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Effects of Power on Perceived and Objective Group Variability: Evidence That More Powerful Groups Are More Variable

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The perception of group variability is affected by social power and status. Three different mechanisms may be responsible for these effects: (a) the power of the perceiver affects perceived group variability; (b) the power of the perceived group affects its perceived variability; and (c) the power of the group affects its actual variability. Two studies are reported to tease apart these three mechanisms and provide support for the third. In the first study, high- and low-power groups interacted and subsequently judged each other. In the second study, participants observed and rated the Study 1 groups, either knowing their power relationship or not. Results suggest that members of high-power groups manifest greater interpersonal variability than members of low-power groups.

Historically, research in intergroup relations has focused on factors responsible for intergroup hostility and ethnocentrism. More recently, attention has been focused on an additional component of intergroup judgment: perceived group variability. A consistent, although not universal, finding has been that out-groups are judged to be less variable than are in-groups (the out-group homogeneity effect; e.g., Park & Judd, 1990; Park & Rothbart, 1982; Quattrone & Jones, 1980). The perception of group variability, in particular the out-group homogeneity effect, is theoretically important because the tendency to perceive groups as more or less variable affects the extent to which group stereotypes are potent and likely to be relied on in the judgment of individual group members (e.g., Ryan, Judd, & Park, 1996). Accordingly, research has explored both the causes and the consequences of perceived group variability.

Social groups outside of the laboratory are typically arranged in different locations in the overall social structure, with differing statuses, degrees and bases of power, and relative sizes. Accordingly, research has addressed the extent to which the basic finding of out-group homogeneity is moderated by relative group sizes (Simon & Brown, 1987), relative group statuses (Lorenzi-Cioldi, 1993), and intergroup outcome dependency or power (Guinote & Fiske, 1999). It has been claimed that all three of these variables moderate and may actually reverse out-group homogeneity, with smaller groups, lower status groups, and low-power groups perceiving more out-group variability than in-group variability.

It is perhaps no accident that the moderating effects of these three variables—group size, status, and relative power—on the perception of in-group and out-group variability have been hypothesized to run in the same direction, because in fact these three variables tend to positively covary in social structures. Indeed, it has been argued that these three constructs are inevitably intertwined. For instance, Ebenbach and Keltner (1998), Guinote, Brown, and Fiske (2000), and Ng (1982) argued that relative group size serves as one basis for group power. Similarly, Wolf and Latané (1985) claimed that group size, status, and power are interrelated variables with equivalent effects on target individuals. Although one can certainly think of cases that are exceptions to the positive covariation of these three variables (e.g., in apartheid South Africa, the White minority possessed both status and power), in general, groups that are more powerful tend to have higher social status and frequently are majority groups.

Our main focus in the current work is to identify the various ways social power may affect the perception of group variability. We argue that there are three different ways variables such as relative power, status, and size may have such effects, and we attempt to tease these ways apart. Our focus is on social power rather than status or size, in part because it has occupied a central role in recent work on intergroup perception. Indeed, numerous social theorists have argued that power differences among different social groups in societies fundamentally underlie differences in social status and patterns of discrimination (Barth & Noel, 1972; Marger, 1985; Schermerhorn, 1970)

We start by reviewing the literature that has documented differences in perceived variability as a function of power, status, and

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size. In so doing, we outline three different kinds of mechanisms by which these differences may occur, and we then present research that offers the potential for teasing them apart.

Simon and Brown (1987) reported a study in which participants performed a perceptual task and were told that different perceptual styles were associated with differences in personality. They were given feedback on their styles and were informed that the number of people manifesting each style varied. Accordingly, across participants, in-group size and out-group size varied. Results indicated that members of minorities perceived the in-group as more homogeneous than the out-group, whereas members of majorities perceived the out-group as more homogeneous than the in-group. This finding was replicated in several other studies, both with artificial (e.g., Simon & Pettigrew, 1990) and with natural minorities (Brown & Smith, 1989; Guinote, 2001; Simon, Glässner-Bayerl, & Stratenwerth, 1991). A meta-analysis reported by Mullen and Hu (1989) confirmed that, in general, a decrease in the size of the in-group was associated with a tendency to see the out-group as more variable relative to the in-group.

The original explanation for this moderating role of group size offered by Simon and Brown (1987) focused on the potential threat that being a minority group member might have on members' self-esteem. Because of this potential threat, Simon and Brown argued, members of minority groups might accentuate in-group resemblances, particularly on positively valenced attributes, to achieve a self-affirming in-group solidarity. More recently, Simon and his colleagues (Simon & Hamilton, 1994; Simon & Pettigrew, 1990) have offered a more cognitive account of the process, based on self-categorization theory (Turner, Hogg, Oakes, Reicher, & Whetherell, 1987). According to this account, the perception of group variability depends on self-categorization (i.e., the tendency to categorize oneself as a group member vs. as an individual). Self-categorization as a group member is thought to be more likely in minority groups, and this self-categorization leads to a more homogeneous perception of the in-group (Haslam, Oakes, Turner, & McGarty, 1995).

Focusing on power rather than on relative group size, Fiske and colleagues (Fiske, 1993; Fiske & Dépret, 1996; Guinote & Fiske, 1999) have argued that individuals in low-power groups, because they are outcome dependent on more powerful others, should more closely attend to those more powerful others and hence should be more likely to individuate them. On the other hand, individuals in high-power groups should tend not to individuate low-power others because they are not outcome dependent on those others.

Although the theoretical orientation of Fiske and colleagues (Fiske, 1993; Fiske & Dépret, 1996; Guinote & Fiske, 1999) is rather different from that of Simon and his colleagues (Simon & Hamilton, 1994; Simon & Pettigrew, 1990), both sets of authors developed structurally similar hypotheses about the effects of power and size. They both suggested that it is something about the perceiver (i.e., his or her power, status, or size) that moderates the perception of group variability. That is, if a person is in a high-power, high-status, or majority group, he or she judges variability, either of the in-group or of the out-group, differently than does a person who is a member of a minority, low-power, or low-status group. Accordingly, these explanations constitute a class of explanations that we refer to as hypothesizing *effects due to the perceiver's position*.[1]

A somewhat different approach to the moderation of perceived group variability has been taken by Lorenzi-Cioldi (Lorenzi-Cioldi 1993, 1998; Lorenzi-Cioldi, Eagly, & Stewart, 1995), who has focused on the role of status in affecting perceptions. The primary measure of group variability used by Lorenzi-Cioldi has relied on within-group, memory-based confusions, using the who-said-what task developed by Taylor and her colleagues (Taylor, Fiske, Etcoff, & Ruderman, 1978). In this case, more within-group memory confusions presumably indicate less individuation, consistent with less perceived within-group variability. The primary results of this line of work are that high-status group members make more within-group confusions for out-groups than for in-groups (i.e., out-group homogeneity), whereas low-status group members do not.

Lorenzi-Cioldi (1993, 1998) explained this status effect by focusing on what he argued is a shared social norm to individuate high-status, high-power individuals. Thus, high-status targets are individuated more by all perceivers than are low-status targets, and, hence, high-status and (presumably) high-power groups are seen to be more variable than are low-status and low-power groups.

Mullen (1991) has developed a salience explanation to account for perceived variability differences as a function of target group size. He argued that minority groups are more salient because they become the focus of attention or the figure against the background of the majority group. As a result, Mullen argued, a more prototypic representation of minorities occurs, focusing on the prototypic members of the group rather than on the diversity of the group members.

