar to each other”, “the red group is a collection of unique individuals” (reversed), “the red group of fashion designers is a homogenous group”, “generally, the fashion designers of the red group are different to one another” (reversed), “there is an important similarity between the fashion designers of the red group”, and “the Red group of fashion designers is heterogeneous” (reversed),  $\alpha = .77$ . To indicate their rating for each statement, participants drew a cross on a 10 cm horizontal line anchored *Not at all* at the left end and *Extremely* at the right end.

Finally, participants completed a group performance manipulation check, using the same 10 cm lines. The two statements were as follows: “the red group of designers won the fashion competition”, and “the red group of designers lost the fashion competition” (reversed). We also added a question about social status: “the red group of designers has a high social status”.

### Results and Discussion

We standardized and averaged the two group performance manipulation check items ( $\alpha = .77$ ). We then conducted a 3 x 3 between-subjects ANOVA with group performance (winners vs. control vs. losers) and objective homogeneity (positive homogeneity vs. negative homogeneity vs. heterogeneity) as independent variables. We observed a significant effect of group performance,  $F(2, 167) = 220.44, p < .001, \eta^2 = .79$ . Follow up independent sample *t* tests showed that the winning group had a significantly higher score on this measure ( $M = 9.00, SD = 1.66$ ) than the control group ( $M = 3.93, SD = 2.15; p < .001$ ) and the losing group ( $M = 1.02, SD = 1.68, p < .001$ ) and that there was also a significant difference between the control group and the losing group ( $p < .001$ ). These results indicate that our experimental manipulation of group performance was successful.

We conducted a 3 x 3 between-subjects ANOVA with perceived homogeneity as the dependent variable and group performance and objective homogeneity as independent variables. As expected, there was a highly significant main effect of objective homogeneity,  $F(2,132) = 8.75, p < .001, \eta^2 = .11$ , indicating that our experimental manipulation of objective homogeneity was successful. Follow up independent sample *t* tests showed that the red group was seen as significantly less homogeneous in the heterogeneity condition ( $M = 5.15, SD = 1.75$ ) than in the positive homogeneity condition ( $M = 6.75, SD = 2.00; p < .001$ ) and in the negative homogeneity condition ( $M = 6.34, SD = 2.02; p < .01$ ). There was no significant difference between the last two experimental conditions ( $p = .25$ ). Consistent with predictions, there was also a significant main effect of group performance,  $F(2,132) = 4.59, p < .02, \eta^2 = .07$ . As can be seen in Figure 1, winning groups were seen as more homogeneous ( $M = 6.47, SD = .23$ ) than losing groups ( $M = 5.48, SD = .23$ ) and groups whose outcome in the competition had not been mentioned ( $M = 5.41, SD = .24$ ). Further analyses revealed that the difference between the winning condition and the other two conditions was statistically significant,  $F(1,132) = 9.18, p < .003$ . Unexpectedly, the losing condition and the control condition did not significantly differ from each other ( $p = .99$ ). Finally, the group performance by objective homogeneity interaction was not statistically significant,  $F(4,132) = 1.10, p = .36$ . Hence, the homogenizing effect for winning groups occurred regardless of the group's objective level of variability.

We investigated the relation between perceived group status and perceived group homogeneity: there was no significant correlation between these measures ( $r = .09, p = .48$ ). Hence, our results are specific to winning and losing groups rather than to high and low status groups.

## Experiment 2

In Experiment 1 we found that a winning group of fashion designers was judged to be more homogeneous than a losing group of fashion designers, regardless of the group's objective homogeneity. Our second experiment had two goals. First, we aimed to replicate Experiment 1's results using different target groups in order to establish the generalizability of our results. Second, we wanted to examine whether our effect was mediated by perceived cohesiveness.

In Experiment 2, participants learned about architects who were presented as having either won or lost a building design competition. As in Experiment 1, we manipulated the group's objective variability via the architects' opinions concerning the competition. We also measured participants' perception of the group's cohesiveness in order to test its mediating effect between group performance and perception of homogeneity.

### Method

**Participants and design.** We used a 2 (group performance: winners vs. losers) x 3 (objective homogeneity: positive homogeneity vs. negative homogeneity vs. heterogeneity) between-subjects design. We recruited 186 French first-year psychology undergraduates (35 men, 140 women, 6 missing values), from Lille 3 University, France. Participants were aged 17 to 50 years old ( $M = 19.69$ ). The participants were randomly assigned to one of the six experimental conditions. A female experimenter conducted the experiment across 10 sessions, each containing approximately 15 participants.

