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Group Entitativity and Group Perception: Associations Between Physical Features and Psychological Judgment

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Two experiments tested whether the perceived entitativity of groups (i.e., cohesiveness) influences judgments about those groups, in terms of both their observable physical properties and underlying psychological traits. Entitativity was manipulated with groups whose members were similar or dissimilar in skin color. Experiment 1 demonstrated that beliefs about entitativity elicited more accurate judgments of skin color for entitative than nonentitative social groups, although memory for individual members of entitative groups was relatively impoverished. Experiment 2 revealed that entitative groups were viewed as not only physically similar but also psychologically homogeneous and elicited strong negative trait and behavioral judgments. Together, these findings suggest that physical properties (e.g., similarity) can create perceptions of psychological "groupness" that have important consequences for group perception.

Among the alien groups created by the TV series *Star Trek* and its successors, the most innovative invention for students of social psychology is the Borg, a species in which "groupness" is paramount and individual members are interchangeable. In fact, the Borg do not have a concept of individual mind or self, with thoughts, goals, and action represented only at the collective level. The Borg are so caricatured that no viewer, however unimaginative, can miss the lesson that there are horrific consequences to losing individual identity in the service of group cohesion. This caricature, however, may not be far from the truth in describing ordinary people's perceptions of groups of humans. The degree to which social groups are perceived to be unified entities may have important consequences for the accuracy with which they are perceived and for the psychological properties ascribed to them.

The question of what constitutes a group, the physical and psychological characteristics that produce "groupness," and beliefs and attitudes of perceivers that induce particular group perceptions were of central interest to social psychologists like Lewin, Allport, Campbell, and Tajfel. These pioneers were deeply interested in group perception and its consequences for intergroup phenomena such as stereotyping and prejudice. Despite the early emphasis on group perception, social psychological research did not focus for long on this most basic unit of social perception—the social group. Numerous studies have examined the extent to which prior beliefs influence judgments of, and behavior toward, individual members of groups, whereas relatively few have examined how beliefs influence judgments of groups themselves, especially as a function of their perceived groupness (see Hamilton & Sherman, 1996, for a review).

Recent years have witnessed renewed interest in group perception, cognition, and intergroup behavior (Abelson, Dasgupta, Park, & Banaji, 1998; Brewer & Harasty, 1996; Hamilton & Sherman, 1996; Sedikides, Schopler, & Insko, 1998). The reemergence of research on groups is present in a recent volume edited by Sedikides, Schopler, and Insko (1998) that unites two, often artificially segregated, research traditions—intergroup relations and social cognition—and emphasizes the interplay between mental representations of groups and social behavior in intergroup settings (see Hackman & Banaji, 1999). This book, together with other recent investigations, reveals that groups are often perceived to be distinct social agents compared with their individual constituents (Abelson et al., 1998; Hoyle, Pinkley, & Insko, 1989; Insko & Schopler, 1998; McConnell, Sherman, & Hamilton, 1994; Pemberton, Insko, & Schopler, 1996) and that cohesive groups in particular are distinct from aggregates of individuals (McConnell et al., 1994; Wilder, 1986; Yzerbyt, Rogier, & Fiske, 1998). The recent revival of research on group perception suggests that social-psychological understanding of intergroup phenomena such as stereotyping and prejudice can benefit from a closer examination of group representations, especially of target groups that are perceived to be cohesive entities.

Physical Similarity Promotes Beliefs About Group Entitativity

Several factors may determine how cohesive a group is perceived to be, chief amongst them being the physical similarity of

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group members. Physical similarity has long been identified as an important perceptual cue by Gestalt psychologists, and Campbell (1958) extended its application to group perception. Campbell identified similarity as a salient perceptual feature that transforms an aggregate of individuals into a cohesive entity by evoking the belief that similar group members also share underlying psychological characteristics. Campbell coined the term "entitativity" to refer to the psychological cohesiveness attributed to social groups in the presence of salient perceptual cues (e.g., physical similarity, spatial proximity). Although the theoretical contribution of Campbell's analysis is unquestionable, it does not provide evidence to support the view that perceptual properties elicit beliefs about entitativity and influence judgments of groups.

