

# Intergroup Perception in the Social Context: The Effects of Social Status and Group Membership on Perceived Out-group Homogeneity and Ethnocentrism

Markus Brauer

*C.N.R.S. and University Blaise Pascal, Clermont-Ferrand, France*

Received March 13, 1999; revised March 1, 2000; accepted March 14, 2000

This article examines the impact of social status on two well-known effects in intergroup perception, the out-group homogeneity effect and the ethnocentrism effect. Researchers have recently argued that these effects are asymmetrical and depend on the social status of the participants. However, this conclusion is based on studies that included only two participant groups and two target groups. We argue that conclusions about asymmetries in intergroup perception cannot be drawn from studies conforming to such a design. A new study involving four groups was therefore conducted to examine the relation between intergroup perception and social status. Members of two high-social-status groups (doctors and lawyers) and two low-social-status groups (hairdressers and waiters) participated. Both out-group homogeneity and ethnocentrism were assessed. Comparison of the effect sizes for the Participant Group  $\times$  Target Group interactions constituted the test of asymmetry. The classic (symmetric) view accounted well for differences in perceived variability: all groups showed the out-group homogeneity bias. Ethnocentrism also appeared to be a symmetrical effect, though it was somewhat more pronounced for low-status groups. The dominant finding in the current literature, namely that out-group homogeneity and ethnocentrism are more pronounced for high-status groups, received no support. © 2001 Academic Press

Recent work on intergroup relations has focused on two perceptual biases, the “out-group homogeneity effect” and the “ethnocentrism effect.” The out-group homogeneity effect refers to the tendency to view members of out-groups as more homogeneous than members of the in-group (Judd & Park, 1988; Park & Rothbart, 1982; Quattrone & Jones, 1980). Men and women (Park & Judd, 1990), engineering majors and business majors (Park, Ryan, & Judd, 1992), and both young and old people (Linville, Fischer, & Salovey, 1989) all show this effect. The “ethnocentrism effect” refers to the tendency to derogate out-groups and/or favor the in-group. When asked to attribute positive and negative attributes to target groups, to distribute resources among different people, or to indicate liking for several groups, individuals generally favor their in-group over the out-group.

This work was partially supported by DFG grant BR 1674/1-1 to Markus Brauer. We thank Charles Judd, Paula Niedenthal, Michel Chambon, and Carey Ryan as well as two anonymous reviewers for their comments on earlier versions of this article.

Address correspondence and reprint requests to Markus Brauer, Laboratoire de Psychologie Sociale de la Cognition, Université de Clermont-Ferrand, 34, Avenue Carnot, 63037 Clermont-Ferrand Cedex, France. E-mail: Markus.Brauer@srvpsy.univ-bpclermont.fr.

This effect has been demonstrated in a variety of settings, with natural and with artificial groups, and with numerous measures of liking and/or favoritism (Brown, 1995; Levine & Campbell, 1972; Tajfel, 1982).

Although both the out-group homogeneity effect and the ethnocentrism effect are robust, several researchers have argued recently that such effects are not inevitable and that they depend instead on the social status of the group to which the perceiver belongs. For example, Lorenzi-Cioldi and his colleagues demonstrated that the out-group homogeneity effect is less pronounced for women than for men (Lorenzi-Cioldi, 1993; Lorenzi-Cioldi, Eagly, & Stewart, 1995). Lee and Ottati (1993) found that Americans, but not Chinese, tended to see the out-group as more homogeneous than their own group. Brewer (1979) reviewed several studies that showed that members of “winning” groups (groups that scored higher on a performance task) favored in-groups to a greater extent than did members of “losing” groups. And finally, in a study by Judd, Park, Ryan, Brauer, and Kraus (1995) of intergroup attitudes among college students, African American participants displayed ethnocentrism, but White American participants did not (for a review of

TABLE 1  
Four Hypotheses Concerning the Role of Social Status in Outgroup Homogeneity and Ethnocentrism Effects

Classic hypothesis	Members of high-status groups and members of low-status groups have biased perceptions of out-groups.
Superiority hypothesis	Members of high-status groups have biased perceptions of out-groups, whereas members of low-status groups do not.
Inferiority hypothesis	Members of low-status groups have biased perceptions of out-groups, whereas members of high-status groups do not.
Antagonistic hypothesis	Members of low-status groups have biased perceptions of high-status out-groups and members of high-status groups have biased perceptions of low-status out-groups.

asymmetric out-group homogeneity effects, see Devos, Comby, & Deschamps, 1996; for asymmetric ethnocentrism effects, see Mullen, Brown, & Smith, 1992). Although there is now considerable evidence showing that social status can influence the extent to which perceivers show the homogeneity bias and the ethnocentrism bias, the direction of the influence and its interpretation are inconsistent across studies. Whereas in most studies, high-status perceivers are more likely than low-status perceivers to exhibit these biases (e.g., Lorenzi-Cioldi et al., 1995), some studies report the opposite pattern (e.g., Judd et al., 1995). The purpose of this article is to examine such asymmetries by measuring the effects of social status on the perceived variability of, and the liking for, in-groups and out-groups. Does the social status of an individual's in-group affect the extent to which he or she displays out-group homogeneity and ethnocentrism? If so, then is it the low-status group or the high-status group that displays stronger intergroup biases?

Four hypotheses can be advanced concerning the role of social status in intergroup biases (see Table 1). We begin by discussing these hypotheses in some detail. We then evaluate prior research that tried to test at least some of the alternative hypotheses. Our conclusion is that the experimental designs of most previous research on these effects did not allow adequate tests of the asymmetry hypothesis. After describing the type of research that is required to test the hypothesis that social status moderates intergroup biases, we then report an exemplary study.

#### SOCIAL STATUS AND INTERGROUP PERCEPTION

What might be called the *classic hypothesis* holds that intergroup biases do not depend on the social status of the individual's in-group. The original theoretical accounts of out-group homogeneity effects (Judd & Park, 1988; Linville et al., 1989) considered them to be an inevitable perceptual consequence of social categorization. For example, according to Park and Rothbart's (1982) dual storage model, judgments about the out-group are based primarily on information about the group as a whole, whereas judgments about the in-group are based on both group level information and information about particular group exemplars (including the self). Given that information about exemplars is

likely to increase the perceived variability of a group, there is a tendency for everyone to perceive in-groups as more heterogeneous than out-groups (Jones, Wood, & Quattrone, 1981; Judd, Ryan, & Park, 1991; Linville, Salovey, & Fischer, 1986; Park & Judd, 1990; Quattrone & Jones, 1980). More recent theoretical accounts also insist that people develop more differentiated cognitive structures to represent and organize information about the in-group than about the out-group (Ostrom, Carpenter, Sedikides, & Li, 1993; Park et al., 1992).

For ethnocentrism, the same prediction can be made, but for different reasons. According to Tajfel, Flament, Billig, and Bundy (1971), individuals derogate out-groups to maintain a positive self-evaluation. Because a positive self-evaluation is maintained when social comparison between the in-group and the out-group favors the in-group, individuals focus on the positive characteristics of the in-group and the negative characteristics of the out-group. This tendency is so strong that ethnocentrism can be observed even when the assignment to groups is arbitrary and when group members do not have a chance to interact with each other, as in the minimal group paradigm (Howard & Rothbart, 1980; Levine & Campbell, 1972; Locksley, Ortiz, & Hepburn, 1980; Rabbie & Horwitz, 1969).

The *superiority hypothesis* holds that out-group homogeneity and ethnocentrism effects are more pronounced for high-status groups than low-status groups. Lorenzi-Cioldi (1998) reviewed the literature on the relationship between social status and the out-group homogeneity effects and concluded that status differences partially outweigh intergroup biases. That is, members of high-status groups focus on the diversity of the in-group and, as a result, see their own group as more heterogeneous than the out-group. Members of low-status groups, in contrast, focus on characteristics they share with other members of their own group and thus view the out-group as equally variable (or even more variable) than the in-group (Brown & Smith, 1989; Lee & Ottati, 1993; Lorenzi-Cioldi, 1988, 1993; Lorenzi-Cioldi et al., 1995; Sedikides, 1997; Simon, 1992; but see Klauer, Ehrenberg, & Wegener, 1999).<sup>1</sup>

<sup>1</sup> Fiske (1993) also predicts an asymmetric out-group homogeneity effect, which she believes is due to differences in outcome dependency. People in powerless, subordinate positions are forced to attend to individual characteristics of their superordinates because their future and career

With respect to ethnocentrism, many researchers have suggested that members of high-status groups are motivated to justify their superior position by attributing negative traits to members of low-status out-groups (Brewer, 1979; Sachdev & Bourhis, 1987, 1991; Hinkle & Brown, 1990). More generally, according to the system-justification approach (Jost & Banaji, 1994; Jost & Burgess, 2000), most people are motivated to defend the ideological integrity of existing social systems and to legitimize existing social arrangements. This may increase the tendency for high-status groups to derogate low-status out-groups, but, at the same time, decrease the tendency of low-status groups to display in-group favoritism (Clark & Clark, 1947; Ellemers, Wilke, & van Knippenberg, 1993; Hewstone & Ward, 1985; Mlicki & Ellemers, 1996; Ryen & Kahn, 1975; Skevington, 1981).

The *inferiority hypothesis* makes exactly the opposite predictions. According to this hypothesis, out-group homogeneity and ethnocentrism effects are stronger for members of low-status groups than for members of high-status groups. People belonging to low-status groups can protect their self-esteem by attributing their low status to group membership rather than to personal qualities or failures (Crocker & Major, 1989). As a result, members of low-status groups have a “groupy” view of their social environment. They view society as divided into groups, with group membership accounting for a given person’s behavior and character traits (Lewin, 1948; McGuire, 1984). People belonging to high-status groups, in contrast, have an interest in minimizing group differences. They attribute their superior social position to personal effort or attributes. As a result, members of high-status groups see the environment as composed of individuals rather than groups (Sidanius & Pratto, 1993). If low-status groups indeed have a “groupy” view of their social environment, whereas high-status groups tend to see their social environment in individualistic terms, then members of low-status groups should show the classic intergroup biases to a greater extent than members of high-status groups.