**Procedure.** The procedure was the same as in Experiment 1 with the following exceptions: We used a group of architects instead of fashion designers. The competition was a building design competition and not a fashion competition. We measured perceived group cohesiveness after the measure of perceived general intragroup homogeneity using the following items, adapted from Wai-man Ip, Chiu, and Wan (2006): "I think that the Red group of architects worked well together", "I have doubts that the Red group of architects understood one another well" (reversed), "I do not think that the Red group of architects was a very cohesive group" (reversed), "I think that they were on the same frequency as one another", "I think that the Red group of architects had a common goal: to win the contest", and "I have doubts that they enjoyed working together" (reversed),  $\alpha = .85$ .

### Results and Discussion

A 2 (group performance) x 3 (objective homogeneity) between-subjects ANOVA with perceived homogeneity as the dependent variable revealed that our manipulation of objective variability was successful,  $F(2, 176) = 18.79, p < .001, \eta^2 = .17$ . The red group was seen as less homogeneous in the heterogeneity condition ( $M = 3.85, SD = 1.66$ ) than in the positive homogeneity condition ( $M = 5.99, SD = 1.91; p < .001$ ) and the negative homogeneity condition ( $M = 5.42, SD = 2.31; p < .001$ ). Consistent with predictions, there was also a significant main effect of group performance,  $F(1, 176) = 4.47, p < .04, \eta^2 = .03$ . As can be seen in Figure 2, winning groups were seen as more homogenous than losing groups ( $M = 5.41, SD = .21$  vs.  $M = 4.77, SD = .21$ ). The interaction between group performance and objective homogeneity was not statistically significant,  $F(2, 176) = .10, p = .90$ , suggesting once again that the homogenizing effect for the winning group occurred regardless of its objective level of variability.

The effects of the independent variables on perceived cohesiveness mirrored those on perceived homogeneity. Both main effects were statistically significant ( $p$ 's  $< .001$ ) whereas the interaction was not ( $p = .77$ ). Winners were seen as more cohesive ( $M = 6.67, SD = 1.90$ ) than losers ( $M = 5.24, SD = 2.09$ ),  $F(1, 177) = 24.21, p < .001$ .

Before considering a test of mediation, we investigated the divergent validity of our proposed mediator (perceived cohesiveness) and our dependent variable (perceived homogeneity). The measures of perceived cohesiveness and homogeneity were significantly

correlated with one another  $r = .30$ ,  $p < .001$ , however, this correlation was not sufficiently large to threaten their divergent validity. Consistent with this interpretation, a factor analysis with principal axis factoring and direct oblimin rotation showed that the perceived cohesiveness items and the perceived homogeneity items loaded on two separate factors. All cohesiveness items had factor loadings  $>.30$  on the first factor and  $<.30$  on the second factor, whereas the opposite was true for the perceived homogeneity items. The correlation between the two rotated factors was .32.

Mediational analyses revealed that the effect of group performance on perceived group homogeneity ( $\beta = .15$ ,  $t = 2.11$ ,  $p < .04$ ) became non-significant when perceived cohesiveness was added to the model ( $\beta = .05$ ,  $t = .79$ ,  $ns$ , see Figure 3). We used Imai, Keele, and Tingley's (2010) bootstrapping procedure (and R script) to compute a confidence interval around the indirect effect (i.e., the path through the mediator). Results revealed that the indirect effect via perceived variability equalled .43, the 95% confidence interval ranging from .12 to .79. The fact that zero falls outside this interval indicates a significant mediation effect,  $p < .05$ . The data were inconsistent with a different mediational model in which perceived homogeneity was the mediator. The effect of group performance on perceived cohesiveness remained more or less the same, regardless of whether perceived homogeneity was added to the model ( $\beta = 1.33$ ,  $t = 4.69$ ,  $p < .001$ ) or not ( $\beta = 1.42$ ,  $t = 4.92$ ,  $p < .001$ ).

Again, we investigated the relation between perceived group status and perceived group homogeneity and their correlation was not significant ( $r = -.02$ ,  $p = .85$ ). Consequently, social status cannot act as a mediator of the effect of group performance on perceived group homogeneity.

### General Discussion

The aim of our research was to demonstrate that individuals perceive winning groups to be more homogenous than losing groups because, in the context of an intergroup competition, group homogeneity acquires a positive significance due to its association with group cohesiveness. We conducted two experiments that support this prediction: In the first experiment, we experimentally manipulated group performance and objective variability independently from one another. Results showed that winners were perceived as more homogenous than losers regardless of their objective variability. In the second experiment, we replicated our effects using a different group, and we showed that the effect of group performance on homogeneity judgements was mediated by perceptions of group cohesiveness.