A goal of the present research was to empirically test the extent to which perceptions of entitativity influence beliefs, evaluations, and memory of social groups. In this research, perceptual entitativity was manipulated by varying a single physical attribute, namely the skin color of target groups (i.e., groups were created such that members were either relatively similar or dissimilar to each other in skin color). By isolating and examining the impact of a single component of entitativity (physical similarity), we sought to examine whether social perceptions of groups are substantially influenced by minimal entitativity cues. Skin color was chosen as the physical attribute to be manipulated because it is a key feature in the psychological construction of race and ethnicity. Skin color influences not only the racial label attached to groups (e.g., whether a group is perceived to be Black, White, or Latino), but also the psychological characteristics attributed to group members (e.g., whether an individual is judged to be aggressive or friendly; Duncan, 1976; Sagar & Schofield, 1980). By creating target groups that varied in skin color (thus resembling known racial groups), the present research sought to investigate whether perceptual entitativity promotes stereotypic judgments on physical and psychological attribute dimensions.

The Influence of Group Entitativity on Judgments of Physical Appearance

Typical social groups, especially ones that are invariant and enduring, are usually believed to be entitative in that they are expected to share similar group-relevant attributes (Campbell, 1958; Hamilton, 1998). Some researchers have argued that shared, invariant attributes are especially associated with groups viewed as biological categories or natural kinds (Rothbart & Taylor, 1992; Yzerbyt, Rocher, & Schadron, 1997). For instance, individuals who share membership in a racial group are expected to possess similar race-related characteristics (e.g., dark skin color).[1] We hypothesized that expectations of group entitativity may serve as a heuristic as perceivers form impressions producing group judgments that are belief consistent. Under this hypothesis, a group that is perceptually entitative (i.e., strongly sharing a property such as skin color) is likely to be judged more accurately, in terms of perceived group variability, than a group that is less entitative (i.e., weakly sharing a property such as skin color).

Although we predicted group judgments to be more accurate for perceptually entitative than nonentitative groups, we predicted memory for individual members to reveal an opposite pattern of data. Specifically, individuals in nonentitative groups are more likely to be individuated than those in entitative groups. As a result, members of nonentitative groups ought to be better remembered than their counterparts in entitative groups.

Existing research provides support for this prediction (Brewer & Harasty, 1996; Brewer, Weber, & Carini, 1995; Srull, 1981; Srull, Lichtenstein, & Rothbart, 1985, Experiment 7). For instance, Brewer et al. (1995) demonstrated that when social groups were perceived to be highly entitative (e.g., minority groups), observers' memory for individual differences within those groups was significantly diminished. Specifically, the data revealed more intragroup recognition errors for entitative (minority) than nonentitative (majority) groups on a surprise memory test. More generally, Srull and his colleagues (Srull et al., 1985; Srull & Wyer, 1989) have shown that when groups are perceived to be coherent and meaningful, group judgments are likely to be formed in an on-line rather than memory-based manner. As a result, judgments of coherent target groups and memory for their individual members tend to be uncorrelated. Taken together, these findings are consistent with our hypothesis that memory and judgment of social groups ought to reveal different patterns of data. Specifically, memory for individual members is likely to be less accurate for entitative than nonentitative groups; however, global judgments are likely to be more accurate for entitative than nonentitative groups.

Experiment 1 was conducted to examine the ways in which group entitativity influences the accuracy with which social groups' physical attributes are recalled and judged. To that end, the experiment assessed perceivers' accuracy in judging group skin color and differentiating individual members within groups on that dimension.

Experiment 1

Judgments of Social Groups

In one phase of the experiment, participants were exposed to a group of racially ambiguous faces that was either perceptually entitative or nonentitative in skin color. Both groups possessed the same average skin color and were relatively dark-complexioned overall. Previous research on group perception has demonstrated that biases in group judgments are likely to occur when target groups are seen in the context of other groups rather than in isolation (see, e.g., Krueger, Rothbart, & Sriram, 1989; Tajfel & Wilkes, 1963). On the basis of these findings, we created a constant light-complexioned group to provide an intergroup context for this study—this group did not vary in entitativity across conditions. All participants viewed two social groups: a constant light group and a dark group that was either entitative or nonentitative. Participants' task was to recall the overall skin color of each group and to estimate within-group color variability and average group color. The influence of group entitativity on perceptions of skin color was examined by assessing participants'

[1] When such a belief is violated, it makes headline news, as in the recent discovery that among a Bantu-speaking African people, Lemba men carry DNA sequences in their male chromosome that map onto a distinctive genetic signature of the Cohanim, a group of Ashkenazi Jews assumed to be descendants of Aaron (Wade, 1999). Because groups that are starkly differentiated in skin color and features are expected to be genetically distinct, such a discovery evokes surprise.

ability to recall and judge the overall skin color of entitative versus nonentitative groups.