With regard to perceived variability, there is relatively little evidence for the inferiority hypothesis. According to our knowledge, there is only one study in which low-status group members displayed stronger out-group homogeneity effects than did high-status group members. Specifically, in Judd et al.’s (1995) study of intergroup perceptions among American college students, African American participants displayed out-group homogeneity effects, but White American participants did not. Postexperimental questionnaires and interviews indicated that White Americans seemed to

adopt a “color-blind” perspective, whereas African American favored a “cultural pluralism” perspective. Other researchers have found that low-status or deprived groups tended to be more ethnocentric than high-status or winning groups (Branthwaite & Jones, 1975; Brewer & Campbell, 1976; Brown & Smith, 1989; Dutton, 1976; Grant & Brown, 1995; Judd et al., 1995).

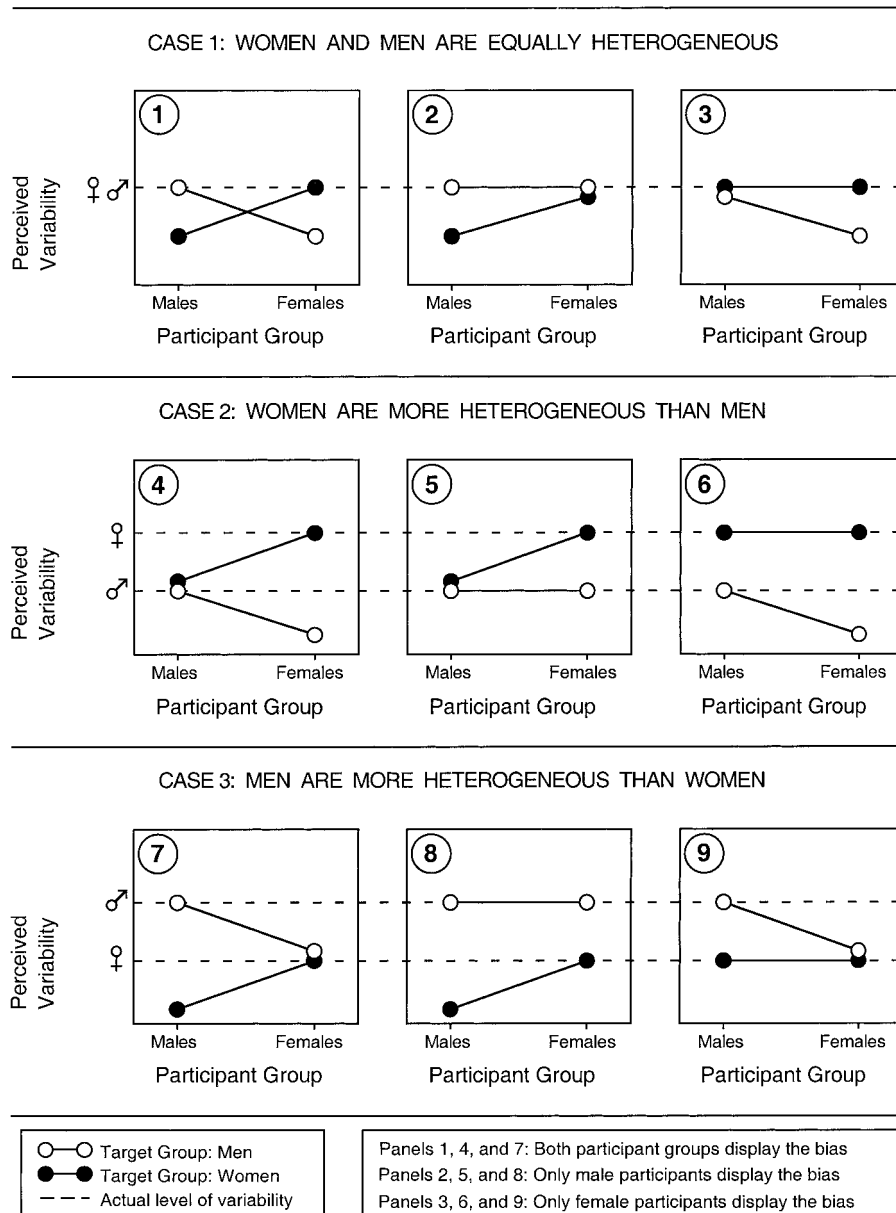
The *antagonistic hypothesis* offers a final account of intergroup biases. Note that the predictions of the “superiority hypothesis” and the “inferiority hypotheses” depend solely on the characteristics of the perceivers. It is the social status of the perceiver’s in-group that determines whether s/he displays the intergroup bias. However, out-group homogeneity and ethnocentrism may also be affected by the social status of the out-group. Imagine an intergroup situation with several high-status groups and several low-status groups. The superiority hypothesis predicts that high-status people will display stronger out-group homogeneity and ethnocentrism effects, but the inferiority hypothesis predicts that they will not. However, judgments of high-status people may be determined not only by their own social status, but also by the social status of the target group. For example, members of one high-status group may consider themselves similar to and have some solidarity with other high-status groups, so they do not apply out-group biases to those groups, but they do display biases toward low-status out-groups. Thus, both high- and low-status people may be biased toward out-groups, but only out-groups that have different social statuses than their own (Marx & Engels, 1848, 1969). To our knowledge, there is no direct test of the antagonistic hypothesis in the literature.

#### *Problems Associated with the Classic 2 × 2 Design*

How is it possible that at least three of four plausible hypotheses concerning the role of social status in intergroup biases have received empirical support? We believe that this is due to limitations of the canonical experimental design for studies in this area. In the studies just cited, the experimental design consisted of two factors, Participant Group (high status vs low status) and Relation to Target Group (in-group vs out-group). The dependent variable was either perceived variability or liking. Out-group homogeneity/ethnocentrism effects occur when the main effect for Relation to Target Group is significant. If this effect is qualified by an interaction with Participant Group, then the intergroup bias is said to be asymmetric because it depends on the social status of the participant group. However, this interpretation may be wrong. As we have discussed elsewhere (Brauer & Judd, 2000), the interaction between Participant Group and Relation to Target Group is conceptually identical to a Target Group main effect. Thus, what is interpreted as an asymmetric out-group homogeneity effect may be explained by the fact that all participants perceive one target group as

---

depend on those individuals. People in powerful high-status positions are less dependent on the decisions and opinions of their subordinates, so they can afford to ignore differences among members of that group. As a result, high-status people view the low-status out-group as relatively homogeneous, but the reverse is not true.



**FIG. 1.** Different possible results from a hypothetical study of intergroup perceptions among men and women.

more heterogeneous than the other (for a similar argument, see Bartsch & Judd, 1993, 1995).

To demonstrate this point, imagine a study in which male and female participants evaluate the variability of men and women. The possible results of such a study are shown in Fig. 1. Illustrated in the top row is a “baseline” account of reality in which there are no “objective” differences in the variability of characteristics of men and women. The dashed line indicates the actual level of variability. The left panel (Panel 1) illustrates the case in which both participant groups display out-group homogeneity effects, the middle panel (Panel 2) the case in which only male participants display the effect, and the right panel (Panel 3) the case in

which only female participants display the effect. Panel 1 corresponds to the “classic” crossover interaction, indicating that members of both participant groups view the out-group as less heterogeneous than the in-group.

However, this situation may not be an accurate description of reality. It could be argued that women hold a wider variety of roles than do men. Because people tend to develop character traits that allow them to function efficiently in the roles that they occupy (Eagly, 1987), it could be that women are “objectively” more heterogeneous than men. In addition, the position of women is changing rapidly in our society, so that some women still see themselves in a relatively traditional way, whereas others have a more pro-



gressive view of themselves. Both men and women might well perceive these objective differences, were they to exist. The middle row of Fig. 1 shows the results of an intergroup bias study in which both participant groups believe that women are more heterogeneous than men. As before, there are three panels that illustrate the cases in which both male and female participants (Panel 4), only male participants (Panel 5), or only female participants (Panel 6) impose an out-group homogeneity bias on this situation.

Finally, imagine that men, as the higher status group, are objectively more heterogeneous than women. Lorenzi-Cioldi (1998) argued that high-status groups place a greater value on personal distinctiveness, and enforce in-group norms to a lesser extent, than do low-status groups. Research on communication styles has shown that there are clear gender differences, but that men tend to use typical female strategies more often than women use typical male strategies (Brehm, 1992). In addition, Cooper (1979) showed that women tend to conform more than do men (see also Eagly, Wood, & Fishbaugh, 1981). These findings support the argument that men could be more heterogeneous than women. If this were the case, then we would expect to find results that resemble one of the bottom three panels in Fig. 1 (Panels 7 to 9), in which male and female participants differentially impose an out-group homogeneity bias on this situation.

Some studies involving men and women have shown that members of the high-status group (men) perceive the low-status out-group as more homogeneous than the in-group, whereas members of the low-status group (women) perceive both target groups as equally homogeneous. The results are generally interpreted as reflecting the situation shown in the middle panel of the first row in Fig. 1 (Panel 2): there are no objective differences between the two target groups and only members of the high-status group display the homogeneity bias. As such, the results are interpreted as support for the superiority hypothesis. Note that this conclusion is based on the assumption that there are no target group differences. We do not know, however, if this assumption is valid. It could be that women are more heterogeneous than men (Panels 4 to 6) or the other way around (Panels 7 to 9). If the assumption of no target group differences is abandoned, then the above-mentioned results are also consistent with the situation illustrated in Panel 9, where men are more heterogeneous than women and only female participants display out-group homogeneity effects. Male participants perceive the in-group as more heterogeneous than the out-group, but this is merely an accurate description of reality. Female participants, in contrast, display out-group homogeneity effects because they view the out-group as more homogeneous than it is, but they view the in-group relatively accurately. Finally, the same results could also describe the situation in Panel 7, which represents a perfectly symmetrical out-group homogeneity effect. It takes a some-

what different form than the classic crossover in Panel 1, but only because there is a reliable target group effect on which both participant groups agree.