In form, the explanations offered by Lorenzi-Cioldi (1993, 1998) and Mullen (1991) are rather different from those that we earlier characterized as hypothesizing effects due to the perceiver's position. Rather than the power or status of the perceiver influencing the perception of group variability, it is the perceived power or status of the target group being judged that is thought to influence its perception. These explanations focus on the ways power, status, and relative size of a target group affect its perception. We refer to this sort of explanation for the moderating role of status, power, and size as hypothesizing *effects due to the target's perceived position*.

The two explanations outlined so far focus on the ways power, status, and size affect perception, either as a function of the position of the perceiver or as a function of the position of the target group that is perceived. Both explanations argue that power or status influences perception directly in such a way as to alter it over what it would otherwise be. There is a third explanation that differs from these two in that it argues that power, status, or size affects perception indirectly rather than directly. According to this third explanation, power or status affects the actual or objective variability of a group, and differences in the perception of group variability as a function of power or status follow from these

[1] We use the term *position* here to refer to levels of relative power, status, or group size, as the explanations that we seek to differentiate could derive from all three independent variables. Our specific operationalization focuses on power rather than status or size, so at a later point we refer more specifically to this explanation as hypothesizing effects due to the perceiver's power.

objective differences. We refer to this sort of explanation as hypothesizing *effects due to the target's actual position*. This third explanation has recently been articulated by Brauer (2001; Brauer & Judd, 2000).

Social power has been defined in many different ways: as potential influence (Cartwright, 1959; French & Raven, 1959), coercion (Moscovici, 1976; Weber, 1947), and control over outcomes (Dépret & Fiske, 1993; Emerson, 1962; Thibaut & Kelley, 1959). One common component of power, in addition to the ability to influence others and control their outcomes, is the ability to resist social control and influence from others (Cartwright, 1959; Lewin, 1941). Accordingly, high power (and high status) confers the ability to resist social constraints or controls on behavior that other people or situational forces may impose (Hollander, 1958). From this, it seems reasonable to hypothesize that in high-power and -status groups, individuals are able to act in more idiosyncratic and individuated manners rather than being subject as strongly to the norms and expectations that constrain behavior among low-power individuals.

If this is the case, then there may actually be greater variability manifested by individuals in high-power and -status groups than that manifested by individuals in low-power target groups. Like the earlier explanation that focuses on effects due to the target's perceived position, this third explanation focuses on the ways the power or status of the target group affects judgments of its variability. But unlike the earlier explanation, it is not the perception of power or status in a target group that affects, in turn, how variable that target group is perceived to be. Rather, it is the possession of power or status by a target group that influences the actual behavioral variability manifested by the members of that group, and this actual variability in turn affects the perception of group variability.

Research in areas outside of the domain of stereotyping and intergroup relations lends some support to the hypothesis that powerful individuals manifest greater variability in their behavior. First, ethological work with primates (Maslow, 1973b, 1973c) has shown that dominant primates display greater levels of activity and exploration and both more aggressive and more playful behaviors than do less dominant primates. In humans, dominance and power have been argued to be associated with behavior disinhibition, whereas the lack of power is associated with inhibition of behavior and impoverished action repertoires (e.g., Eisenberg, 1937; Keltner, Young, Oemig, Heerey, & Monarch, 1998; Patterson, 1985; Skinner, 1995). Also, work on interpersonal communication suggests that more powerful individuals manifest a broader array of nonverbal behaviors than less powerful individuals, and these behaviors are more consistent with self-reported internal dispositions (Hecht & LaFrance, 1998).

Furthermore, there is considerable research showing that perceivers are sensitive to differences between groups in their actual variability (Judd, Ryan, & Park, 1991; Nisbett & Kunda, 1985). Accordingly, it seems reasonable that if the possession of power unconstrains behaviors so that high-power individuals can act in more idiosyncratic and individualized ways, then perceivers ought to be able to perceive that difference.

Research Overview

Our primary goal in the research presented in this article is to provide a mechanism to evaluate the relative merits of each of these three ways of explaining how power affects the perception of in-group and out-group variability. Because all of the explanations that have been offered in the literature for the moderation of perceived group variability as a function of power, status, and size have relied on perceptual explanations of these effects (hypothesizing either effects due to the perceiver's position or effects due to the target's perceived position), we wanted in particular to allow our research methods to detect any actual difference in target group variability as a function of the target group's power. Accordingly, a more specific goal was to determine whether, beyond the perceptual explanations offered in the literature, we could find any support for the notion that differential power influences the actual variability of in-groups and out-groups.

To accomplish these goals, we conducted two studies. In the first, 8 individuals participated in each session, with 4 randomly assigned to a high-power, outcome-independent group and 4 assigned to a low-power, outcome-dependent group. During the sessions, group members introduced themselves and described their interests and abilities to everyone in the session, and they performed a common task within their group. Following these interactions, all participants then rated all 8 individuals in the session, including themselves, as well as provided group-level judgments. All of these sessions from the first study were videotaped, including tapes of the individual participant self-presentations as well as the group interactions. In the second study, participants were randomly assigned to watch the videotapes from one of the sessions. Additionally, we manipulated whether these Study 2 observer participants knew of the power distinction between the two groups in the session they were watching. After watching the videotapes, participants also provided ratings of the 8 individuals in the group session as well as group-level ratings.

If power affects the perception of group variability through effects due to the perceiver's power, then participants in Study 1 assigned to high- and low-power groups should show differences in their estimates of in-group and out-group variability. However, Study 2 participants who observed the groups should show no differences because they are not themselves in one of the two power positions. On the other hand, if power affects the perception of group variability through effects due to the target's perceived power, then both participants in Study 1 and participants in Study 2 who have knowledge of the power relationship between the two groups should show differences in the perceived variability of the groups. However, Study 2 participants who do not know the power relationship between the groups should show no differences. Finally, if the possession of power directly influences the actual or objective behavioral variability and only indirectly influences the perception of variability, then all Study 2 participants, regardless of whether they know the power relations between the groups in the session, should manifest target group differences in perceived variability.

Measuring Perceived Variability at the Individual Level

Boldry and Kashy (1999) have recently used Kenny's (1994; Kenny & La Voie, 1984) social relations model (SRM) to examine perceptions of variability among target group members. Because this approach seemed to us to offer insights that traditional approaches (e.g., Park & Judd, 1990) to the assessment of group variability did not, we decided to use it as well as those traditional

approaches. Accordingly, we analyzed the individual rating data from our participants using SRM programs (BLOCKO; Kenny, 1998a; SOREMO; Kenny, 1998b).

This approach permits one to decompose the variance in matrices of Perceiver × Target rating data into three components: variation in ratings due to perceiver differences (e.g., ratings given by a particular participant are higher or lower on average than ratings given by another participant), variation in ratings due to target differences (e.g., ratings of a given target participant are higher or lower on average than ratings of another target participant), and variation in ratings due to the relationship between particular perceivers and targets (e.g., beyond perceiver differences and target differences, there is variation in ratings due to the unique perception of this target participant by this rater participant).[2]

Boldry and Kashy (1999) have argued that perceiver variance, target variance, and relationship variance are all components of perceived group variability. If perceiver variance is relatively large, it means that perceivers are showing stable individual differences in their ratings across targets. Rather than differentiating the targets, they are assimilating them to their own particular tendency to rate everyone high or low. Accordingly, more perceiver variance can be interpreted to mean less variable target group perceptions. Target variance, on the other hand, is large when all perceivers agree on how they rate the targets, with some targets given high ratings by all perceivers and others given low ratings. High target variance thus implies consensually shared perceptions of group variability. Relationship variance is high when perceivers differentiate among targets in their ratings but do so in idiosyncratic ways rather than in consensually shared ways. Higher relationship variance thus also implies greater perceived variability among target group members, but in this case in idiosyncratic ways rather than in consensually shared ways.