The present research findings provide evidence for the idea that judgements of group homogeneity are sensitive to the context-specific significance of the homogeneity. Previous research has shown that a group's positive performance may be associated with higher group homogeneity (Jehn et al., 1999; Murnighan & Conlon, 1991). However, this greater perceived group homogeneity could possibly be due to objective differences in variability rather than a perceptual bias. In our studies, we controlled for the objective variability of winning and losing groups and, consequently, this variable cannot explain the difference in the perception of these groups. Hence, we show the existence of a genuine subjective perceptual bias in which people perceive winning groups to be more homogeneous than losing groups.

At first glance, our results appear to be inconsistent with previous research that has found that people perceive high status groups to be less homogeneous than low status groups (e.g., Brown & Smith, 1989; Cabecinhas & Amâncio, 1999; Lorenzi Cioldi, Deux, & Dafflon, 1998). However, the key point of our paper is that people's interpretation of group homogeneity depends on its context, and in the context of group performance, group homogeneity can be seen as a positive quality because it is related to cohesiveness and cohesiveness is related to better group performance. Hence, group performance (i.e., winning



vs. losing), rather than group status (high vs. low), caused the observed homogeneity effects in the present research.

We should note that it is possible that group homogeneity can have a negative meaning in an intergroup competition context. We take the example of a competition involving decision-making task. Many studies show that individuals are more confident in a given decision if this decision was taken by heterogeneous individuals (see for example, Lopez, Vala, & Garcia-Marquez, 2007). Goethals and Klein (2000) proposed an explanation for the positive role of heterogeneity in the validation of group decisions: Individuals perceive more participation and debate in a heterogeneous group than in a homogeneous one, and that perceived debate leads them to attribute greater validity to heterogeneous group opinions and decisions (see also, Vala et al, 2011). Hence, in this case, group heterogeneity is used as a cue to infer the validity of decisions, and consequently perceived group homogeneity can have a negative meaning. Research on homogeneity judgements should investigate the type of task realised by groups in the competition.

### **Conclusion**

In summary, our research contributes to the literature in this area by providing the first demonstration that, independent of objective variability, people can perceive positive groups to be more homogeneous than negative groups. It also provides an explanation for this effect in terms of the relationship between group cohesiveness and group homogeneity in the context of an intergroup performance competition. However, research on variability judgments should examine carefully each social context in which an intergroup competition takes place.

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### **Footnotes**

1. Note that group identification and the value attributed to the competition may moderate the extent to which winning is related to group status. Hence, to return to our example of a cake-eating competition, winning may be positively related to group status among professional cake-eaters and, consequently, winning may cause perceptions of high in-group homogeneity for this group.

2. The negative opinions were rather ambivalent. It was necessary to use ambivalent opinions because group members who won a competition but who had an entirely negative opinion about the competition would appear illogical and unrealistic to our participants. Hence, in the negative homogeneity condition, we used only moderately negative statements that could conceivably be attributed to members of a winning group. In this sense, our methodology aimed to produce an ecologically valid manipulation of positive and negative homogeneity.