To ensure that biases in skin-color judgments were due to beliefs about social groups and not simply subjects' inability to make complex color judgments, we compared skin-color judgments of social groups with equivalent color judgments of control nonsocial groups. The latter groups were comprised of colored rectangles created by reorganizing pixels in individual faces. Thus, both social and nonsocial groups used in this experiment represented the same distribution of colors.

We expected color judgments of social groups to reveal a pattern of data quite different from that of nonsocial groups because perceivers have a well-developed belief that skin color is a shared feature of social (racial) groups but have no comparable belief about color similarity within nonsocial groups. For social groups, beliefs about group similarity ought to reduce the accuracy with which skin color is judged for the nonentitative compared with the entitative social group. However, for nonsocial groups, two outcomes are possible: On the one hand, because perceivers do not expect meaningless nonsocial groups to possess shared features, judgments of these groups may be equally accurate across entitativity conditions. On the other hand, it is also conceivable that perceivers may expect meaningless nonsocial groups to be particularly heterogeneous in color because they appear to consist of a random collection of exemplars. In this case, judgments of nonsocial groups may be more accurate in the nonentitative (or expectancy-congruent) condition than in the entitative (or expectancy-incongruent) condition. In either case, differential beliefs about social versus nonsocial groups ought to produce predictable differences in social and nonsocial judgments.

Memory for Individual Members of Social Groups

To determine whether judgment accuracy for entitative versus nonentitative social groups was produced by differences in perceivers' ability to remember group members, we also administered a surprise recognition memory test. The memory test was used only for social groups, not for nonsocial groups, because we expected perceivers to have poor overall ability to remember and discriminate meaningless nonsocial exemplars.

We predicted that individual members of social groups would be better remembered when they belonged to the nonentitative than the entitative group even though faces in both groups were identical except for skin color. If the predicted memory and group judgment findings are obtained, together they would suggest that even though individuals in the nonentitative social group were accurately encoded and remembered, they were not adequately assimilated into overall skin-color judgments because group judgments were constrained by entitativity beliefs.

Two data collections were conducted. Presentation order of social and nonsocial targets was not counterbalanced in the first data collection. To rule out presentation order as a potential confound, we conducted a second data collection after counterbalancing target group presentation. Both samples revealed the same pattern of data; thus, the two data sets are combined for presentation.

Materials

Development of Social Groups

Three social groups were created using facial stimuli: (a) a light-complexioned control group, (b) a dark-complexioned entitative group, and (c) a dark-complexioned nonentitative group. The two dark-complexioned groups were characterized by the same average skin color. Following Campbell (1958), entitativity was manipulated by varying physical similarity: The entitative group consisted of members who were more similar to each other in skin color, and the nonentitative group consisted of members who were less similar to each other in skin color. In other words, the range and standard deviation of color in the entitative group were designed to be substantially lower than those in the nonentitative group (see Figure 1). Importantly, individual faces in both these groups were identical in every way except for skin color. Because perception of skin color is likely to be influenced by the perceived race of target faces, racially ambiguous composite faces were created to represent each group.

Creation of race-ambiguous faces (morphing). To create groups with specified mean skin color and systematic color variance around the mean, we morphed a large number of human faces from which a final set was later selected. Pictures of 30 male faces (10 African American, 10 Asian American, 10 European American) constituted the initial pool of faces. Fifty-six race-ambiguous faces were created by combining (morphing) faces of different races (e.g., African American + European American, Asian American + European American, African American + Asian American + European American) using morphing software (Elastic Reality; 1995).

Manipulation of skin color. Skin color was manipulated to create the entitative, nonentitative, and constant groups using a two-step process. First, an 11-point skin-color scale was created and anchored at each scale point with a colored swatch such that the scale captured a range of skin colors varying from very pale to very dark.[2] The facial color of each morphed face was manually adjusted to make it similar to a specific colored swatch on the scale using graphics software (Adobe Photoshop; 1992). Thirty-five of the 56 morphed faces were duplicated and the facial color of each duplicate adjusted to match a different swatch on the scale. The process of morphing and color-adjusting yielded a total of 91 race-ambiguous faces that varied in skin color. The second step in the creation of target groups involved pretesting the pool of 91 faces to obtain stable color ratings for each face.

Pretesting skin color. A sorting procedure was employed to pretest the color of individual faces.[3] Twenty pretest participants (12 female, 8 male) were shown the final pool of 91 faces and the 11-point color scale on a computer screen. Pretest participants' task was to judge the color of each face by matching it to the most representative colored swatch on the scale. Pretest participants were instructed to sort the faces into piles on the computer desktop such that each pile represented one color on the scale. From these data, we calculated (a) the mean color rating associated with each face and (b) the standard deviation of ratings around the mean for each target face.