Although our focus is on the perception of group variability, our measures also permit us to explore power differences in intergroup bias, because the ratings were done on positively and negatively valenced trait dimensions. Accordingly, in addition to discussing results on perceived variability and the variance components from the social relations decomposition, we also present results on mean ratings provided by participants in both studies.

Study 1

Method

Participants and Design

Eighty participants (27 men and 53 women) recruited from psychology classes participated for pay in a study that they were told concerned creativity. Eight participants were scheduled at a time; thus, in total 10 sessions were run. Participants were recruited for a session only if they did not know any of the other participants in that session. Within each session, as explained below, 4 participants were randomly assigned to the worker group (low power) and the other 4 were randomly assigned to the judge group (high power).

Procedure

After all 8 participants showed up for a session, they were told that we were conducting the research to explore two different aspects of creativity: the ability to generate solutions and the ability to evaluate them. So that we could study these two different aspects simultaneously, some participants would be working on tasks, whereas the other participants would judge the quality of the solutions that were generated. To determine who would generate solutions and who would judge them, we gave participants a test that had allegedly been developed to determine who is better at generating solutions and who is better at judging solutions. After this short test was administered, the experimenter and assistant spent a few minutes coding the results. Presumably on the basis of the results, 4 of the participants were told that they would be workers and 4 of the participants were told that they would be judges. In fact, assignment of participants to the two roles was randomly determined.

After assignment to the two groups, the workers were taken to one side of the large experimental room and seated around a table. They were given large name tags identifying them as W1, W2, W3, or W4 and were told that *W* meant worker. Similarly, the judges were taken to the other side of the room, seated around a table, and given name tags identifying them as J1 through J4. The experimenter then explained that the workers would generate solutions on four different tasks. To do this, they would first discuss the task as a group, and then each worker would generate his or her own solution following the group discussion. The judges would evaluate the solutions generated by the workers on each task, with each judge being responsible for one of the four tasks. To ensure that the workers were outcome dependent on the judges, we told workers that their base pay for the experimental session was $6 but that on any given task, if the judge of that task determined that the workers as a group had been particularly creative, then the judge could augment each worker's pay by $1. This was the case for each task and each judge; thus, workers believed that their pay would be between $6 and $10, with the differences to be decided by the judges. Judges were told that they would earn $8 for their participation.

After explaining this, the experimenter told the participants that both groups, the judges and the workers, would do an initial training task to give both groups the flavor of the tasks to be done subsequently. This training task involved a social dilemma in which a decision had to be made about the location of a toxic waste facility. The workers and judges were given the same training task, each group discussed the training task for 10 min and then each person was given 5 min to write their individual solutions. Throughout this 15-min period, each group was videotaped; using two cameras, one trained on the workers and one trained on the judges.

After the training task, the participants were told that it would be beneficial if everyone knew a bit about each other prior to the tasks. Accordingly, each participant was asked to describe himself or herself by saying a few words to everyone in the session. Specifically, they were asked to provide answers to the following three questions:

1. Can you give me an idea about what kind of person you are, how you describe yourself to someone else?
2. Now I want you to tell me what you think are your best qualities, what you like most about yourself.
3. Finally, can you tell me a little bit about your interests, what you spend your time doing, the sorts of things you like most?

All the members of one group self-presented before members of the other group did so, but the order of the two groups (workers vs. judges) was counterbalanced. These individual presentations were also videotaped.

After these self-presentations, participants completed the dependent variable questionnaire. Subsequently, they were fully debriefed, paid $8, and dismissed.

[2] When there is only a single attribute on which ratings are given, the relationship component includes random error. When multiple attributes are used, all presumably measuring the same latent construct, then relationship variance and random error can be disentangled.

Dependent Measures

The first rating task on the questionnaire asked each participant to rate all group members, both the 4 workers and the 4 judges (including the participant himself or herself) on eight 9-point trait scales (1 = *not at all*; 9 = *extremely*). The specific trait dimensions were "assertive," "stubborn," "hardworking," "dependent," "creative," "intelligent," "lazy," and "rigid." These were chosen so that half were positively valenced and half were negatively valenced. They were also relevant to the general task setting, although they were not chosen to be clearly stereotypic of one group or the other. Following these individual trait ratings, participants were asked two questions about perceived within-group similarity. Specifically, they were asked to indicate on 9-point scales how similar they thought the judges were to each other overall and how similar they thought the workers were to each other overall. Finally, participants were asked to consider groups of judges and workers in general, not just the 4 in the particular group they saw but the larger group of judges and workers from whom these had been sampled and who had participated in other experimental sessions. For each of the eight trait dimensions used previously in the individual judgments, participants completed a subjective histogram task for each target group. On this task, participants were asked to draw a subjective frequency distribution or histogram for each group, indicating the relative proportion of group members at five different locations across the given trait dimension. They did this both for the judges in general and for the workers in general.

In addition to these questionnaire measures, we also developed dependent measures from the videotapes of the individual self-presentations. First, we simply calculated the amount of time that each participant spent presenting and describing himself or herself. Then, we transcribed these self-presentations and coded them in two different ways. First, we counted the number of self-descriptive trait terms used and the number of interests and activities that each participant mentioned. Second, we coded the content of these self-presentations using the linguistic category model (LCM; Fiedler & Semin, 1989; Maass, Salvi, Arcuri, & Semin, 1989; Semin & Fiedler, 1988). This model codes linguistic material into four categories that vary in abstractness. Descriptive action verbs (DAVs) are the most concrete category. They refer to observable behaviors with invariant components (e.g., to kick, to push, to phone). Interpretative action verbs (IAVs), at the next level of abstractness, refer to specific action episodes abstracting from concrete details (e.g., to help, to obey). Next are state verbs (SVs), which refer to subjective and unobservable states of the target (e.g., to love, to admire). Finally, adjectives (ADJs), refering to stable internal traits of the target (e.g., friendly, intelligent), constitute the most abstract category. In general, these categories differ in the extent to which they are informative about stable and enduring attributes of the target (in this case, of the self): At one end, DAVs are more informative about the situation and less so about the target: at the other end. ADJs are highly informative about the target, highlighting his or her stable attributes. It seemed to us possible that high-power targets might use more abstract language in referring to themselves.

Results

Because of potential dependence of the individual observations due to groups, all analyses were conducted using the experimental session as the unit of analysis.[3] Accordingly, analyses of the data treated perceiver power and target power as within-session factors and collapsed across the individual participants within the worker and judge groups.

The results we present below are organized as follows. First, we present results from a question that asked about relative power of the two groups, as a manipulation check. Next, we focus on the primary outcome variables of interest, those that assess perceived group variability, both using the individual rating data (including the social relations decomposition) and using the ratings of the larger group. Third, we present analyses of mean ratings given both to the self and to the two groups to assess any effects on intergroup evaluative bias. Finally, we present results from the coded videotaped self-presentations.