This argument leads to a different interpretation of the results from previous studies on how social status affects intergroup biases. In studies that include two participant groups that differ in social status, if members of the high-status group perceive the out-group as less variable than the in-group, whereas members of the low-status group perceive both target groups as equally variable, then it is not clear if it is the high-status participants (Panel 2), the low-status participants (Panel 9), or participants from both groups (Panel 7) who are biased. Likewise, if "low-status" African American students evaluate White Americans as more homogeneous than African Americans, whereas "high-status" White American students do not report differences in the variability of the two groups (e.g., Judd et al., 1995), then it is not clear if the low-status group (Panel 3), the high-status group (Panel 5), or both groups (Panel 4) are showing the homogeneity bias.<sup>2</sup>

The idea that one large social category is more (or less) variable than another may be objectionable. And in some studies the objective level of variability of the target groups was held constant, yet participants still displayed asymmetric intergroup biases (Lorenzi-Cioldi et al., 1995). It should be noted, however, that the existence of "objective" target group differences is not a necessary element of our argument. The same reasoning would apply to a situation in which both participant groups shared the belief that one target group was more variable than the other. This belief may reflect reality or it may be a perceptual distortion. But so long as both male and female participants agree that men are more heterogeneous than women, we are dealing with the situation described in Panels 7, 8, and 9 of Fig. 1.

One should realize that a shared belief is a different psychological phenomenon from the asymmetric out-group homogeneity effect itself. Research on a shared belief would ask such questions as "Are there objective differences in variability between high- and low-status groups?", "If not, why do people in general have the tendency to perceive low- (high) status groups as more homogeneous than they

<sup>2</sup> One might argue that an analysis of simple effects should provide a test of which of the three panels best represents the data. For example, a consideration of only women as a target group should yield a significant effect of Participant Group in Panel 2, but not in Panel 9. However, one cannot exclude scale usage effects. It is possible that such attributes as "aggressive" or "helpful" do not have the same meaning for male and female participants. In the realm of intergroup perception, simple effects cannot be interpreted unambiguously because the means contain both the main effects and the interaction effects (for a similar argument see Bartsch & Judd, 1995; Rosnow & Rosenthal, 1989). Likewise, it is impossible to distinguish Panel 7 from Panels 2 and 9. Although the Participant Group  $\times$  Target Group interaction should be stronger in Panel 7, we do not know the absolute strength of this interaction and whether the interaction observed in the data is comparatively strong or moderate in size.

actually are?”, or “Why are some target groups perceived differently than others?” In contrast, research on the asymmetric out-group homogeneity effect would ask such questions as “Why do some but not all people perceive out-groups as more homogeneous than they actually are?”, “How does people’s membership in either a high- or a low-status groups affect the way they categorize their social environment?”, or “Why do some perceivers function differently than others?” The work on shared beliefs essentially asks questions about targets, whereas the research on asymmetric out-group homogeneity effects seeks to account for the behavior of perceivers.

To summarize, we believe that conclusions about the existence of an asymmetric out-group homogeneity effect cannot be drawn from studies that include only two participant groups. If the Participant Group  $\times$  Target Group interaction is significant, then all that can be said is that out-group homogeneity is present, but it is impossible to determine how much each of the groups contributes to the effect.<sup>3</sup> The same reasoning can be applied to ethnocentrism. The only way to evaluate the alternative hypotheses is to test more than two groups. With three or more groups, it is possible to unconfound the effects due to target group from the effects due to perceptual biases of particular participant groups. Thus, in the following study, ratings of perceived variability and likeability ratings were collected from four occupational groups: doctors, lawyers, hairdressers, and waiters. An analytic strategy involving comparisons among pairs of groups allowed us to test the extent to which out-group homogeneity depends on the social status of the participants. Given the empirical and theoretical evidence for each of the four hypotheses in Table 1, it seemed impossible to make specific predictions concerning the role of social status in intergroup perceptions. Our goal was to find out which of the four hypotheses accounted best for the observed results.

<sup>3</sup> Our reasoning is based on a specific definition of out-group homogeneity, namely that it is the tendency to see an out-group as more homogeneous than it actually is (Judd & Park, 1993; Linville et al., 1989). Because it is never possible to measure the actual level of variability in a large social category, the only way to test for out-group homogeneity in a natural setting is to collect ratings from two or more groups and to examine whether participants perceive out-groups as less variable than their in-group. This definition is somewhat different from the one implied or specified by other researchers. Simon (1995) and Lorenzi-Cioldi (1998) argue that out-group homogeneity is present whenever a participant sees the in-group as being more variable than the out-group. But as shown in Fig. 1, even when group members give the same ratings to the in-group and to the out-group, they may nevertheless be displaying out-group homogeneity. Either the out-group is objectively more variable, so that they distort reality by not appreciating that fact, or there is a shared belief among participants that the out-group is more variable, so that the out-group homogeneity effect and the shared belief cancel each other out (see Panels 4 and 7).

## METHOD

### *Participants*

Participants in the main study were 24 doctors, 24 lawyers, 24 waiters, and 24 hairdressers from a medium-sized town in Germany. These four groups were chosen based on a pretest in which we asked individuals from different occupational groups to evaluate the social status of such groups (including their own), as well as the frequency with which they had contact with members from these groups. Doctors, lawyers, waiters, and hairdressers seemed most appropriate for the present study because members of these occupational groups agreed about their relative status and were about equally familiar with each other. In addition, data from government offices indicated that these four occupational groups were approximately of equal size.

The waiters and hairdressers all held a professional degree in their respective field, had a full-time position as an employee in either a restaurant or a hair salon, and had worked in that profession for at least 5 years. The doctors and lawyers were all self-employed and had all worked in their profession for at least 5 years. Within each occupational group, about two-thirds of the participants were male and one-third were female.

A female experimenter contacted participants individually, either personally or by telephone. Most waiters and hairdressers were recruited at their workplaces, whereas most doctors and lawyers were recruited by telephone. The experimenter explained that the study concerned perceptions of different occupational groups. Participants were not told which groups they would be asked about and they were not informed about the fact that purpose of the study was to assess stereotypes and prejudice among occupational groups. The experimenter explained that they would be asked to fill out a questionnaire that took about 60 to 90 min to complete. She also informed them that they would be paid DM20 (approximately \$12 at the time) for their participation. Approximately half of the people who were contacted agreed to participate in the study. The experimenter delivered the questionnaires personally. At the time of delivery she made an appointment to pick up the questionnaires later on. Participants were paid when the questionnaires were collected, but approximately 30% of the doctors and lawyers did not accept payment. Two doctors and one lawyer refused to fill out the questionnaire.

### *Design*

Each participant rated three target groups: (a) his or her in-group, (b) an out-group of the same status as his or her in-group, and (c) one of the two out-groups of a different status than his or her in-group. For example, half of the waiters evaluated waiters, hairdressers, and lawyers, whereas the other half evaluated waiters, hairdressers, and doctors. This yielded a 4 (Participant Group: doctors vs

lawyers vs waiters vs hairdressers)  $\times$  3 (Target Group: in-group vs same status out-group vs different status out-group) mixed design, with repeated measures on the last factor.

The order of target group ratings was completely counterbalanced. Of the 24 participants from each group, 12 evaluated the same three target groups. The three target groups were presented in one of six different orders, so that only 2 participants from each participant group saw exactly the same version of the questionnaire.

### *Stimulus Material*

The participants evaluated each of the three target groups on three different standard measures, the range task, the histogram task, and the thermometer task. On the range task, respondents evaluated the target group on 16 attribute dimensions. The attribute dimensions were selected on the basis of a pretest in which individuals were asked to generate positive and negative character traits that were stereotypical of members of various occupational groups. Four attributes were stereotypical of doctors (authoritarian, arrogant, helpful, interested in the well-being of their fellow human beings), four of lawyers (avaricious, self-opinionated, logical, convincing), four of waiters (like to drink, unstable, flexible, good at mental arithmetic), and four for hairdressers (naive, superficial, creative, have a good aesthetic sense). Within each set of stereotypical attributes, 2 were positive and 2 were negative. The range task required participants to first estimate the central tendency of the target group on each attribute dimension and then to indicate the location of the highest group member and the lowest group member on that dimension.

The histogram task involved the same 16 attribute dimensions. In this task, five response categories were presented to participants for each dimension, "not at all X," "little X," "somewhat X," "X," and "very X," where X was the attribute dimension under consideration. The categories were represented by vertical boxes; participants were asked to fill up the boxes from the bottom according to their judgment of how many members of the target group fell in each category. The more a box was filled, the more group members were in that category. If the task was done correctly, the participant produced (for each attribute) a rough version of a frequency histogram that corresponded to his or her perception of the target group for that attribute.

The final task was a standard thermometer rating in which participants indicated their liking for the target groups on 100-point scales. Endpoints were labeled *very cool* (0) and *very warm* (100). On this task, participants evaluated 12 occupational groups, 4 of which were the groups focused on in this study. Note that this is the only task in which participants evaluated all four of the target groups used in this study.

All participants first evaluated the three target groups on

the range task, then on the histogram task, and finally they gave the thermometer ratings. For the range task and the histogram task, the 16 attributes were presented in one of two different random orders.

### *Procedure*

Most participants received the questionnaire from the experimenter at their place of work, but some received it at home. The experimenter instructed participants to complete the questionnaire alone. On the cover page of the questionnaire, participants were informed that they would be asked about their perceptions of several occupational groups, including their own. Special emphasis was placed on the fact that they should indicate their personal impressions and that there were no right or wrong answers. The range task and the histogram task were explained in detail, and an example was given for each task. Approximately 1 week after the first meeting, the experimenter recontacted the participants, retrieved the questionnaire, and finally debriefed, paid, and thanked the participants.

## RESULTS

Somewhat surprisingly, many participants did not seem to understand the histogram task. Some participants did not respond to this task at all. Many participants either made a horizontal slash across all five boxes or simply filled in one of the boxes. If this occurred on all 16 attribute dimensions, we believed that the participant misunderstood the task. After a fairly conservative elimination procedure, 28 participants still had usable data for the histogram task (among these participants were just 2 hairdressers and 5 lawyers). Because the results of the histogram task for these 28 participants were very similar to those on the other tasks, we report only the results for the range task and the thermometer task.