Pretest data were used to create three target groups of 25 faces each: a dark-complexioned entitative group that ranged in skin color from 5 to 9 on the 11-point scale (mean = 7), a dark-complexioned nonentitative group that ranged in color from 3 to 11 (mean = 7), and a light-complexioned group that ranged in skin color from 1 to 7 (mean = 4). In selecting facial stimuli from the initial pool of 91 faces, the following restrictions were

[2] Color pictures of the skin-color scale and all other stimuli may be obtained from Nilanjana Dasgupta.

[3] Pretest ratings of facial color were obtained because, to the best of our knowledge, no available software can calculate the objective average of all colors present in a target face and systematically lighten or darken the face by a specified amount using the average color as baseline.

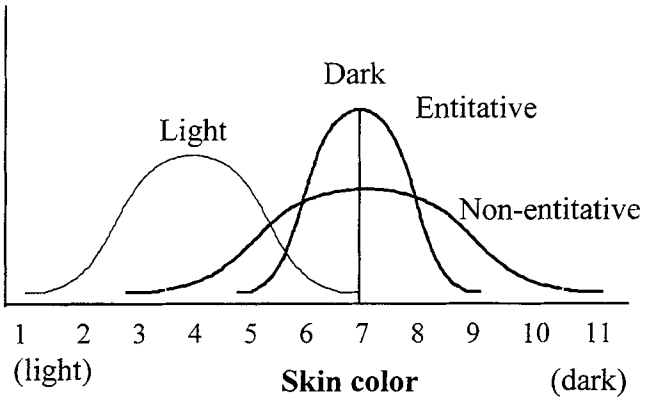

Figure 1. Skin color distributions of light- and dark-complexioned target groups. The 11-point color scale shown in Figure 1 was used by participants to make skin-color judgments. In the actual experiment, however, each scale-point was anchored by a colored swatch. These swatches, collectively ranging in skin color from very pale to very dark, are not shown in Figure 1.

observed: (a) Each face selected for the entitative group had to be identical in facial features to a face in the nonentitative group, although face pairs were often different in skin color; (b) all faces in the constant light-complexioned group were different from those in entitative and nonentitative groups; and (c) target faces were selected only when there was high agreement among pretest subjects (average skin-color ratings for all selected faces were within −.3 to .3 of a scale point with standard deviations of less than 1.5).

Development of Nonsocial Groups

Entitative and nonentitative groups of rectangles were created to be identical in color to the groups of faces. This was done by subjecting each face in the entitative and nonentitative groups to a series of transformations: (a) Hair was masked with the background white color, (b) color pixels in each face were reorganized (a procedure called *pixellation*), (c) reorganized pixels were ordered into a rectangle, and (d) each rectangle was given a partial black border to make the nonsocial stimuli comparable to the faces (i.e., the partial black borders were comparable to dark hair). These transformations resulted in the creation of two nonsocial groups of rectangles: a perceptually entitative and a nonentitative group in which each nonsocial exemplar was identical in color to a particular face in a social group. The same procedure was used to create a constant light-colored nonsocial group.

Participants

Participants were 96 undergraduate students (36 male and 60 female) enrolled in introductory psychology classes, who participated for partial course credit. Participants completed the experiment individually in randomly assigned experimental rooms each equipped with a Power Macintosh 7100.

Procedure

Practice

Participants were informed that they were participating in a study investigating "how people perceive different groups of objects." The first phase of the experiment was designed to familiarize participants with the experimental procedure and dependent measures. In this phase, participants were exposed to two groups of circles representing multiple shades of blue. Individual exemplars from these groups were presented one at a time in random order on a computer screen for 2 s each. An accompanying label indicated the group to which each exemplar belonged (e.g., "Group X" or "Group Y"). Target groups were presented twice to allow participants to form a clear impression of each group.[4]

Dependent measures. After exposure to the two groups, participants were shown an 11-point scale on the screen that ranged from light blue (1) to dark blue (11). Each scale point was anchored by a colored swatch. Participants judged the average color of each group and the variability of colors within the group. Judgments of average color were obtained by asking participants to circle one color swatch on a paper-and-pencil questionnaire that corresponded to the average or typical color of the target group. Judgments of group variability were obtained by instructing participants to estimate the number of exemplars they had seen that corresponded to each swatch on the scale. For example, if participants recalled having seen four circles with Color 1, they were instructed to write the number 4 above Color 1 on the questionnaire. If they also remembered having seen five faces with Color 2, they were instructed to write the number 5 above Color 2 on the questionnaire. They repeated the same procedure for all 11 swatches on the scale. Instructions reminded participants that they had seen 25 exemplars in each group and that their responses for each group should add up to 25. As a result of this procedure, participants produced a distribution that represented their assessment of each target group's color variability. These tasks were modeled after dependent measures used by previous researchers (e.g., Linville, Fischer, & Salovey, 1989; Park & Judd, 1990).