Manipulation Check

To verify that judges were seen to have more power than were workers, we asked both sets of participants to indicate on a 1–9 scale the extent to which each power group was in charge of the situation. On average, participants agreed that the judges were more in charge than were the workers ($M = 6.65$ vs. $M = 5.71$), $F(1, 9) = 6.87$, $p < .05$. However, this main effect was qualified by a significant interaction between target power and participant power, $F(1, 9) = 7.29$, $p < .05$, such that the perception that the judges were more in charge was especially true for participants who were the judges compared with participants who were the workers.[4]

Perceived Group Variability

Three primary measures were collected that permit the assessment of perceived group variability. First, measures of target variability were computed from the individual target trait ratings. More specifically, we computed for each participant on each trait both the range and the standard deviation of the ratings given to the 4 targets from each power group. We then averaged across the four positively valenced traits and across the four negatively valenced traits and analyzed the resulting range and standard deviation measures, treating participant power group, target power group, and trait valence as within-session factors. These individual target ratings were also analyzed using the variance decomposition specified in the SRM. Second, the within-group similarity ratings were analyzed as a function of participant power group and target power group. Finally, standard deviations were computed from the histogram task and analyzed as a function of target group, participant group, and trait valence.

Range of individual target ratings. The analysis of the range of ratings given the target group members on the traits revealed two significant effects. First, there was a significant Power of Perceiver × Valence interaction, $F(1, 9) = 5.77$, $p < .05$, such that the range of trait ratings given by high-power participants was

[3] This might seem to be a rather low-power analysis strategy, as the degrees of freedom for error for tests of effects derive from the number of sessions rather than the number of participants. However, to the extent that there are dependencies due to session, this is the appropriate analytic strategy. Additionally, because session means are considerably more stable than are individual participant responses, it is not clearly the case that this analytic approach sacrifices statistical power (Kenny, Kashy, & Bolger, 1998). All analyses were also done treating the individual as the unit. These analyses reached conclusions that were generally quite consistent with those we report.

[4] The simple difference for the worker participants was not significant. Thus, it might seem that these low-power participants did not recognize their low-power position. However, we argue later that these participants acted in a variety of ways to augment their relative position. We believe that this accounts for the absence of a significant difference in the case of the worker participants.

greater on the negatively valenced traits than on the positively valenced ones, whereas the opposite was true for the low-power participants. Of more interest was a significant interaction between perceiver power group and target power group, $F(1, 9) = 5.67$, $p < .05$, such that out-group individuals were judged to be more variable than were in-group individuals. The relevant means are given at the top of Table 1. Tests of the simple target group difference within each perceiver group revealed that the difference in perceived variability was significant for the low-power perceivers, $F(1, 9) = 5.71$, $p < .05$, but not for the high-power perceivers, $F(1, 9) < 1.00$. It is somewhat surprising, therefore, that the high-power perceivers did not manifest out-group homogeneity; however, the ratings of the low-power perceivers showed a significant reversal of out-group homogeneity, consistent with earlier work.

Standard deviation of individual target ratings. It is not surprising that the standard deviation of individual target ratings revealed results that were quite similar to those found for the range. There was again a significant interaction between the valence of the traits and the power of the perceiver, $F(1, 9) = 6.09$, $p < .05$, indicating that high-power perceivers showed greater variability in rating targets on negatively valenced traits than on positively valenced ones, whereas the opposite was true for low-power perceivers. Additionally, there was a significant Perceiver Power × Target Power interaction, $F(1, 9) = 5.19$, $p < .05$, again suggesting in-group homogeneity. (See the relevant means in the middle of Table 1.) Simple analyses within each perceiver group showed that this in-group homogeneity effect was significant in the case of low-power perceivers, $F(1, 9) = 5.20$, $p < .05$, but not in the case of high-power perceivers, $F(1, 9) < 1.00$. Again, our low-power perceivers showed a significant reversal of out-group homogeneity.

SRM variance decomposition. In addition to the above analyses of the individual rating data, the variance in the individual trait ratings were decomposed into perceiver, target, and relationship variance components, following Kenny's (1994) SRM. Variance components were computed for each trait dimension, and analyses of each component were collapsed across the traits within each valence. The social relations analyses actually involved four different computer runs. In the case of the two in-group rating matrices (i.e., workers rating workers and judges rating judges), the SOREMO program was used. For the out-group rating matrices, the BLOCKO program was used.

It is somewhat surprising, given the results we have just reported for the range and standard deviation measures computed on the same individual target ratings, that only valence effects emerged in the SRM analyses. More specifically, there was a significant valence main effect in the analysis of perceiver variance, $F(1, 9) = 171.18$, $p < .01$, such that there was more perceiver variance on negatively valenced traits than on positively valenced ones. Similarly, the analysis of relationship variance showed a significant valence difference in the same direction, $F(1, 9) = 7.72$, $p = .02$. No significant effects emerged in the analysis of target variance.

Table 1
Perceived Variability of Target Individuals—Study 1

Statistic	High-power targets	Low-power targets
Range of individual trait ratings		
High-power perceivers	2.46	2.59
Low-power perceivers	2.30	1.94
SD of individual trait ratings		
High-power perceivers	1.14	1.19
Low-power perceivers	1.15	0.90
Perceived similarity of target individuals		
High-power perceivers	4.80	4.40
Low-power perceivers	4.80	5.30

Perceived similarity of the target groups. After completing the ratings of the individuals, participants were asked to judge how similar the members of each of the two groups were to each other. The analyses of these similarity ratings revealed results quite consistent with the range and standard deviation measures of variability that we discussed earlier. The relevant means are presented at the bottom of Table 1. There was the same Perceiver Group × Target Group interaction, suggesting in-group homogeneity, but this time it was only marginally significant, $F(1, 9) = 4.62$, $p = .06$. And again, this tendency to see greater similarity among in-group members than among out-group members was found in the case of low-power perceivers, $F(1, 9) = 4.61$, $p = .06$, but was not significant in the case of high-power perceivers, $F(1, 9) = 1.82$, *ns*.

Standard deviation from the histogram task. Participants were asked to think about the larger groups of workers and judges and to generate subjective histograms of the distribution of these groups on each of the eight trait dimensions. From these, we computed standard deviations to assess the perceived variability of these larger groups. Analyses of these standard deviations revealed only a significant target group main effect, $F(1, 9) = 7.46$, $p < .05$, such that all participants saw more variability in the larger group of more powerful targets (i.e., judges; $M = 1.13$) than in the larger group of less powerful targets (i.e., workers; $M = 1.08$). This difference did not depend on perceiver group, although the simple target group difference was significant only in the case of the low-power perceivers, $F(1, 9) = 5.09$, $p < .05$.

In sum, across the individual trait ratings, the perceived similarity ratings, and the subjective group histograms, there is consistent evidence that low-power perceivers saw greater variability in the high-power out-group than in their own group, consistent with previous work that has found a reversal of out-group homogeneity among perceivers who are members of low-power, low-status, or minority groups. It is somewhat surprising that perceivers who were members of the high-power groups saw no variability differences between their in-group and out-group.