### *Establishing the Existence of Intergroup Biases*

*Out-group homogeneity.* Following the procedure used in previous research, we calculated (for each participant and for each attribute) the difference between the highest and the lowest rating on the range task. We then calculated a dispersion score for each target group by averaging across all 16 attributes. The mean dispersion scores, broken down by participant group and by target group, are reported in Table 2. The bold numbers are in-group ratings.

Our initial goal was to see if we had replicated the out-group homogeneity effect with our occupational groups. We thus averaged, for each participant, the dispersion scores for the two out-groups that he or she evaluated and then analyzed these data as a function of Participant Group (doctors vs lawyers vs waiters vs hairdressers) and Relation

TABLE 2  
Perceived Variability and Liking Ratings for Each of the Four Target Groups as a Function of Participant Group

Participant group and target group	<i>N</i>	Perceived variability (range task)	Liking (range task)	Liking (thermometer task)
Doctors				
Doctors	22	<b>15.6 (4.1)</b>	<b>3.7 (3.5)</b>	<b>69 (15.3)</b>
Lawyers	22	13.8 (3.7)	1.0 (2.9)	51 (18.2)
Waiters	11	14.7 (3.3)	-.6 (2.0)	51 (18.6)
Hairdressers	11	12.9 (5.2)	3.0 (6.2)	52 (16.7)
Lawyers				
Doctors	23	18.1 (4.5)	.4 (4.5)	58 (18.8)
Lawyers	23	<b>18.1 (4.9)</b>	<b>.4 (2.8)</b>	<b>53 (24.1)</b>
Waiters	12	18.1 (4.4)	.2 (1.6)	50 (19.3)
Hairdressers	11	15.7 (4.8)	-.2 (3.1)	51 (18.3)
Waiters				
Doctors	12	14.9 (4.9)	.6 (3.9)	52 (25.3)
Lawyers	12	14.4 (4.7)	.6 (2.6)	44 (20.5)
Waiters	24	<b>15.3 (5.3)</b>	<b>4.2 (4.3)</b>	<b>72 (16.1)</b>
Hairdressers	24	14.6 (4.6)	2.0 (3.0)	54 (20.2)
Hairdressers				
Doctors	12	16.5 (4.8)	.2 (3.0)	57 (20.5)
Lawyers	12	14.1 (5.9)	.7 (2.5)	48 (23.4)
Waiters	24	14.7 (4.5)	1.3 (3.1)	52 (19.9)
Hairdressers	24	<b>15.8 (4.7)</b>	<b>5.0 (4.2)</b>	<b>68 (19.2)</b>

*Note.* Higher values mean more perceived variability and more positive evaluations. The perceived variability scores varied between 0 and 28, the ethnocentrism scores on the range task could take values between -28 and +28, and the ethnocentrism scores on the thermometer task varied between 0 and 100. The standard deviations are presented in parentheses. Bold indicates in-group ratings.

to Target Group (in-group vs out-group) with repeated measures on the last factor. The main effect for Participant Group was marginally significant [ $F(3, 89) = 2.37, p < .08$ ]. Post hoc comparisons revealed that lawyers tended to view all target groups as more variable than did the other three participant groups [ $F(1, 89) = 6.85, p < .05$ ]. There was also a reliable main effect for Relation to Target Group [ $F(1, 89) = 16.31, p < .0001$ ]. Participants saw their in-group as more variable ( $M = 16.2$ ) than the two out-groups ( $M = 15.2$ ). No other effects approached significance.

*Ethnocentrism.* In order to examine ethnocentrism, we first considered the mean ratings on the range task. For each participant and for each target group, we subtracted the average of the negative attributes from the average of the positive attributes. This yielded a positivity score for each target group, with higher values indicating more positive attitudes toward the group. The average positivity scores from the range task, as well as the ratings from the thermometer task, are shown in the last two columns of Table 2. Again, in-group ratings are printed in bold.

We then proceeded in exactly the same manner as we did with the perceived variability ratings. To test for ethnocentrism, we averaged the ratings for both out-groups and then analyzed the data as a function of Participant Group (doctors vs lawyers vs waiters vs hairdressers) and Relation to

Target Group (in-group vs out-group) with the last factor varying within participants. The main effect for Participant Group was not significant for the range task or for the thermometer ratings. However, the main effect of Relation to Target Group was significant for the range task [ $F(1, 89) = 29.47, p < .0001$ ] and for the thermometer ratings [ $F(1, 89) = 27.98, p < .0001$ ]. On both tasks, participants evaluated their in-group more positively ( $M = 3.36$  and  $M = 65.6$ ) than the two out-groups ( $M = .87$  and  $M = 52.1$ ). There was also a reliable interaction between Relation to Target Group and Participant Group on both measures. Post hoc comparisons revealed that lawyers tended to see out-groups less negatively in comparison to the in-group than did the other three participant groups [ $F(1, 89) = 8.03, p < .01$  (range task) and  $F(1, 89) = 10.71, p < .002$  (thermometer task)].

#### *Standard Analyses of Asymmetry*

*Out-group homogeneity.* Our second goal was to see if we had replicated the results of earlier studies involving two groups of different social status. We reanalyzed the data, but this time we only considered the out-group that had a different social status than the participant's own group. Note that hairdressers and waiters are of different status for doctors and lawyers and vice versa. Also, we distinguished



TABLE 3  
Perceived Variability and Liking Ratings as a Function of Participant Group Status and Relation to Target Group

Participant group status and relation to target group	Perceived variability (range task)	Liking (range task)	Liking (thermometer task)
High status ( $N = 45$ )			
In-group	16.9 (4.6)	2.0 (3.6)	61 (21.6)
Different status out-group	15.4 (4.7)	.6 (3.8)	51 (16.2)
Low status ( $N = 48$ )			
In-group	15.6 (5.0)	4.6 (4.2)	70 (17.6)
Different status out-group	15.0 (4.9)	.5 (3.0)	50 (20.2)

*Note.* Higher values mean more perceived variability and more positive evaluations. The standard deviations are presented in parentheses.

participants only according to their social status. As a consequence, we analyzed the data as a function of Participant Group Status (high-status participants vs low-status participants)  $\times$  Relation to Target Group (in-group vs different status out-group) with repeated measures on the last factor. This test corresponds to the standard analyses conducted in earlier studies of asymmetric outgroup homogeneity effects, studies that we criticized earlier.

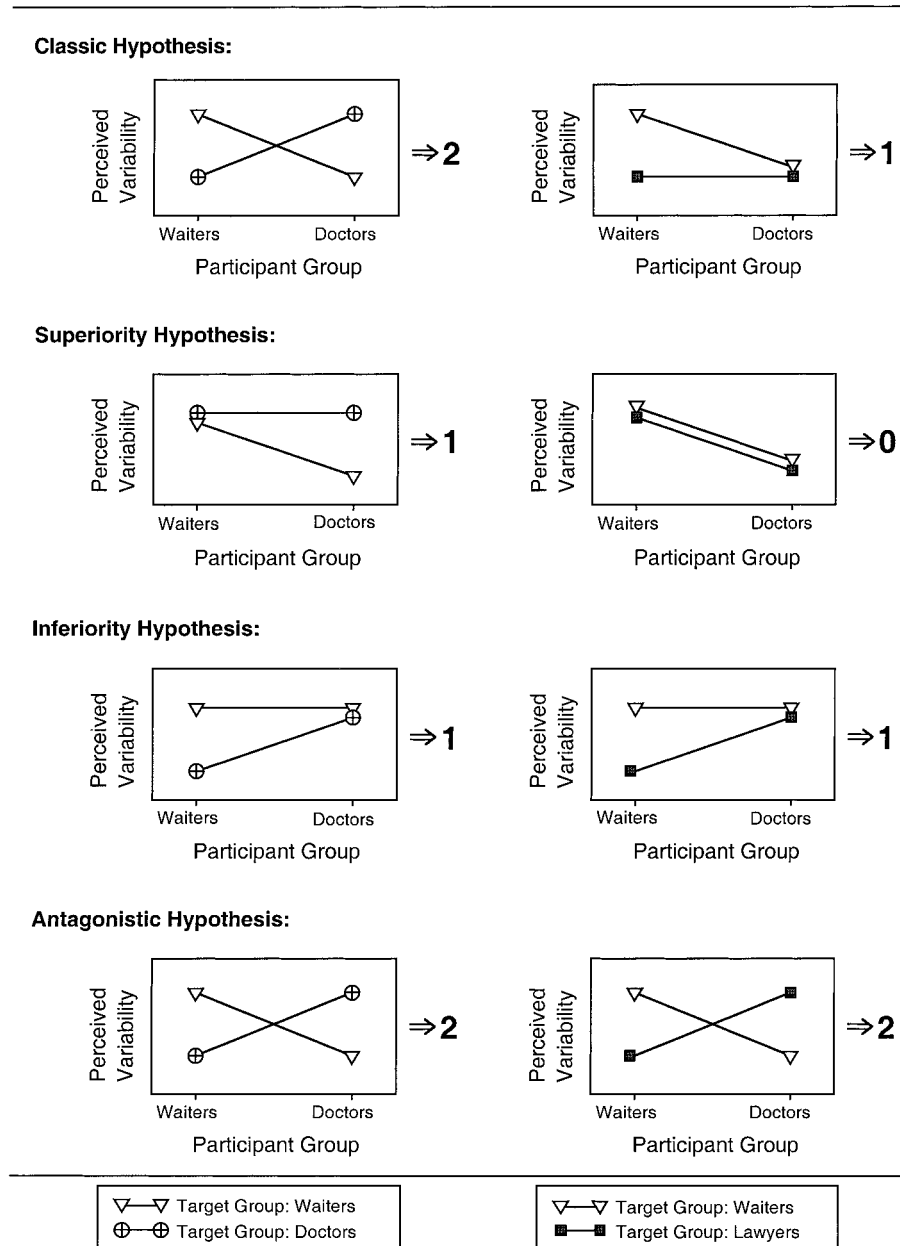
The means of the four cells are shown in the first column of Table 3. The main effect for Participant Group Status was nonsignificant ( $F < 1$ ), but the analyses yielded a reliable main effect of Relation to Target Group [ $F(1, 91) = 12.62, p < .001$ ]. Participants tended to see the in-group as more dispersed ( $M = 16.2$ ) than the different status out-group ( $M = 15.2$ ). Although this effect was somewhat stronger for high-status participants than for low-status participants, the Participant Group Status  $\times$  Relation to Target Group interaction was not significant [ $F(1, 91) = 2.28, p = .13$ ]. We conclude that the difference in perceived variability between in-group and out-group did not depend on the social status of the participants (which would support the classic hypothesis). If anything, the pattern of means was closest to what the superiority hypothesis would predict—high-status individuals displayed the outgroup homogeneity bias to a greater extent than did low-status individuals.