Exposure to Social Groups

Once the practice phase was over, the procedure described above was repeated, except that this time participants were exposed to two groups of faces (instead of blue circles).[5] They all saw a constant light-complexioned group and either a perceptually entitative or nonentitative version of a dark-complexioned group. Faces in both versions of the dark group (entitative and nonentitative) were identical in physical features but different in skin color. The nonentitative group represented a more diverse range of skin color than did the entitative group. Dependent measures administered in this experimental phase were similar to those used in the practice task—participants estimated the average color and variability of colors for each target group.

An additional recognition memory test was also administered after a 5-min break. In this task, participants were exposed to previously seen (i.e., "old") faces from the dark-complexioned group together with an equal number of previously unseen (i.e., "new") faces. Participants' task was to correctly identify members of the dark-complexioned group. The memory task was used for social groups only.

Exposure to Nonsocial Groups

In a final experimental phase, participants were exposed to two nonsocial groups comprised of colored rectangles: a constant light-colored group and a dark-colored group that was either perceptually entitative or nonentitative. After viewing the groups, participants were instructed to estimate

[4] All our experiments used computerized displays programmed with Experimental Control Language for the Macintosh developed by Michael J. Tarr.

[5] In the first data collection for this study (N = 40), social groups were always seen and judged after nonsocial groups. In a second data collection (N = 56), presentation order of social and nonsocial groups was counterbalanced. Presentation order did not influence the pattern of data.

the average color and variability of colors within each target group using the same measures described above. The memory task was not used for the nonsocial groups because we had no reason to expect that participants would be able to remember meaningless nonsocial exemplars.

Results

The design of this study was a 2 (group entitativity: entitative vs. nonentitative) × 2 (type of group: nonsocial vs. social) mixed factorial where the first factor was varied between participants and the second varied within participants. One participant was dropped from the analyses because of incomplete data.

Relative Accuracy of Color Judgments

Two measures were used to assess the relative accuracy of group judgments. The first measure assessed the degree of color variability participants perceived within each type of group by calculating standard deviations for participant-generated color distributions. The second measure estimated the probability that participants would be able to distinguish between any two randomly chosen exemplars from a target group by calculating the perceived differentiation (Pd) statistic for participant-generated distributions. The Pd measure, developed by Linville et al. (1989), captures the extent to which perceivers can differentiate individuals within a group. Because the perceived variability statistic (i.e., standard deviation) is sensitive to extreme exemplars, it may become inflated if subjects have especially good memory for the extreme light and dark exemplars in a target group (which is more likely to occur for the nonentitative group that contains more extreme exemplars). By contrast with the standard deviation statistic, the Pd statistic is not sensitive to extreme exemplars but rather measures perceivers' ability to distinguish group exemplars regardless of extremity. Both of these statistics were used in this study to determine whether converging evidence can be obtained for the relative accuracy of group judgments.

Group variability judgments. The relative accuracy of perceived group variability was calculated using color distributions participants had generated for each target group and the actual or manipulated distribution for the same group. First, perceived group variability was determined by calculating standard deviations for participant-generated color distributions. Thus, for each participant, two standard deviation scores were derived on the basis of judgments of social (faces) and nonsocial (rectangles) groups. Next, manipulated group variability (also in the form of standard deviation units) was subtracted from perceived group variability. These difference scores represented relative inaccuracy of group judgments (i.e., scores closer to zero indicated greater accuracy, and scores deviating from zero indicated less accuracy). For clarity of presentation, we converted relative inaccuracy estimates into relative accuracy estimates by subtracting the absolute value of each difference score from 1.00. This conversion resulted in an accuracy scale ranging from 0 to 1 in which lower scores represent less accurate group judgments and higher scores represent more accurate group judgments.