Intergroup Bias

Three measures of how perceivers evaluated themselves and the two groups of participants in the session are available. First, we can examine the self-ratings to see whether these show evaluative differences as a function of perceiver power group. Second, we can analyze the valence of the mean target ratings for the two groups. Third, we can analyze the means from the subjective histograms.

Self-ratings. The analysis of the self-ratings revealed a significant valence of trait main effect, $F(1, 9) = 244.75$, $p < .0001$, a significant effect of participant power group, $F(1, 9) = 13.04$, $p < .01$, and a significant interaction between the two factors, $F(1, 9) = 10.81$, $p < .01$. All participants rated themselves higher on the positive traits than on the negative ones, but this difference was

larger for the low-power workers ($M = 6.43$ vs. $M = 3.54$) than for the high-power judges ($M = 6.57$ vs. $M = 4.71$). Accordingly, low-power participants tended to describe themselves more positively than did high-power participants.

Mean target ratings. The analysis of the mean individual ratings on positive and negative traits revealed a main effect of the power of the perceiver, $F(1, 9) = 6.21$, $p < .05$, such that high-power perceivers gave higher trait ratings across all traits to targets than did low-power perceivers. There was also a main effect of power of the target, $F(1, 9) = 17.47$, $p < .005$, such that higher ratings across all traits were given to high-power targets. Additionally, there was a strong main effect for valence, $F(1, 9) = 153.20$, $p < .001$, such that all target individuals were rated more highly on positive traits than on negative ones. There was also a significant two-way interaction between valence and power of the perceiver, $F(1, 9) = 6.65$, $p < .05$, such that low-power perceivers judged target individuals from both groups more positively than did high-power perceivers. And finally, there was a significant triple interaction among all three factors, $F(1, 9) = 18.51$, $p < .005$. As the means in Table 2 show, perceivers gave more favorable trait ratings to in-group targets than to out-group targets, consistent with intergroup bias. Simple effects tests of the Valence × Power of Target interaction within each perceiver group showed that intergroup bias in these trait ratings was significant for both high- and low-power perceivers.

Means from the histogram task. The means from the histogram task are presented in the bottom of Table 2. Overall, there was a significant valence main effect, $F(1, 9) = 71.15$, $p < .001$, such that participants in both groups were judged to have more positive traits than negative ones. Additionally, there was a marginal Valence × Target Group interaction, $F(1, 9) = 4.20$, $p = .07$, and a significant triple interaction among all three factors, $F(1, 9) = 8.27$, $p < .05$. The triple interaction suggests intergroup bias (i.e., showing a larger valence effect when rating the in-group than when rating the out-group). However, tests of the simple Target Group × Valence interaction within each perceiver group showed that in-group bias was significant only among low-power perceivers (i.e., workers), $F(1, 9) = 12.79$, $p < .01$; among high-power participants, $F(1, 9) < 1.00$.

Table 2
Mean Judgments—Study 1

Group and trait type	High-power target group	Low-power target group
	Individual ratings	
High-power perceivers		
Positive traits	6.50	5.95
Negative traits	4.46	4.40
Difference	2.04	1.55
Low-power perceivers		
Positive traits	6.21	6.34
Negative traits	3.90	3.52
Difference	2.31	2.82
	Histogram task	
High-power perceivers		
Positive traits	3.65	3.68
Negative traits	3.11	3.11
Difference	0.54	0.57
Low-power perceivers		
Positive traits	3.50	3.72
Negative traits	3.04	2.87
Difference	0.46	0.85

Coded Self-Presentations

To determine whether the high- and low-power participants behaved differently during their self-presentations, we measured from the videotapes the amount of time participants spent talking about themselves. We analyzed these presentation times as a function of target group power. There was a marginally significant difference such that self-presentations were longer for the high-power judges ($M = 35.21$ s) than for the low-power workers ($M = 29.91$ s), $F(1, 9) = 4.65$, $p = .06$. This behavioral difference suggests that more information might have been conveyed by the judges when they talked about themselves than by the workers.

To verify this, we counted the number of trait terms that participants used to describe themselves and the number of interests, hobbies, or activities they mentioned. On average, judges used 2.82 traits in describing themselves, whereas workers used 2.40. Judges mentioned 3.45 interests and activities, whereas workers mentioned 3.05. To see whether these differences were significant we conducted an analysis of variance, treating type of item (traits vs. interests) and power (judges vs. workers) as factors. This analysis revealed a marginally significant difference due to power of the person who self-described, $F(1, 9) = 4.95$, $p = .053$, consistent with the conclusion that, in spending a longer time describing themselves, judges also mentioned more distinct things about themselves.

Two raters coded the self-presentation transcripts according to the LCM (Fiedler & Semin, 1989; Maass et al., 1989; Semin & Fiedler, 1988). Coding reliability was not terribly high (average correlation for each category = .55). Nevertheless, we compared the judges with the workers for all four of the categories of the LCM, from the least abstract to the most. For the two most concrete categories, DAVs and IAVs, the two groups did not differ significantly in the frequency of language usage. However, there were marginally significant differences for the two more abstract linguistic categories, SVS and ADJs. The mean number of SVs used by the judges in describing themselves was 5.30, whereas for the workers it was 4.60, $F(1, 9) = 3.30$, $p = .10$. The mean number of ADJs used by the judges was 3.13, whereas for the workers it was 2.50, $F(1, 9) = 4.67$, $p = .059$. These analyses suggest that judges talked more about themselves, mentioned more things about themselves, and, from the LCM coding results, used more abstract, traitlike language in referring to themselves. All of this is consistent with the idea that judges conveyed more individuating information about themselves.

Discussion

Results from this first study are generally quite consistent with what we expected to find given the prior literature on the perception of group variability and how those perceptions are modified by relative power positions. Regardless of whether we looked at the ratings given individual targets, the judged similarity of targets to each other, or the standard deviation from the subjective histogram measure, low-power participants saw greater variability in

the high-power out-group than in their own group. This reversal of out-group homogeneity when perceivers are in a low-power position is consistent with previous studies, although our results are, if anything, a bit stronger than those found earlier. It is interesting that our high-power perceivers did not show large differences in how variable they perceived the two target groups to be.

A somewhat surprising result was that the SRM decomposition of variance in the individual ratings failed to reflect the differences found in our more traditional measures of perceived group variability. The reason for this is unclear, although it may be that these variance estimates provide assessments that have relatively low statistical power.

In terms of group evaluations, the data are quite consistent in suggesting that both groups tended to evaluate their own group more positively than the out-group. However, this effect was stronger in the case of low-power perceivers than in the case of high-power perceivers. And it is interesting that this bias tended to be revealed as well in self-perceptions provided by participants (i.e., low-power participants described themselves more positively than did high-power participants).

The various ways we coded the actual content of the recorded self-presentations all suggest that high-power targets may have given more individuating information about themselves than did low-power targets. They talked for a longer period of time, they described themselves with more trait terms and more interests and activities, and they referred to themselves using more abstract linguistic terms. All this suggests that they provided a basis in reality for the perceived variability difference that low-power perceivers judged there to be between the high-power target group and the low-power target group.