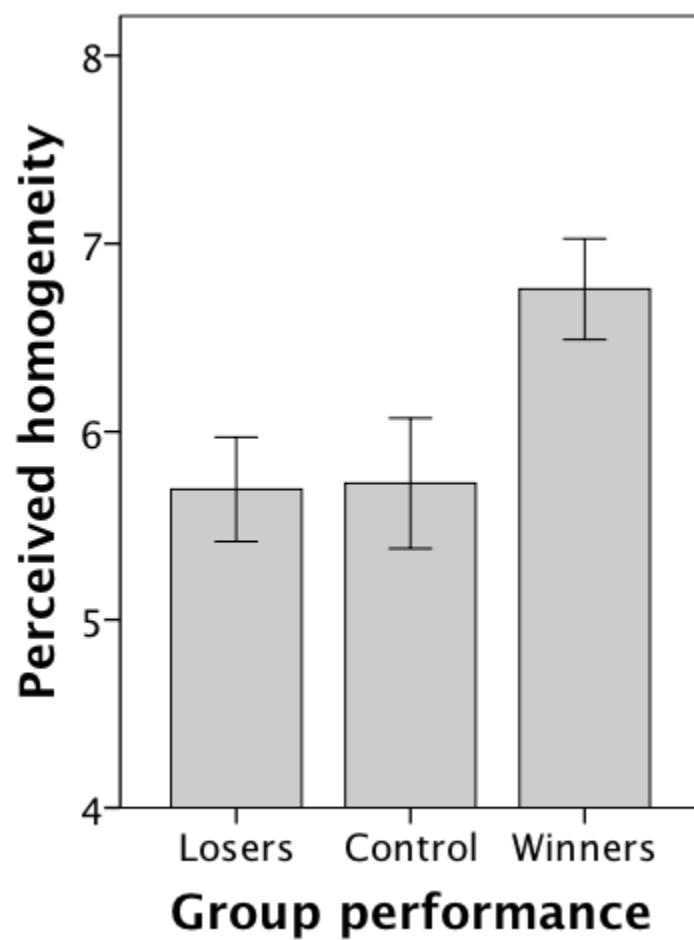


Figure 1: Perceived homogeneity as a function of group performance in Experiment 1.

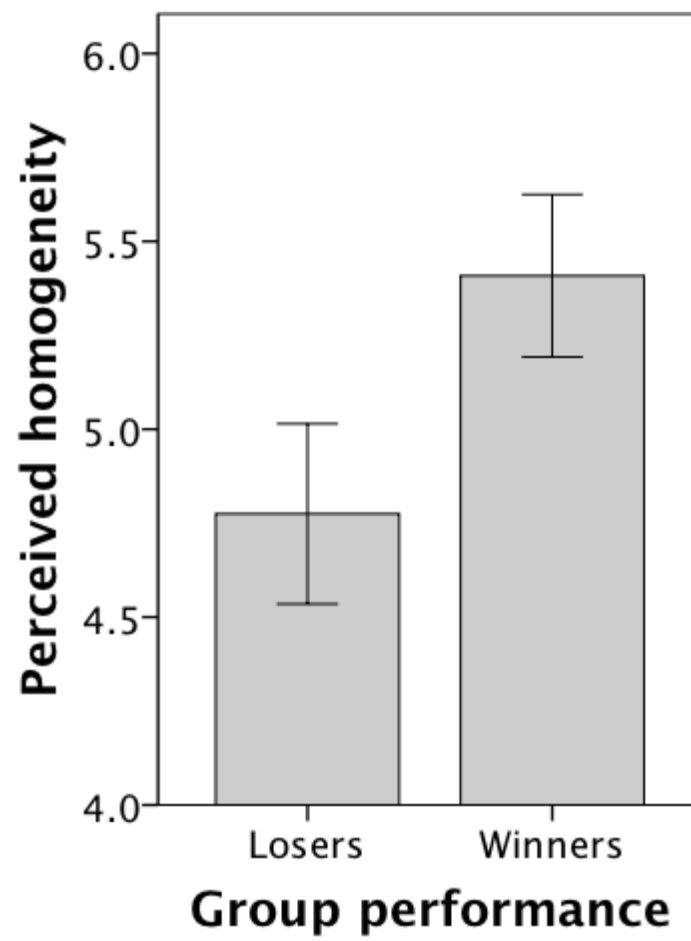


Figure 2: Perceived homogeneity as a function of group performance in Experiment 2.

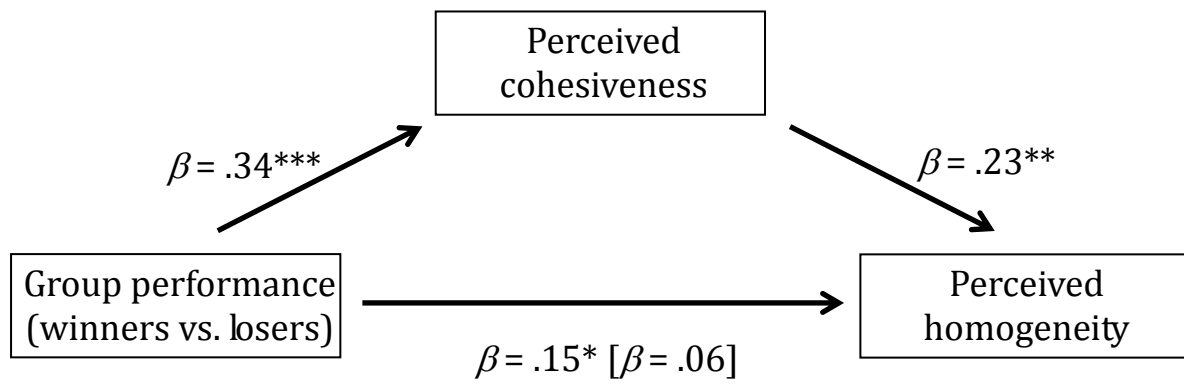


Figure 3: Analyses showing that the effect of group performance on perceived homogeneity is mediated by perceived cohesiveness in Experiment 2