Using the relative accuracy scores, we first compared color judgments of social and nonsocial groups. The primary reason for this comparison was to assess whether beliefs about group entitativity predictably biased judgments of social groups after controlling for general biases in color perception that should affect both types of groups. Specifically, for social groups, skin-color judgments were predicted to be more accurate in the perceptually entitative than nonentitative condition, which, if obtained, would suggest that judgments of social groups were differentially constrained by entitativity beliefs. In contrast, for nonsocial groups, two competing predictions were proposed because: On the one hand, nonsocial judgments were unconstrained by entitativity beliefs, they might be equally accurate across entitativity conditions. On the other hand, because nonsocial groups were randomly constructed categories of exemplars, they might be viewed as particularly heterogeneous in color, and as such, may produce more accurate color judgments in the nonentitative than entitative condition.

The difference between judgments of social versus nonsocial groups was predicted to emerge as a two-way interaction effect between type of group (social/nonsocial) and entitativity condition (entitative/nonentitative). As illustrated in Figure 2, results revealed a significant two-way interaction showing that skin-color judgments of social groups were more accurate in the entitative than nonentitative condition whereas color judgments of nonsocial groups did not vary significantly across conditions, $F(1, 93) = 14.94$, $p = .0002$.

Simple effects confirmed that for social groups, judgments of skin color were significantly more accurate for the belief-congruent entitative group than for the belief-incongruent nonentitative group, $F(1, 94) = 13.04$, $p = .0005$.[6] Specifically, participants tended to underestimate color variability for the nonentitative rather than for the entitative social group. A similar comparison of nonsocial groups demonstrated that judgments of the entitative versus nonentitative groups were not statistically different, $F(1, 94) = 1.96$, $p = .17$, suggesting that nonsocial judgments were relatively unconstrained by entitativity beliefs.

Finally, simple effects were computed to compare social versus nonsocial groups within entitativity conditions. The data showed that in the nonentitative condition, the social group was judged less accurately than its nonsocial equivalent, $F(1, 46) = 5.43$, $p = .02$, whereas in the entitative condition, the social group was judged more accurately than its nonsocial counterpart, $F(1, 47) = 9.65$, $p = .003$.

Perceived group differentiation. For each type of target group (i.e., social and nonsocial, entitative and nonentitative), a Pd statistic was calculated using participant-generated color distributions. The formula used for the calculation of Pd was obtained

[6] As a manipulation check, one-way analyses of variance were also conducted using perceived variability estimates to ensure that participants perceived the entitative groups to be less variable in color than the nonentitative groups. As expected, these analyses showed that for social groups, the entitative target was judged to be less variable than the nonentitative target (perceived variability estimates = 1.45 and 1.72, respectively); $F(1, 94) = 11.50$, $p = .001$. Similarly, for nonsocial groups, the entitative target was judged to be less variable than its nonentitative counterpart (perceived variability estimates = 1.71 and 1.98, respectively); $F(1, 93) = 10.08$, $p = .002$.

Although variability judgments showed evidence of bias in the nonentitative condition, judgments of average color for both social groups were remarkably accurate (means = 6.98 and 6.96, respectively; manipulated group mean = 7.00).

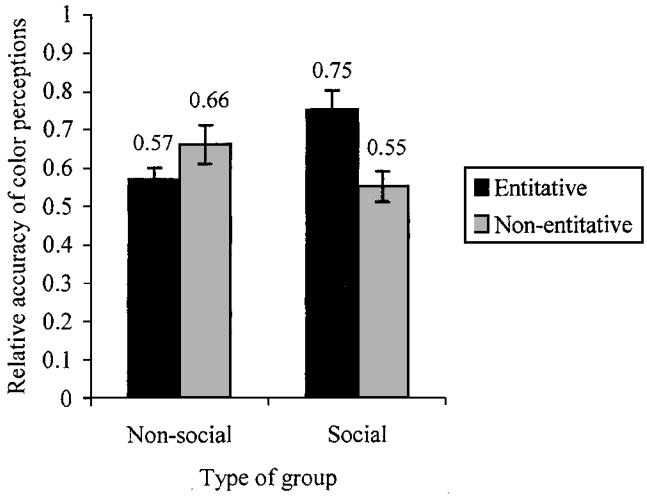

Figure 2. Relative accuracy of group perceptions: Comparing variability judgments of entitative versus nonentitative social and nonsocial groups. In Figure 2, the accuracy scale ranged from 0 to 1 with higher scores indicating greater accuracy of color judgments.