But these kinds of content codings really can only go part way toward examining the hypothesis that power affects the actual behavioral variability of individual group members, taking into account not only the things they say about themselves but the ways they act and individuate themselves through both their verbal and their nonverbal actions, postures, and demeanor. It is for this reason, to gain a fuller appreciation for all the ways power may lead people to individuate themselves in the eyes of others, that we turn to the second study. In this second study, observer participants who either knew the power relationship between the two groups or did not provided assessments of the two groups. These data should enable us to tease apart the mechanisms that may be responsible for the basic result of Study 1, namely, that low-power perceivers perceived more variability in the high-power target group than in their own group, whereas high-power perceivers did not show this difference.

Study 2

Method

Participants and Design

Seventy-eight participants (26 men and 52 women) took part in this study. Again, these participants were recruited for pay from psychology classes. Three to 5 participants participated in each experimental group. The participants in any group watched the videotapes from one of the experimental sessions from Study 1 and subsequently rated their impressions of the Study 1 participants. In total, 20 experimental groups were run in this study, with each group randomly assigned to watch 1 of the 10 videotaped sessions (including both workers and judges) from Study 1. In other words, there were 2 Study 2 participant groups assigned to watch each session from Study 1. Additionally, groups were randomly assigned to a knowledge condition, so that one group of Study 2 participants who watched a particular Study 1 session did so knowing the power relationship between the workers and judges in that session, whereas the other group of Study 2 participants did not know of that power relationship.

Procedure

Participants were told that the study focused on group dynamics. They were told that they would watch two different groups of people on a videotape and that their job was to form an impression of the individuals and the groups they would observe. They were told that each group worked on a task (which was described briefly) and then each group member responded to a series of questions concerning themselves, their abilities, and their interests. Further instructions depended on the knowledge condition to which the session had been randomly assigned.

In the condition in which participants knew the power relationships between the workers and judges in the videotape they would observe, participants were told,

> You will see two groups of four people, and each group worked on the same task. The four people in each group were selected based on a test they took concerning their abilities in supervising and managing others. One group, whom we will refer to as the Ws, consists of people whose skills are more suitable for completing tasks rather than for supervising others. We refer to them as the workers. The other group, referred to as the Js, consists of people who are more skilled at supervising others. We refer to them as the judges. These two groups continued to interact, with the workers completing a variety of other tasks and the judges evaluating their performance and supervising them. The main task of the judges was to evaluate the work of the workers. You will see either the workers or the judges first, and you will tell us your impressions of this first group before going on to the second group.

In the condition in which participants did not know the power relationships between the workers and judges, they were told,

> You will see two groups of four people, and each group worked on the same task. The four people in each group were selected from a pool of participants who were recruited for the study. To keep the two groups separate from each other, we called one group the Js and the other group the Ws. These groups continued to interact, completing a variety of tasks. You will see either the Js or the Ws first, and you will tell us your impressions of this first group before going on to the second group.

Prior to showing the videotapes, we had previously made sure that in none of the recordings did Study 1 participants make any mention of the power relations between the two groups.

Order of exposure to the videotapes from the two groups varied. Participants watched the first group, either the workers or the judges, observing both the training task interaction of the group and the individual self-presentations. Then they completed the dependent variable questionnaire before going on to the second group. Data from participants who reported knowing any of the participants in the groups they observed were discarded ($n = 2$).

Dependent Variables

Participants in this study completed the same dependent variables as those that Study 1 participants completed. Namely, participants rated each of the Study 1 targets on the same eight valenced traits. Two additional

traits were added to the list: "good in a supervisory role" and "good in a subordinate role." Participants then judged the similarity of targets within each of the two groups and then completed the same subjective histogram task for the larger groups of workers and judges as did Study 1 participants.

Results

We first present analyses on variables that assess the perceived variability of the two Study 1 target groups. These include the range and standard deviation of ratings of the individuals in the two groups, decompositions of the variance in these ratings according to the SRM, perceived similarity ratings of the individuals in the two target groups, and the standard deviations of the subjective histograms. Following this, we present results on mean ratings of the two groups to assess any differences in how these groups were evaluated.

As in Study 1, session from Study 1 was treated as the unit of analysis throughout. Thus, we collapsed across participants within each Study 2 group and treated target group (high- vs. low-power from Study 1) and whether participants knew of the power relationship between the two target groups as within-session factors.

Perceived Group Variability

Range of individual target ratings. The range of target ratings within the two target groups was computed for all 10 trait ratings (including the additional 2 not used in Study 1). These were then averaged within valence, and valence was included as a factor in addition to target group and participant knowledge. Results of the analysis revealed a significant main effect of valence, $F(1, 9) = 7.52$, $p = .023$, such that the range of ratings was greater for the positively valenced traits than for the negatively valenced ones. This effect, in turn, was moderated by participants' knowledge, such that it was greater among those participants who did not know of the power relationship between the two target groups than among those who did.

Of considerably more interest, there was a significant main effect of target group, $F(1, 9) = 5.23$, $p = .048$, indicating that the targets in the high-power group were judged by Study 2 observer participants to be more variable than were those in the low-power group. It is important to note that this effect of target group was not moderated by participants' knowledge of the power relationship between the two groups, $F(1, 9) = 0.39$, $p > .50$. The relevant means for these two effects are given in the top portion of Table 3. These suggest that the target group difference in perceived variability is in fact (nonsignificantly) larger in the case of participants who did not know of the power relationship between the two groups than in the case of those who did.

Table 3
Perceived Variability of Target Individuals—Study 2

Statistic and group	High-power targets	Low-power targets
Range of individual trait ratings		
Knowledge participants	3.10	2.74
No-knowledge participants	3.35	2.83
SD of individual trait ratings		
Knowledge participants	1.48	1.28
No-knowledge participants	1.57	1.33

Standard deviation of target ratings. Results for the standard deviation of the individual target ratings show results quite similar to those just reported for the range measure. Specifically, the standard deviation of individual target ratings was larger on positively valenced traits than on negatively valenced ones, $F(1, 9) = 6.78$, $p < .03$. This, in turn, was moderated by participants' knowledge, $F(1, 9) = 4.88$, $p = .055$. More important, the standard deviation of the target trait ratings was larger in the case of high-power targets than in the case of low-power targets, $F(1, 9) = 5.68$, $p < .05$. Also, the Knowledge × Target Group interaction did not approach significance, $F(1, 9) = 0.11$, $p > .70$. The relevant means, presented in the lower panel of Table 3, show once again that observer participants gave ratings that varied more across targets in the case of the high-power targets than in the case of the low-power targets, and this was equally true for observers who knew the power relationship between the groups and those who did not.

SRM variance decomposition. As in Study 1, variance in the individual target ratings was decomposed into perceiver, target, and relationship components according to the SRM using the BLOCKO program (Kenny, 1998a). Again, this decomposition was done at the level of the individual traits, and then variance component estimates were averaged across traits within valence.

The analysis of perceiver variance revealed two significant interactions, first between valence and participant's knowledge, $F(1, 9) = 5.60$, $p < .05$, and second between valence and target group, $F(1, 9) = 5.78$, $p = .04$. The first suggests that participants who did not know of the power relationship between the groups showed greater perceiver variance on negatively valenced traits than on positively valenced ones, whereas that was not true in the case of knowledgeable participants. We have no ready explanation for this effect. The second interaction suggests that on the negatively valenced traits there was more perceiver variance for the low-power group than for the high-power one, whereas on the positively valenced traits this difference was not found. To the extent that perceiver variance suggests assimilation of targets to the perceiver's habitual rating style, this suggests greater assimilation of low-power targets than of high-power ones, particularly on negatively valenced traits. This interaction was not in turn moderated by participant's knowledge, $F(1, 9) = 0.25$, $p > .60$.