*Ethnocentrism.* Again, we considered only in-group ratings and ratings for the out-group that did not have the same social status as the participant's own group. The means for the range task are shown in the second column of Table 3 and those for the thermometer ratings are shown in the third column. For each task, the data were analyzed as a function of Participant Group Status (high-status participants vs low-status participants)  $\times$  Relation to Target Group (in-group vs different status out-group), with repeated measures on the last factor. For the range task, the main effect for Participant Group Status was significant [ $F(1, 91) = 4.72, p < .05$ ], but for the thermometer ratings, it was not  $F(1, 91) = 2.36, p = .13$ . Low-status participants gave higher positivity ratings ( $M = 2.55$  and  $M = 60.1$  for the range task and the

temperature ratings, respectively) than did high-status participants ( $M = 1.31$  and  $M = 55.9$ ). As with the variability ratings, there was also a reliable main effect for Relation to Target Group [ $F(1, 91) = 30.42, p < .0001$  (range task) and  $F(1, 91) = 27.71, p < .0001$  (thermometer task)]. Participants rated the in-group more positively ( $M = 3.36$  and  $M = 65.6$ ) than the different status outgroup ( $M = .55$  and  $M = 50.5$ ). These main effects were qualified by a significant Participant Group Status  $\times$  Relation to Target Group interaction on the range task [ $F(1, 91) = 6.99, p < .01$ ]; this same interaction was only marginally significant on the thermometer task [ $F(1, 91) = 2.84, p = .096$ ]. On both tasks, the difference between the in-group and the out-group was greater for low-status participants than for high-status participants. As Table 3 shows, the ethnocentrism ratings also seemed to reveal some asymmetry, but here it was the low-status participants who appeared to be more ethnocentric than high-status participants. This pattern of means would support the inferiority hypothesis.

#### *New Analyses of Asymmetry*

As we suggested in the introduction, analyses such as these do not provide a test of asymmetries in either the out-group homogeneity effect or the ethnocentrism effect. The Participant Group Status  $\times$  Relation to Target Group interactions that emerged from the data shown in Table 3 can be explained more parsimoniously as a Target Group main effect. The interpretation of our data becomes easier if we define the variables absolutely (Brauer & Judd, 2000) by defining the variables of interest as "Participant Group" and "Target Group." If one considers only two groups, which function both as participant groups and as target groups, the data then form a classic  $2 \times 2$  design, and the out-group homogeneity/ethnocentrism effects are represented by the interaction between Participant Group and Target Group. Because raw cell means are always contaminated by the two main effects in a  $2 \times 2$  design, such means cannot be used as the basis for interpreting the interaction effect (Rosnow & Rosenthal, 1989).



**FIG. 2.** Different predictions of the four hypotheses for the case where waiters and doctors make judgments about waiters and doctors (left panels) and where waiters and doctors make judgments about waiters and lawyers (right panels).

The only reliable information that can be used is the size of the interaction effect. The larger the effect, the stronger the bias. If both participant groups display out-group homogeneity/ethnocentrism, then the interaction effect should be considerably stronger than if only one participant group displays the bias and that should be stronger in turn than if no group is biased. This insight is the key to testing whether there are asymmetries in the out-group homogeneity effect and the ethnocentrism effect.

The analytic strategy now turned to pairwise comparisons among two participant groups and two target

groups. There are 6 possible combinations: (a) Doctors–Lawyers, (b) Doctors–Hairdressers, (c) Lawyers–Waiters, (d) Waiters–Doctors, (e) Hairdressers–Lawyers, and (f) Hairdressers–Waiters. Combining the 6 participant group combinations with each of the 6 target group combinations yields a total of 36 possible pairwise comparisons, where two participant groups judge two target groups in each case (see first two columns of Table 4). Each of the 36 pairwise comparisons can be analyzed via a  $2 \times 2$  analysis of variance that yields two main effects (one for Participant Group and one for Target

TABLE 4  
Predictions of the Four Hypotheses for the Participant Group  $\times$  Target Group Interactions  
and the Actual Effect Sizes ( $\eta^2$ ) of Those Interactions

Participant groups	Target groups	Classic hypo.	Sup. hypo.	Inf. hypo.	Antag. hypo.	Effect size ( $\eta^2$ ), out-group homogen. (range task)	Effect size ( $\eta^2$ ) ethnocentrism (range task)	Effect size ( $\eta^2$ ) ethnocentrism (temp. task)
Doc/Law	Doc/Law	2	2	0	0	.09	.08	.06
	Doc/Hair	1	1	0	0	.00	-.02	.05
	Wait/Law	1	1	0	0	.01	-.02	.00
	Doc/Wait	1	1	0	0	.01	.43	.04
	Hair/Law	1	1	0	0	.03	.05	.00
	Hair/Wait	0	0	0	0	—	—	.00
Doc/Hair	Doc/Law	1	1	0	0	—	—	.06
	Doc/Hair	2	1	1	2	.13	.07	.26
	Law/Wait	0	0	0	2	-.03	.12	.01
	Doc/Wait	1	1	0	2	.04	.37	.06
	Law/Hair	1	0	1	2	.03	.25	.12
	Wait/Hair	1	0	1	0	—	—	.11
Law/Wait	Law/Doc	1	1	0	0	—	—	.00
	Doc/Hair	0	0	0	2	.03	.15	.04
	Law/Wait	2	1	1	2	.15	.27	.22
	Doc/Wait	1	0	1	2	.01	.01	.22
	Law/Hair	1	1	0	2	.11	.09	.05
	Hair/Wait	1	0	1	0	—	—	.14
Wait/Doc	Law/Doc	1	1	0	0	—	—	.07
	Hair/Doc	1	1	0	2	.04	.03	.13
	Wait/Law	1	0	1	2	.07	.40	.24
	Wait/Doc	2	1	1	2	.04	.43	.32
	Hair/law	0	0	0	2	.01	.00	.04
	Wait/Hair	1	0	1	0	—	—	.16
Hair/Law	Doc/Law	1	1	0	0	—	—	.01
	Hair/Doc	1	0	1	2	.12	.24	.14
	Wait/Law	1	1	0	2	-.01	.04	.01
	Wait/Doc	0	0	0	2	.01	-.01	.00
	Hair/Law	2	1	1	2	.16	.47	.12
	Hair/Wait	1	0	1	0	—	—	.09
Hair/Wait	Doc/Law	0	0	0	0	—	—	.00
	Hair/Doc	1	0	1	0	.02	.03	.02
	Law/Wait	1	0	1	0	.17	.15	.16
	Doc/Wait	1	0	1	0	.00	.05	.16
	Hair/Law	1	0	1	0	.01	.29	.03
	Hair/Wait	2	0	2	0	.13	.29	.27

Note. Doc = Doctors, Law = Lawyers, Hair = Hairdressers, Wait = Waiters.

Group) and one interaction effect. For each of the 36 pairwise comparisons, the four hypotheses make specific predictions about the number of participant groups that will display perceptual biases and thus about the strength of the Participant Group  $\times$  Target Group interaction.

As an example, take the case in which doctors and waiters evaluate doctors and waiters (see Fig. 2, left panels). The classic hypothesis predicts a relatively strong interaction because both participants groups are assumed to display out-group homogeneity and ethnocentrism. A strong interaction is represented by a 2 in Fig. 2. But according to the superiority hypothesis, a moderate interaction effect is pre-

dicted (represented by a value of 1) because only doctors are expected to view the out-group as homogeneous and negative, whereas waiters apply no perceptual biases toward the low-status in-group or the high-status out-group. The inferiority hypothesis also predicts a moderately strong interaction, but it is the waiters in this case who should display out-group homogeneity and ethnocentrism biases. Finally, the antagonistic hypothesis predicts a strong interaction again because for members of both participant groups, the out-group has a different social status and is therefore perceived as more homogeneous and negative than it actually is.

TABLE 5  
Correlations between the Predictions of Each of the Four Hypotheses and the  
Actual Effect Sizes of the Three Intergroup Perception Measures

Out-group homogeneity (range task)	Ethnocentrism (range task)	Ethnocentrism (thermometer task)
	Classic hypothesis	
$r = .62$ ( $p < .001$ )	$r = .41$ ( $p < .05$ )	$r = .64$ ( $p < .0001$ )
	Superiority hypothesis	
$r = .17$ ( <i>ns</i> )	$r = .03$ ( <i>ns</i> )	$r = -.10$ ( <i>ns</i> )
	Inferiority hypothesis	
$r = .50$ ( $p < .01$ )	$r = .41$ ( $p < .05$ )	$r = .76$ ( $p < .0001$ )
	Antagonistic hypothesis	
$r = .08$ ( <i>ns</i> )	$r = .16$ ( <i>ns</i> )	$r = .29$ ( <i>ns</i> )

As a second example, consider the case in which doctors and waiters evaluate lawyers and waiters (see Fig. 2, right panels). For doctors, both target groups are out-groups, but one out-group has high status, whereas the other has low status. For waiters, one target group is the in-group, whereas the other target group is a high-status out-group. Again, it is possible that doctors and waiters use the scales differently (participant group main effect) or that both participant groups agree about differences between the target groups (target group main effect) and the only information that can be used to assess out-group homogeneity and ethnocentrism is the size of the Participant Group  $\times$  Target Group interaction effect.