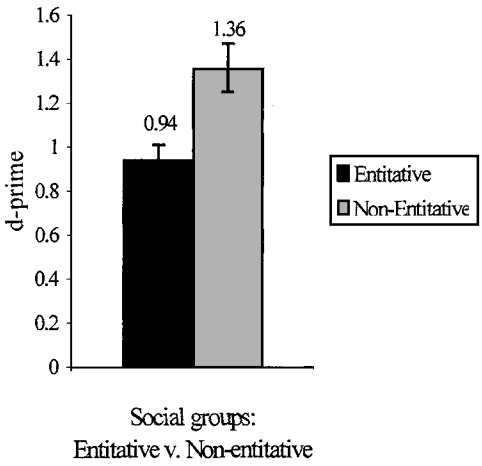

Figure 3. Relative accuracy of recognition memory: Comparing individual recognition for entitative versus nonentitative social groups.

from Linville et al. (1989). For each participant, two Pd scores were derived based on judgments of social and nonsocial groups. Next, the manipulated Pd score was subtracted from the subjective Pd score. These difference scores represented the relative inaccuracy of participants' perceived differentiation scores (i.e., scores closer to zero indicated greater accuracy, and scores deviating from zero indicated less accuracy). For clarity of presentation, relative inaccuracy estimates were converted into relative accuracy estimates by subtracting the absolute value of each difference score from 1.00. This conversion resulted in an accuracy scale ranging from 0 to 1 in which lower scores represent less accurate differentiation judgments and higher scores represent more accurate differentiation judgments.

A two-way analysis of variance (ANOVA) was conducted using relative accuracy of Pd estimates as the dependent measure. Results revealed a significant two-way interaction between type of group (social/nonsocial) and entitativity condition (entitative/nonentitative) indicating that participants were significantly more accurate in their Pd estimates for the entitative than nonentitative social group (mean accuracy = .99 and .93, respectively), whereas Pd estimates for the two nonsocial groups were no different (mean accuracy = .97 and .98, respectively), $F(1, 93) = 8.17$, $p = .005$.

Thus, both the perceived variability measure and the perceived differentiation measure provided converging evidence that skin-color judgments of social groups were more accurate when the target group conformed to perceivers' prior beliefs (i.e., entitative group) than when it did not (i.e., nonentitative group). However, color judgments of nonsocial groups were not perturbed by entitativity.

Recognition Memory for Individual Members

Although group judgments were predicted to be more accurate for perceptually entitative than nonentitative social groups, recognition of individual members was expected to reveal an opposite pattern of data. Specifically, individuals in the nonentitative group were predicted to be more salient and better recognized than those in the entitative group. Confirming this prediction, results revealed superior recognition of individual members in the nonentitative than entitative group, even though faces in both groups were identical in facial features (correct responses = 76% and 68%, respectively), $F(1, 90) = 7.95$, $p = .006$.[7]

Recognition memory for individual faces was further analyzed to obtain estimates of sensitivity and beta, the two components of signal detection (Green & Swets, 1966). Sensitivity to the signal (i.e., the ability to differentiate old from new faces) was measured by d-prime (d′) and the subjective criterion (i.e., the self-imposed threshold applied to judgments of familiarity) was measured by beta (β).

A one-way ANOVA examining sensitivity to individual differences within target groups (d′) revealed greater sensitivity to individual faces in the perceptually nonentitative than entitative group (see Figure 3; d′s = 1.36 and .94 respectively), $F(1, 90) = 10.82$, $p = .001$. In other words, familiar faces were more accurately differentiated from unfamiliar ones in the nonentitative than entitative group. However, there was no difference in the strictness of the subjective criterion (β) used to make familiarity judgments in the two groups, $F < 1$.

Taken together, the individual and group data suggest that although individual members within the nonentitative group were encoded quite well, judgments of the group as a whole were still constrained by perceived group entitativity.

Discussion

Perceived Entitativity Influences Group Judgments of Skin Color

Experiment 1 examined the influence of entitativity on perceptions of physical appearance. We expected that beliefs about entitativity would influence both group judgments of skin color

[7] Five participants were dropped from this analysis because they failed to complete the task.

and sensitivity to individual differences within target groups. As predicted, Experiment 1 showed that judgments of skin color were more accurate for the entitative than nonentitative social group, suggesting that prior beliefs about within-group similarity produce systematic shifts in group perceptions of physical characteristics.