There was a marginally significant target group main effect in the component of variance due to targets, $F(1, 9) = 4.31$, $p = .068$, suggesting that there was more stable target variance for the high-power targets ($M = 0.75$) than for the low-power ones ($M = 0.40$). It is important to note that this effect was not qualified by participant's knowledge, $F(1, 9) = 0.19$, $p > .60$, again suggesting that the perception of greater variability among the high-power targets was found regardless of the presence or absence of knowledge concerning their power relationship. There was also a main effect due to trait valence, $F(1, 9) = 10.40$, $p = .01$, such that there was more stable target variance on the positively valenced trait dimensions than on the negatively valenced ones.

The analysis of the relationship component of variance again revealed a significant target group main effect, $F(1, 9) = 9.96$, $p = .012$, indicating greater relationship variance in the case of the high-power targets ($M = 2.75$) than in the case of the low-power ones ($M = 2.22$). No other effects were significant.

Unlike the variance decomposition results from Study 1, then, the decomposition of the target ratings from Study 2 participants reveals results quite consistent with the range and standard deviation measures. Namely, there seems to be greater variance in target ratings of the high-power group than of the low-power group, focusing both on the target differences that are stable across perceivers and on the target differences that are idiosyncratic to perceivers. It is important to note that in no case were these target differences moderated by participants' knowledge.

Perceived similarity of the target groups. The only effect that emerged in the analysis of the similarity ratings given to the two target groups was a main effect of knowledge, $F(1, 9) = 7.30$, $p < .05$, such that observers who knew about the power difference between the two target groups reported greater similarity within both target groups than did observers who did not. It is surprising, given the results from the individual trait rating data, that the target group main effect on these similarity ratings was not significant, even though the mean similarity rating for the low-power target group was somewhat higher than that for the high-power target group.

Standard deviation from histogram task. There were no significant effects in the analysis of the standard deviation from the histogram task.

Target Group Evaluations

For purposes of examining mean ratings of the two target groups, we analyzed separately the trait ratings of the target group individuals on the eight valenced traits that were also used in Study 1 and the individual ratings on the two additional traits used only in this study, "good as a supervisor" and "good as a subordinate." We present both sets of results from the ratings of the individual targets, and then we present results from the means of the subjective histogram task.

Ratings of individual targets on Study 1 traits. The only effect that was significant in this analysis was the main effect of trait valence, $F(1, 9) = 351.80$, $p < .001$: Targets were given consistently higher ratings on the positively valenced traits than on the negatively valenced ones. It is important that this valence difference did not depend on target, $F(1, 9) = 0.97$, $p > .35$, suggesting that Study 2 participants did not evaluate the individuals in the two groups differently.

Ratings of individual targets on supervisor and subordinate traits. These ratings were analyzed as a function of target group, participant knowledge, and whether the ratings involved the "good as a supervisor" scale or the "good as subordinate" scale. It is not surprising that there was a significant Target Group × Question interaction, $F(1, 9) = 17.17$, $p < .005$, such that high-power targets were judged relatively higher on the first question than on the second, whereas low-power targets were judged higher on the second question than on the first. There was also a marginally significant triple interaction that suggests that this Target Group × Question interaction was moderated by participant knowledge, $F(1, 9) = 3.46$, $p = .09$. The relevant means are given in Table 4. It is not surprising that the perception that judges were better supervisors and that workers were better subordinates was especially true if participants knew of the power relationship between the two groups. What is more interesting is that, among the participants who did not have this knowledge, the same pattern emerged, although less strongly. Nevertheless, the simple Target Group × Question interaction was marginally significant even among these no-knowledge participants, $F(1, 9) = 3.51$, $p = .094$. Thus, it seems likely that the workers and judges displayed behaviors appropriate to their roles, and this difference in behavior was noted even by participants who were not aware of the roles to which they had been assigned.

Table 4
Mean Ratings of Targets on Supervisor and Subordinate Questions—Study 2

Group and question	High-power targets	Low-power targets
Knowledge participants		
"Good as supervisor"	5.31	4.32
"Good as subordinate"	4.42	5.42
No-knowledge participants		
"Good as supervisor"	5.18	4.89
"Good as subordinate"	4.87	5.21

Means from histogram task. There was a main effect of trait valence, $F(1, 9) = 99.57$, $p < .001$, such that the means were higher on positively valenced traits than on negatively valenced ones. Additionally, there was a target group main effect, such that the more powerful target group received higher histogram means than did the less powerful target group, $F(1, 9) = 10.52$, $p < .01$. Although this did not depend on trait valence (and, hence, it does not reflect an evaluation difference between the two target groups), it did depend on participant knowledge, $F(1, 9) = 14.38$, $p < .005$, such that high-power targets received higher histogram means than did low-power targets only if the perceiver knew of the power relationship between the two target groups.

Discussion

The most striking result from this second study is that in the ratings of the individual target group members, there was evidence to suggest that greater variability of target group members was perceived in the case of high-power targets than in the case of low-power targets. This difference emerged both from the analysis of traditional variability measures (i.e., the range and standard deviation of target ratings) and from the analysis of target and relationship variances from the SRM decomposition. It is important to note that this difference in perceived variability of the targets in the two groups did not depend on knowledge of the power relationship that existed between them.

Additionally, the analysis of the mean ratings provided to the target groups suggests that although the two different groups were seen to occupy different roles, there were no differences between the two target groups in how favorably they were evaluated either as individuals or as larger groups.

General Discussion

Group stereotypes are beliefs about the typical attributes of group members. The strength of those stereotypes derives from the extent to which those typical attributes are judged to hold true across individual members of the group. Some groups are seen as rather diverse and variable. Others are seen as considerably less

variable. It is fair to say that stereotypes about the latter are more potent than those about the former.

One determinant of the degree to which a group is seen as variable is whether one is a member of that group. Typically, in-groups are judged to be more variable than are out-groups. Yet this general result does not hold universally. Considerable research has now documented that persons who are members of low-power, low-status, or minority groups may see the high-power, high-status, or majority out-group as more diverse than their own group.

We designed this research to tease apart three different possible explanations for the differences in perceptions of in-group and out-group variability as a function of power. The first explanation, which we refer to as an explanation based on the power of the perceiver, argues that the perceiver's relative power influences his or her perception of group variability, with low-power perceivers differentiating less among in-group members and more among out-group members than do high-power perceivers. The second explanation, which we refer to as an explanation based on the perceived power of the target, argues that target groups that are known to have high power are perceived as more variable than are target groups that are known to have relatively less power. And the third explanation, articulated we think for the first time here and in Brauer (2001), is that the possession of power actually allows individual group members to act in more idiosyncratic and variable ways, and perceived variability differences between high- and low-power target groups follow from an actual or objective variability difference. We refer to this third explanation as one due to the actual power of the target.

Our research was designed to tease apart these explanations by gathering perceptions of the variability of high-power and low-power target groups not only from the individual members of those groups but also from individuals who observed them and who either knew about the power relationship between them or did not. The results we have presented seem to us quite provocative. First, we clearly found that low-power perceivers in Study 1 showed a significant reversal of out-group homogeneity, differentiating individuals in the high-power out-group more than those in the low-power in-group. This result is consistent with the moderation of out-group homogeneity previously found as a function of outcome dependency (Guinote & Fiske, 1999), status (Lorenzi-Cioldi, 1993), and majority/minority status (Simon & Brown, 1987).