As before, the four hypotheses make specific predictions about the relative sizes of the interaction effects. The classic hypothesis predicts a medium-sized interaction because only waiters are assumed to be biased toward the two target groups. Doctors presumably see the two target groups as equally homogeneous because lawyers and waiters are both out-groups for them. The superiority hypothesis predicts no interaction (represented by a value of 0). Doctors are predicted to be biased toward all out-groups, and because both target groups are outgroups they see them as equally homogeneous. Waiters should not display an out-group homogeneity bias, so they ought to perceive both target groups as equally heterogeneous. The inferiority hypothesis predicts a moderately strong interaction. As shown in Fig. 2, doctors should not distinguish between target groups with respect to perceived variability, whereas waiters presumably display an out-group homogeneity effect. The antagonistic hypothesis is the only one that predicts a strong interaction effect. Although both target groups are out-groups, the antagonistic hypothesis predicts that doctors will view the different status outgroup (waiters) as more homogeneous than the same status out-group (lawyers). Likewise, the antagonistic

hypothesis predicts that waiters will view the different status out-group (lawyers) as less variable than the in-group.

The same reasoning can be applied to all of the combinations involving two participant groups and two target groups. For each of the 36 comparisons, the four hypotheses make specific predictions concerning the relative sizes of the Participant Group  $\times$  Target Group interaction effects. The predictions for all 36 interactions are shown in Table 4 (see columns 3–6).

*Out-group homogeneity.* Remember that participants rated only one of the two target groups that had a different status than their in-group. For example, doctors never evaluated both hairdressers and waiters because on the range task, each doctor evaluated either hairdressers or waiters. As a result, we only had variability data for 26 of the 36 possible participant group and target group combinations. For each of these 26 pairwise comparisons we calculated a  $2 \times 2$  ANOVA with participant group (between) and target group (within) as the independent variables and perceived variability as the dependent variable. We then calculated the effect size for the Participant Group  $\times$  Target Group interaction. The rounded effect sizes for the 26 interactions are also shown in Table 4.<sup>4</sup>

<sup>4</sup> Some readers may be surprised to find negative values among the rounded effect sizes. To be precise, the values in these columns are not just the effect sizes, but the effect sizes multiplied by the direction of the effects. An interaction where both participant groups showed in-group homogeneity could have the same effect size as an interaction where both groups show out-group homogeneity. However, both interactions certainly do not have the same meaning. In order to distinguish between them, we calculated within-participant difference scores (first target group minus second target group, in the order noted in Table 4). If this difference was bigger for the first participant group than for the second, then we multiplied the effect size by +1, and if it was smaller, then we multiplied the effect



Four bivariate correlation analyses were conducted to relate the effect sizes to the predictions of the four hypotheses. For each of these analyses, the unit of analysis was the pairwise comparison and the  $N$  was 26. The results of these analyses are shown in the first column of Table 5. The classic hypothesis was clearly the best at predicting the sizes of the interaction effects [ $r(24) = .62, p < .001$ ]. The predictors of the inferiority hypothesis were also correlated significantly with the effect sizes, but that correlation was somewhat smaller [ $r(24) = .41, p < .01$ ]. Both the superiority hypothesis and the antagonistic hypothesis failed to make accurate predictions [ $r(24) = .17, ns$  and  $r(24) = .08, ns$  respectively].

A possible objection is that these analyses do not distinguish clearly enough between the classic hypothesis and the inferiority hypothesis. The predictions of both hypotheses correlate substantially with each other [ $r(24) = .54, p < .01$ ]. It is possible that one of the hypotheses does not account for the data very well, but is nevertheless correlated with the effect sizes simply because its predictors are correlated with those of the other hypothesis. To explore this possibility, we conducted a multiple regression analysis in which the actual effect sizes were regressed on the predictors of both the classic hypothesis and the inferiority hypothesis. The two independent variables taken together reliably predicted the actual effect sizes [ $F(2, 23) = 8.50, p < .002, \eta^2 = .42$ ]. The results also showed that the classic hypothesis predicted the effect sizes over and above the inferiority hypothesis [ $F(1, 23) = 7.04, p < .02$ ]. However, the relationship between the predictors of the inferiority hypothesis and the effect sizes was nonsignificant when the predictors of the classic hypothesis were statistically controlled [ $F(1, 23) = 1.50, ns$ ]. Based on these analyses, the classic hypothesis seems to have the strongest support. Participants tended to display an out-group homogeneity bias, and this bias was not affected by the social status of the groups involved.

*Ethnocentrism.* Positivity scores derived from the means of the range task and the ratings on the thermometer task were subjected to similar analyses. Participants evaluated just three target groups on the range task, but all four target groups on the thermometer task. As a result, there were 26 effect sizes for the positivity scores of the range task, and 36 effect sizes for the thermometer task. The effect sizes are shown in the last two columns of Table 4. The correlations between the effect sizes and the predictors of the four hypotheses were computed as before. The results of these analyses are shown in the last two columns of Table 5.

As the table shows, the positivity scores replicated the results of the perceived variability scores. On the range task,

the predictors of the classic hypothesis were significantly correlated with the effect sizes of the interaction effects [ $r(24) = .41, p < .05$ ]. The same was true for the predictors of the inferiority hypothesis. On the thermometer task, the inferiority hypothesis had somewhat greater predictive power [ $r(34) = .76, p < .0001$ ] than did the classic hypothesis [ $r(34) = .64, p < .0001$ ]. Once again, the superiority hypothesis and the antagonistic hypothesis did not account for the results of either the range task or the thermometer task.

Given that the predictors of the classic and the superiority hypothesis correlated to the same extent with the actual sizes of the interaction effects, we again asked to what extent these correlations might be attributed to correlation between the predictors. Multiple regression analyses again were conducted in which we regressed the interaction effect sizes on the predictors of both the classic and the inferiority hypotheses. On the range task, the predictors were marginally related to the interaction effect sizes [ $F(2, 23) = 3.18, p < .06, \eta^2 = .22$ ]. In addition, each effect was nonsignificant when the other effect was held constant statistically [ $F(1, 23) = 1.48, ns$ ] for the classic hypothesis and [ $F(1, 23) = 1.45, ns$ ] for the inferiority hypothesis. But on the thermometer task, the overall  $F$  was quite significant [ $F(2, 33) = 32.21, p < .0001, \eta^2 = .66$ ]. Furthermore, each effect was significant even when the other effect was held constant statistically [ $F(1, 33) = 7.44, p < .02$ ] for the classic hypothesis and [ $F(1, 33) = 25.13, p < .0001$ ] for the inferiority hypothesis. Obviously, both hypotheses predicted the data, so it was impossible to choose one over the other.

## DISCUSSION

This research was motivated by our claim that studies involving only two participant groups and two target groups do not allow conclusions to be drawn about whether intergroup biases such as the out-group homogeneity effect or the ethnocentrism effect depend on the status of the participant groups. We believe that asymmetry can only be inferred if members from more than two groups are investigated. In the present study, four occupational groups, doctors, lawyers, hairdressers, and waiters, were investigated. Members of these groups displayed a strong tendency to see out-groups in a homogeneous and negative manner. All four groups viewed the in-group as more variable and more positive than the out-groups. Based on standard analyses of variance involving Participant Group and Relation to Target Group as factors, the out-group homogeneity effect seemed stronger among members of high-status groups (superiority hypothesis), whereas ethnocentrism effects seemed stronger among members of low-status groups (inferiority hypothesis).

However, this interpretation of our data would be prema-

---

size by  $-1$ . The predictions of the four hypotheses were formed in the same manner. Actually, we chose the order of the participant group and of the target groups in Table 4 in such a way that all of the predictions were positive.

ture because in these standard analyses, the Participant Group  $\times$  Relation to Target Group interaction is conceptually confounded with a Target Group main effect (Brauer & Judd, 2000). We believe that the only way to assess asymmetry is to conduct pairwise comparisons involving the relative strength of the Participant Group  $\times$  Target Group interaction. If the interaction is significant, then the two participant groups are displaying out-group homogeneity/ethnocentrism effects, but the contribution of each participant group to this effect cannot be determined from the interaction alone. However, the size of the interaction should be stronger if two groups display out-group homogeneity/ethnocentrism biases than if only one group displays these biases. By comparing the actual effect sizes with the predictions of a particular hypothesis, it is possible to determine how well each of the four hypotheses presented earlier accounts for the observed results.

With respect to perceived variability, the results were most consistent with the *classic hypothesis*, which is that the out-group homogeneity bias is a general phenomenon that is unaffected by the social status of the participant groups. The results were also moderately consistent with the *inferiority hypothesis*, which is that members of low-status groups view society in more “groupy” terms, categorize more, and display stronger out-group homogeneity biases than do members of high-status groups. The data were inconsistent with the claim that high-status groups are more biased against low-status groups than the other way around (*superiority hypothesis*). The results were also inconsistent with the *antagonistic hypothesis*, which is that people consider everyone belonging to the same social class as the in-group and everyone belonging to a different social class as the out-group.

The results drew a less clear picture of the ethnocentrism effect. Our data were equally consistent with the classic hypothesis and the inferiority hypothesis. On the range task, both hypotheses predicted the effect sizes equally well. On the thermometer task, the inferiority hypothesis accounted for the results somewhat better than did the classic hypothesis. Note that ethnocentrism measures are more sensitive to social desirability concerns (particularly the thermometer task) than are perceived variability measures. In the cultural context of Germany, no one would be surprised if a hairdresser evaluated lawyers more negatively than hairdressers. In contrast, a lawyer who derogated hairdressers and waiters would be considered arrogant and elitist. As a consequence, doctors and lawyers may have tried to respond in a socially desirable manner. This interpretation receives some support if one compares the results of the two ethnocentrism tasks. On the thermometer task, the most direct measure of ethnocentrism, the results were more consistent with the inferiority hypothesis than with the classic hypothesis. On the range task, a less reactive measure of ethnocentrism, both hypotheses accounted for the results equally

well. As with the out-group homogeneity effect, however, the results were inconsistent with the superiority and the antagonistic hypotheses.