According to the first explanation offered above, due to the power of the perceiver, this tendency to see more variability in the high-power group than in the low-power group should be found only among perceivers who are members of the low-power group, not among other perceivers who are not in the low-power position. But, in fact, our observer participants in Study 2 manifested this same difference, judging the individuals in the high-power target group to be more variable than those in the low-power target group.

According to the second explanation offered above, due to the perceived power of the target group, this tendency to see more variability in the high-power group than in the low-power group should only be found among participants who in fact knew that the high-power group has high-power and the low-power group has low power. But our observer participants in Study 2 who were not informed about the power relationship between the two target groups also saw more variability in the high-power target group than in the low-power target group.

Accordingly, the results from our Study 2 participants, particularly from those who did not know of the power differential between the target groups, provide compelling evidence for our third explanation—that is, that individuals who are in more powerful positions actually act and present themselves in more idiosyncratic and variable ways. Additionally, the coding of the videotapes from Study 1 supports this explanation, in that high-power participants talked longer about themselves, identified more individuating traits and interests, and used more abstract and stable linguistic terms in referring to themselves.

Previous research concentrating on the effects of power and status on individual behavior rather than on the manifestation of group variability provides further confirmation for the behavioral effects of power. A common result is that more powerful individuals talk more and engage in more social interactions than do less powerful individuals (Bales, 1953; Sorrentino & Boutillier, 1975; Stang, 1973; Starkweather, 1964). Additionally, they are judged to be more authentic and spontaneous (Maslow, 1973a) and more flexible (Patterson, 1985), and their behavioral repertoires are said to be richer (Skinner, 1995). In this vein, Keltner and colleagues (Keltner et al., 1998) reported that high-status and high-power individuals displayed more variable forms of teasing than did lower status participants, and the forms of teasing they chose to manifest tended to more frequently violate prosocial norms that seemed to constrain the teasing engaged in by lower power participants. Similarly, Hecht and LaFrance (1998) reported that high-power individuals, as opposed to lower power ones, were more likely to vary in whether they smiled when engaging in social interactions, and their smiling was more highly related to their own statements about their internal affect. These latter authors interpreted their results to suggest that having greater power "gives one the prerogative to act as one chooses; therefore, one is more likely to vary one's behaviors" (p. 1,339).

Thus, there is in fact other empirical work that shows at the interpersonal level that more powerful and higher status individuals show greater variability in their verbal and nonverbal behaviors. Nearly all of this work, however, has operationalized power and status as very stable dispositional properties of individuals, focusing on how the behavior of chronically powerful individuals differs from that of individuals who are not chronically in such positions. What is compelling about the present work is that we have found evidence for actual differences in target variability in a very limited group interaction setting, in which power roles were manipulated in a fashion that was time limited and without major long-term consequences. Yet even this sort of weak and transitory power differential induces a difference in variability across targets sufficient that observer participants can detect it, even when they do not know about the power difference.

Across our two studies there were four groups of participants: high-power and low-power ones in Study 1; observers with knowledge and observers without knowledge in Study 2. Of these four, there was only one group who did not perceive the high-power targets to be more variable than the low-power targets: those who themselves were members of the high-power group. It is somewhat surprising that they failed to show any difference in the perceived variability of the two target groups. One might reasonably argue that the low-power perceivers are in fact more accurate judges of group variability than are the high-power perceivers, because they manifest the same variability differences between high- and low-

power target groups as do our uninformed observer participants from Study 2. The failure of the high-power participants to report these differences suggests that there is also evidence in our data for the first explanation that we advanced, namely, that the perceiver's power influences his or her perception of target group variability. In this case, being in a high-power position mistakenly caused perceivers to ignore the actual variability differences in the two groups that more objective observers noted.

In this regard, it is important to note that we do not regard our three explanations as mutually exclusive. Although our goal was to structure an experimental situation to allow evidence for the third explanation, we have evidence for the first explanation as well. And we believe it likely that, in other situations, the second explanation merits consideration. In other words, we believe that social power influences the perception of group variability in multifaceted ways.

Although our focus has been on perceived group variability, our data also are informative about the other well-studied effect in the group perception literature, namely, the tendency to evaluate in-groups more positively than out-groups. In this regard, it is important to note that all participants evaluated the target individuals positively. And for observer participants from Study 2, regardless of whether they knew the power relationship between the two target groups, this tendency to evaluate the individuals positively did not vary between the high- and low-power target groups. In other words, these "objective" observers saw the two groups in an equally positive light. Turning to the Study 1 participants, on the other hand, the low-power perceivers manifested a tendency to evaluate themselves as individuals and their group more positively than they evaluated out-group members. In other words, these low-power participants were biased in their evaluative assessment by their power position: They showed differential evaluations of the low-power and high-power groups, in the direction of in-group favoristism, whereas observer participants did not. It is interesting that the high-power Study 1 participants agreed in this case with Study 2 observers: They also evaluated both their own group and the low-power out-group equally favorably.

This power difference in the manifestation of in-group bias, such that low-power participants showed differential evaluations of in-group and out-group members and high-power participants did not, is contrary to other research that has shown that high-power individuals discriminate more between in-groups and out-groups in reward allocations (Ng, 1982; Sachdev & Bourhis, 1991). However, in these settings discriminations involved the use of rewards, which in fact were the basis of the power differential. In other domains, where status differences have been examined and participants are asked to evaluate in-groups and out-groups on attribute dimensions irrelevant to the status difference, low-status groups have been found to discriminate more, similar to our results (Brauer, 2001; Mullen, Brown, & Smith, 1992).

We are thus left with the intriguing possibility that perceivers in low-power positions may relatively accurately pick up actual variability differences between groups that ensue from power relationships. However, their power position may lead to inaccuracies in evaluations of groups and their members, consistent with in-group bias. On the other hand, perceivers in positions of high power are misled in the perceptions of group variability, but, at least in our data, they were more accurate in their relative evaluative judgments.

Researchers who have been interested in the consequences of control deprivation on perception (Pittman, 1993; Strube & Yost, 1993) have noted that individuals deal with this situation simultaneously in two different ways: (a) They attempt to assert control by increased levels of cognitive activity and greater information seeking, and (b) they engage in ego-protecting activities. In terms of group perception and behavior, our results can be seen as consistent with these two outcomes. Our low-power participants were relatively accurate in their appraisals of the variability of their in-group and out-group. In this sense, they were more attentive to the environment than were our high-power participants. At the same time, they engaged in self-enhancing perceptions, judging their own group relatively more positively than the out-group.

That power differentials between groups affect not only the perception of those groups but also the actual behavioral variability manifested by those groups has potentially important social implications for the nature of intergroup relations and patterns of stereotyping and prejudice in our society. If the lack of social power constrains the behavioral variability manifested by low-power groups, then not only are the members of such groups negatively impacted by the typically negative stereotypes that society holds about low-power and minority groups, but also individuals who are members of such groups are inhibited in the ways they can act, in the extent to which they can authentically present themselves as individuals. Although they may be better judges of the behavioral variability manifested by others, in some sense they are constrained not only by the typically negative stereotypes that society holds about them but also by the actual low-status, low-power situation in which they find themselves.

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