These results are somewhat surprising, in light of many recent studies showing that high-status groups display the homogeneity bias and derogate out-groups more than do low-status groups (e.g., Fiske, 1993; Jost & Banaji, 1994; Jost & Burgess, 2000; Lorenzi-Cioldi, 1995, 1998; Lorenzi-Cioldi et al., 1995; Ryen & Kahn, 1975; Sachdev & Bourhis, 1987, 1991; Simon, Glässner-Bayerl, & Stratenwerth, 1991; van Knippenberg, Blaauw, & Vermunt, 1996). We have argued that previous studies of the effects of social status in intergroup biases were not precise enough to allow for an appropriate test of an asymmetric out-group homogeneity effect. If this is correct, then the only way to reconcile the results of this study with those of previous studies is to assume that the interactions observed in the other research were entirely accounted for by the main effect of target group. In other words, if out-group homogeneity and ethnocentrism are really universal effects that do not depend on the social status of the participant groups, then, for example, the (low-status) homosexual and (high-status) heterosexual participants in the Simon et al. (1991) study must have believed that heterosexual men were actually more variable than homosexual men. Given that there are more heterosexual men than homosexual men, this is not implausible, but we believe that there is no need to invoke “objective” differences in group variability. Perhaps both heterosexual and homosexual men have the stereotype that homosexual men are more similar to each other. Likewise, the (low-status) prisoners and the (high-status) prison guards in the van Knippenberg et al. (1996) study may have agreed that prison guards are more variable than prisoners. Given the deindividuating nature of imprisonment, this Target Group main effect may reflect reality, but perhaps both prisoners and prison guards have the stereotype that prisoners are more similar to each other. If so, then we are dealing with a Target Group main effect that should be separated conceptually from an asymmetric out-group homogeneity effect.

Because it is often difficult or impossible to measure “objective” differences in variability among the members of large social categories, one may be tempted to suggest that the issue of asymmetric out-group homogeneity/ethnocentrism effects is best studied by using artificial groups in the laboratory. There, it is possible to manipulate how variable group members really are and how many positive and negative traits they possess. Although important insights can be gained from laboratory research, they do not provide an unambiguous answer. First, many researchers have argued that findings from artificial laboratory groups cannot be readily applied to large social categories in natural settings (Judd et al., 1995; Ostrom & Sedikides, 1992; Mullen et al., 1992). Second, and more importantly, studies with

laboratory groups cannot unconfound the main effect of target group from the asymmetric out-group homogeneity effect.

To illustrate this point, consider a recent study by Lorenzi-Cioldi (1995), who used a minimal group paradigm and randomly assigned participants to two groups. One of these groups was attributed a high status (because its members succeeded on an aesthetic judgment test), whereas the other group was attributed a low status (because its members failed that test). Participants read descriptions of three typical members of the high-status group and three typical members of the low-status group. These descriptions were constructed by experimenter and counterbalanced so that there were no objective target group differences. Subsequently, a cued recall task was used to assess the extent to which participants perceived each of the target groups as heterogeneous. The results showed that members of the high-status group saw the out-group as more homogeneous than the in-group, whereas members of the low-status group saw the two target groups as equally variable. Lorenzi-Cioldi interpreted this finding as an asymmetric outgroup homogeneity effect, one that supported his superiority hypothesis.

From our viewpoint, one cannot exclude the possibility that all the participants in this study paid more attention to information about the three high-status members than they did to the information about the low-status members, despite the fact that there were no objective differences between the two groups. All of us, independent of our own social status, may attend more to people who succeed than to those who fail at a particular task. If this is true, then one would expect to find, in addition to the out-group homogeneity effect, a Target Group main effect showing that people see the high-status group as more variable than the in-group. This is exactly what Lorenzi-Cioldi found: The Participant Group  $\times$  Relation to Target Group interaction that he interpreted as an asymmetric outgroup homogeneity effect can be reformulated as a Target Group main effect. Note that a Target Group main effect is not only psychologically interesting (why do we all give attention to the winners?), but also conceptually independent of an asymmetric out-group homogeneity effect (why do some of us display the bias less than others?). It seems, then, that even the use of artificial laboratory groups and constructed stimulus materials does not prevent a meaningful target group main effect from occurring. Participants' expectations or beliefs may still lead them to pay more attention or ascribe more variability to one group than to the other.

The results of our study are more consistent with the current literature on ethnocentrism effects. A meta-analysis by Mullen and his colleagues (1992) on research involving natural groups showed that the tendency to ascribe more positive traits to in-group than to out-groups does not depend on social status. Given the high correlation between

the predictions of the "classic hypothesis" and the observed interactions, our data seem to support Mullen et al.'s conclusion. Of course, the inferiority hypothesis is also consistent with our results, but it is unclear whether this consistency is due to social desirability effects. What is very clear, however, is our evaluation of the superiority hypothesis in the realm of ethnocentrism: Whereas with artificial groups there is a tendency for high-status groups to derogate out-groups more than do low-status groups (see Mullen et al., 1992), our results with natural groups are clearly different—doctors and lawyers did not show stronger ethnocentrism effects than hairdressers and waiters.

Although we believe that our research provides important insights into asymmetries in the out-group homogeneity and ethnocentrism effects there are some limitations to our research. First, we conducted only one study, and so a replication is necessary. Moreover, we studied occupational groups. Perhaps being a doctor or a waiter is less a part of one's social identity than being a woman or an African American. We cannot exclude the possibility that asymmetric effects appear in groups for which group membership is more important to participants. However, for many important sociodemographic variables, it may be difficult to find two high-status groups and two low-status groups. Participants are either male or female and there is no possibility to add more groups to the design. With ethnicity, the situation is somewhat easier. Despite these difficulties, future research with groups that are more central to participants' social identity will determine the generalizability of our results.

Further research is also necessary to examine the predictive power of the classic and the inferiority hypotheses in the realm of out-group homogeneity and ethnocentrism effects. The results of our study are clearly inconsistent with the dominant hypothesis in the literature, namely that out-group homogeneity and ethnocentrism are more pronounced among members of high-status groups (i.e., the superiority hypothesis). Although this inconsistency can be attributed to several factors (e.g., many of the earlier studies used gender or ethnicity as a basis of categorization, whereas we used occupational groups) we suspect that there was indeed a main effect for target group in earlier studies. In the case of perceived variability, a main effect of target group means that low-status groups were viewed, by all of the participants, as less heterogeneous than high-status groups. It would be interesting to learn if this difference represents a perceptual bias (i.e., a shared incorrect belief) or reflects reality (i.e., objective differences). Is there a general tendency for everyone to view members of low-status groups as relatively undifferentiated and similar to each other? If so, then what is the mediating process? Could it be that people are generally more familiar with exemplars of high-status groups and thus perceive high-status groups as more heterogeneous than low-status groups (Linville et al.,

1989)? Or, in the context of laboratory experiments, do people look at the “winners” in order to find out how to succeed in life, whereas they pay little attention to the “losers”?

Alternatively, the target group main effect in previous studies may simply reflect reality. In this case, one might ask why members of low-status groups become more similar to each other than members of high-status groups. Do low-status groups have stronger social norms? Are members of low-status groups more likely to exert social control when they observe deviant behavior? Do high-status groups really value individuality, whereas low-status groups emphasize conformity, as Lorenzi-Cioldi (1998) claims? Future research will have to address these questions. Our research takes a first step in this direction by showing that the dominant finding in the literature—that high-status groups display out-group homogeneity and ethnocentrism effects, whereas low-status groups do not—cannot be readily interpreted as an asymmetric bias in intergroup perception. It seems that our own social status does not influence how we perceive others, but instead influences how we are perceived by others.

## REFERENCES

- Bartsch, R. A., & Judd, C. M. (1993). Majority–minority status and perceived ingroup variability revisited. *European Journal of Social Psychology*, **23**, 471–485.
- Bartsch, R. A., & Judd, C. M. (1995). Cats, dogs, and OH Effect: A reply to Simon and to Haslam and Oakes. *European Journal of Social Psychology*, **25**, 477–480.
- Branthwaite, A., & Jones, J. E. (1975). Fairness and discrimination: English versus Welsh. *European Journal of Social Psychology*, **5**, 323–338.
- Brauer, M., & Judd, C. M. (2000). Defining variables in relationship to other variables: When interactions suddenly turn out to be main effects. *Journal of Experimental Social Psychology*, **36**, 410–423.
- Brehm, S. S. (1992). *Intimate relationships*. New York: McGraw–Hill.
- Brewer, M. B. (1979). In-group bias in the minimal intergroup situation: A cognitive-motivational analysis. *Psychological Bulletin*, **86**, 307–324.
- Brewer, M. B., & Campbell, D. T. (1976). *Ethnocentrism and intergroup attitudes: East African evidence*. New York: Halstead Press.
- Brown, R. (1995). *Prejudice: Its social psychology*. Oxford, UK: Blackwell.
- Brown, R., & Smith, A. (1989). Perceptions of and by minority groups: The case of women in academia. *European Journal of Social Psychology*, **19**, 61–74.
- Clark, K. B., & Clark, M. P. (1947). Racial identification and preference in Negro children. In E. E. Maccoby, T. M. Newcomb, & E. L. Hartley (Eds.), *Readings in social psychology* (pp. 602–611). New York: Holt, Rinehart, & Winston.
- Cohen, J., & Cohen, P. (1983). *Applied multiple regression/correlation analysis for the behavioral sciences*. Hillsdale, NJ: Erlbaum.
- Cooper, H. M. (1979). Statistically combining independent studies: A meta-analysis of sex-differences in conformity research. *Journal of Personality and Social Psychology*, **37**, 131–146.
- Crocker, J., & Major, B. (1989). Social stigma and self-esteem: The self-protective properties of stigma. *Psychological Review*, **96**, 608–630.
- Devos, T., Comby, L., & Deschamps, J. C. (1996). Asymmetries in judgments of ingroup and outgroup variability. In W. Stroebe & M. Hewstone (Eds.), *European review of social psychology* (Vol. 7, pp. 95–144). Chichester, England: Wiley.
- Dutton, D. G. (1976). Tokenism, reverse discrimination, and egalitarianism in interracial behavior. *Journal of Social Issues*, **32**, 93–107.
- Eagly, A. H. (1987). *Sex differences in social behavior: A social-role interpretation*. Hillsdale, NJ: Erlbaum.
- Eagly, A. H., Wood, W., & Fishbaugh, L. (1981). Sex differences in conformity: Surveillance by the group as a determinant of male nonconformity. *Journal of Personality and Social Psychology*, **40**, 384–394.
- Ellemers, N., Wilke, H., & van Knippenberg, A. (1993). Effects of legitimacy of low group or individual status on individual and collective status-enhancement strategies. *Journal of Personality and Social Psychology*, **64**, 766–778.
- Fiske, S. T. (1993). Controlling other people: The impact of power on stereotyping. *American Psychologist*, **48**, 621–628.
- Grant, P. R., & Brown, R. (1995). From ethnocentrism to collective protest: Responses to relative deprivation and threats to social identity. *Social Psychology Quarterly*, **58**, 195–211.
- Hewstone, M., & Ward, C. (1985). Ethnocentrism and causal attribution in southeast Asia. *Journal of Personality and Social Psychology*, **48**, 614–623.
- Hinkle, S., & Brown, R. (1990). Intergroup comparisons and social identity: Some links and lacunae. In D. Abrams & M. A. Hogg (Eds.), *Social identity theory: Constructive and critical advances* (pp. 48–70). New York: Springer-Verlag.
- Howard, J., & Rothbart, M. (1980). Social categorization and memory for ingroup and outgroup behavior. *Journal of Personality and Social Psychology*, **38**, 301–308.
- Jones, E. E., Wood, G. C., & Quattrone, G. A. (1981). Perceived variability of personal characteristics in in-groups and out-groups: The role of knowledge and evaluation. *Personality and Social Psychology Bulletin*, **7**, 523–528.
- Jost, J. T., & Banaji, M. R. (1994). The role of stereotyping in system-justification and the production of false consciousness. *British Journal of Social Psychology*, **33**, 1–27.
- Jost, J. T., & Burgess, D. (2000). Attitudinal ambivalence and the conflict between group and system justification motives in low status groups. *Personality and Social Psychology Bulletin*, **26**, 293–305.
- Judd, C. M., & Park, B. (1988). Out-group homogeneity: Judgments of variability at the individual and group levels. *Journal of Personality and Social Psychology*, **54**, 778–788.
- Judd, C. M., & Park, B. (1993). Definition and assessment of accuracy in social stereotypes. *Psychological Review*, **100**, 109–128.
- Judd, C. M., Park, B., Ryan, C. S., Brauer, M., & Kraus, S. L. (1995). Stereotypes and ethnocentrism: Interethnic perceptions of African American and White American college samples. *Journal of Personality and Social Psychology*, **69**, 460–481.
- Judd, C. M., Ryan, C. S., & Park, B. (1991). Accuracy in the judgments of in-group and out-group variability. *Journal of Personality and Social Psychology*, **61**, 366–379.
- Kahn, A., & Ryan, A. H. (1972). Factors influencing the bias towards one's own group. *International Journal of Group Tensions*, **2**, 33–50.
- Klauser, K. C., Ehrenberg, K., & Wegener, I. (1999). *Relative group size and entitativity*. Paper presented at the EAESP Small Group Meeting on Group Homogeneity and Entitativity, Louvain-la-Neuve (July, 1999).
- Lee, Y. T., & Ottati, V. (1993). Determinants of in-group and out-group



- perceptions of heterogeneity. *Journal of Cross-cultural Psychology*, **24**, 298–318.
- Levine, R. A., & Campbell, D. T. (1972). *Ethnocentrism: Theories of conflict, ethnic attitudes and group behavior*. New York: Wiley.
- Lewin, K. (1948). *Resolving social conflicts*. New York: Harper.
- Linville, P. W., Fischer, G. W., & Salovey, P. (1989). Perceived distributions of characteristics of ingroup and outgroup members: Empirical evidence and a computer simulation. *Journal of Personality and Social Psychology*, **57**, 165–188.
- Linville, P. W., Salovey, P., & Fischer, G. W. (1986). Stereotyping and perceived distributions of social characteristics: An application to ingroup–outgroup perception. In J. Dovidio & S. L. Gaertner (Eds.), *Prejudice, discrimination, and racism* (pp. 165–208). New York: Academic Press.
- Locksley, A., Ortiz, V., & Hepburn, C. (1980). Social categorization and discriminatory behavior: Extinguishing the minimal intergroup discrimination effect. *Journal of Personality and Social Psychology*, **39**, 773–783.
- Lorenzi-Cioldi, F. (1988). *Individus dominants et groupes dominés* [Dominant individuals and dominated groups]. Grenoble, France: Presses Universitaires.
- Lorenzi-Cioldi, F. (1993). They all look alike, but so do we sometimes . . . Perception of ingroup and outgroup homogeneity as a function of gender and context. *British Journal of Social Psychology*, **32**, 111–124.
- Lorenzi-Cioldi, F. (1995). The self in collection and aggregate groups. In I. Lubeck, R. van Hezewijk, G. Petherson, & C. W. Tolman (Eds.), *Trends and issues in theoretical psychology* (pp. 46–52). New York: Springer-Verlag.
- Lorenzi-Cioldi, F. (1998). Group status and perceptions of homogeneity. In W. Stroebe & M. Hewstone (Eds.), *European review of social psychology* (Vol. 9, pp. 31–75). Chichester, UK: Wiley.
- Lorenzi-Cioldi, F., Eagly, A. H., & Stewart, T. L. (1995). Homogeneity of gender groups in memory. *Journal of Experimental Social Psychology*, **31**, 193–217.
- Marx, K., & Engels, F. (1848/1969). Communist Manifesto. In S. Moore (Ed.), *Marx/Engels selected works* (Vol. 1, pp. 98–137). Moscow: Progress.
- McGuire, W. J. (1984). Search for the self: Going beyond self-esteem and the reactive self. In R. A. Zucker, J. Aronoff, & A. I. Rabin (Eds.), *Personality and the prediction of behavior* (pp. 73–120). New York: Academic Press.
- Mlicki, P. P., & Ellemers, N. (1996). Being different or being better? National stereotypes and identifications of Polish and Dutch students. *European Journal of Social Psychology*, **26**, 97–114.
- Mullen, B., Brown, R., & Smith, C. (1992). Ingroup bias as a function of salience, relevance, and status: An integration. *European Journal of Social Psychology*, **22**, 103–122.
- Ostrom, T. M., Carpenter, S. L., Sedikides, C., & Li, F. (1993). Differential processing of ingroup and outgroup information. *Journal of Personality and Social Psychology*, **64**, 21–34.
- Ostrom, T. M., & Sedikides, C. (1992). Out-group homogeneity effects in natural and minimal groups. *Psychological Bulletin*, **112**, 536–552.
- Park, B., & Judd, C. M. (1990). Measures and models of perceived group variability. *Journal of Personality and Social Psychology*, **59**, 173–191.
- Park, B., & Rothbart, M. (1982). Perception of out-group homogeneity and levels of social categorization: Memory for the subordinate attributes of in-group and out-group members. *Journal of Personality and Social Psychology*, **42**, 1051–1068.
- Park, B., Ryan, C. S., & Judd, C. M. (1992). The role of meaningful subgroups in explaining differences in perceived variability for ingroups and outgroups. *Journal of Personality and Social Psychology*, **63**, 553–567.
- Quattrone, G. A., & Jones, E. E. (1980). The perception of variability within ingroups and outgroups: Implications for the law of small numbers. *Journal of Personality and Social Psychology*, **38**, 141–152.
- Rabbie, J. M., & Horwitz, M. (1969). Arousal of ingroup–outgroup bias by a chance win or loss. *Journal of Personality and Social Psychology*, **13**, 269–277.
- Rosnow, R. L., & Rosenthal, R. (1989). Definition and interpretation of interaction effects. *Psychological Bulletin*, **105**, 143–146.
- Ryan, A. H., & Kahn, A. (1975). Effects of intergroup orientation on group attitudes and proxemic behavior. *Journal of Personality and Social Psychology*, **31**, 302–310.
- Sachdev, I., & Bourhis, R. Y. (1987). Status differentials and intergroup behavior. *European Journal of Social Psychology*, **17**, 277–293.
- Sachdev, I., & Bourhis, R. Y. (1991). Power and status differentials in minority and majority group relations. *European Journal of Social Psychology*, **21**, 1–24.
- Sedikides, C. (1997). Differential processing of ingroup and outgroup information: The role of relative group status in permeable boundary groups. *European Journal of Social Psychology*, **27**, 121–144.
- Sidanius, J., & Pratto, F. (1993). The inevitability of oppression and the dynamics of social dominance. In P. M. Snyderman, P. E. Tetlock, & E. G. Carmines (Eds.), *Prejudice, politics, and the American dilemma* (pp. 173–211). Stanford, CA: Stanford Univ. Press.
- Simon, B. (1992). The perception of ingroup and outgroup homogeneity: Reintroducing the intergroup context. In W. Stroebe & M. Hewstone (Eds.), *European review of social psychology* (Vol. 3, pp. 1–30). Chichester, UK: Wiley.
- Simon, B. (1995). The perception of ingroup and outgroup homogeneity: On the confounding of group size, level of abstractness and frame of reference. A reply to Bartsch and Judd. *European Journal of Social Psychology*, **25**, 463–468.
- Simon, B., Glässner-Bayerl, B., & Stratenwerth, I. (1991). Stereotyping and self-stereotyping in a natural intergroup context: The case of heterosexual and homosexual men. *Social Psychology Quarterly*, **54**, 252–266.
- Skevington, S. (1981). Intergroup relations and nursing. *European Journal of Social Psychology*, **11**, 43–59.
- Tajfel, H. (1982). Social Psychology of intergroup relations. *Annual Review of Psychology*, **33**, 1–30.
- Tajfel, H., Flament, C., Billig, M. G., & Bundy, R. P. (1971). Social categorization and intergroup behavior. *European Journal of Social Psychology*, **1**, 149–178.
- van Knippenberg, D., Blaauw, B., & Vermunt, R. (1996). *Asymmetries in intergroup perceptions: Ingroup bias and the outgroup homogeneity effect among inmates and guards in a US jail*. Unpublished raw data.