An alternative explanation suggests that the appearance of greater accuracy in judgments of entitative compared with nonentitative groups may not be due to the operation of preexisting beliefs. Rather, participants may have made their judgment by using a narrow segment of the color scale to simplify a relatively complex task. Because exemplars in the entitative group were created to be similar in skin color, judgments within a narrow color range could have inadvertently produced more accurate group judgments even in the absence of better memory in the entitative group as a whole. However, this alternative seems unlikely for two reasons. First, if participants had used a narrow segment of the color scale to simplify the judgment task, they would have been likely to use the same strategy for the individual memory task as well. Identification of faces within a narrow color range would have produced better memory for individual members in the entitative than nonentitative group because a large proportion of false-alarm-inducing "new" faces were extremely dark or light and, as such, were situated outside a narrow color range. The obtained memory finding, showing less memory accuracy for the entitative group, is contrary to the alternative explanation. Second, the data for nonsocial groups also fail to support the alternative explanation. Specifically, the use of a restricted segment of the color scale to simplify task performance would have produced similar color judgments for social and nonsocial groups. However, the obtained data patterns for the two types of groups did not resemble one another: Color judgments of the social group were more accurate in the entitative condition, whereas analogous judgments of the nonsocial group were similar across entitativity conditions. This finding not only refutes the alternative argument but also supports the idea that preexisting beliefs about group entitativity shaped perceptions of social but not nonsocial groups.

Data from Experiment 1 are also conceptually consistent with previous research by Rothbart, Krueger, and colleagues, who have shown that the accuracy of group judgments is influenced by the goodness of fit between preexisting beliefs about groups and new information about group members. Group judgments are likely to be more accurate when new information confirms prior beliefs but less accurate when it disconfirms those beliefs (Krueger & Rothbart, 1990; Krueger, Rothbart, & Sriram, 1989; Rothbart, Evans, & Fulero, 1979; Rothbart & Taylor, 1992). Moreover, other research indicates that perceivers find it more difficult to form global impressions of heterogeneous (i.e., nonentitative) social groups than of homogeneous (i.e., entitative) social groups (Lambert, Barton, Lickel, & Wells, 1998). Together, the present and past findings suggest that because nonentitative social groups do not fit beliefs about groupness, impression formation is more difficult, promoting reliance on prior beliefs and increasing the likelihood of biased judgments.

Perceived Entitativity Influences Recognition of Individual Members

Because entitative groups are viewed as typical, perceivers probably pay less attention to individual differences within such groups, resulting in poor memory for individual faces. In comparison, because nonentitative social groups are perceived to be relatively atypical, perceivers may pay more attention to individual differences among group members, resulting in better memory for individual faces. As predicted, results showed that recognition of group members was substantially better in the nonentitative than entitative condition, although faces in both conditions were identical on every dimension except for skin color. Together, the memory and group judgment findings suggest that even though individual exemplars in the nonentitative group were clearly encoded, these exemplars were not equally assimilated into the group judgment.

The obtained disjunction between group judgments and individual memory is consistent with Hastie and Park's (1986) theoretical framework that identifies the conditions under which strong associations between memory and judgment should and should not obtain. Their research indicates that the memory–judgment association ought to be weakest when judgments are dependent on the immediate assimilation of incoming information (on-line processing) whereas recognition memory is dependent on the later retrieval of a subset of salient exemplars (memory-based processing). In contrast, the relation between memory and judgment ought to be strongest when both tasks require perceivers to access the same set of stored exemplars. In the present research, the judgment task involved on-line processing because experimental instructions directed participants to form group impressions as they encountered individual exemplars. The on-line judgment process may have been biased by entitativity beliefs in one of two ways. First, participants may have attached disproportionate weight to belief-consistent exemplars over belief-inconsistent ones during the impression formation task. Second, entitativity beliefs may have led to a post hoc correction of the overall group judgment in the direction of the prior belief. These data on the dissociation between memory and judgment suggest that group stereotypes can be maintained despite exposure to atypical members.

Experiment 1 demonstrated that preexisting beliefs about group entitativity influence judgments of physical appearance. Although this experiment focused on perceptions of physical attributes, the effect of entitativity may extend beyond observable features to inferences about deeper psychological characteristics of social groups. The next study was designed to explore this issue.

Experiment 2

The Influence of Groups' Physical Attributes on Trait and Behavioral Judgments

Several researchers have proposed that preexisting beliefs about social groups provide an explanatory link between overt physical features and underlying psychological characteristics attributed to groups (Rothbart & Taylor, 1992; Yzerbyt et al., 1997). For instance, the presence of salient physical attributes (e.g., dark complexion, specific facial features) often activates stereotypic beliefs about particular groups (e.g., African Americans) that in turn influence psychological inferences about group members (Duncan, 1976; Sagar & Schofield, 1980). Stereotypes of known groups may even be applied to new and unfamiliar groups, provided the new group possesses a single stereotypic physical attribute (e.g., racial stereotypes may be applied to unfamiliar dark-skinned groups).

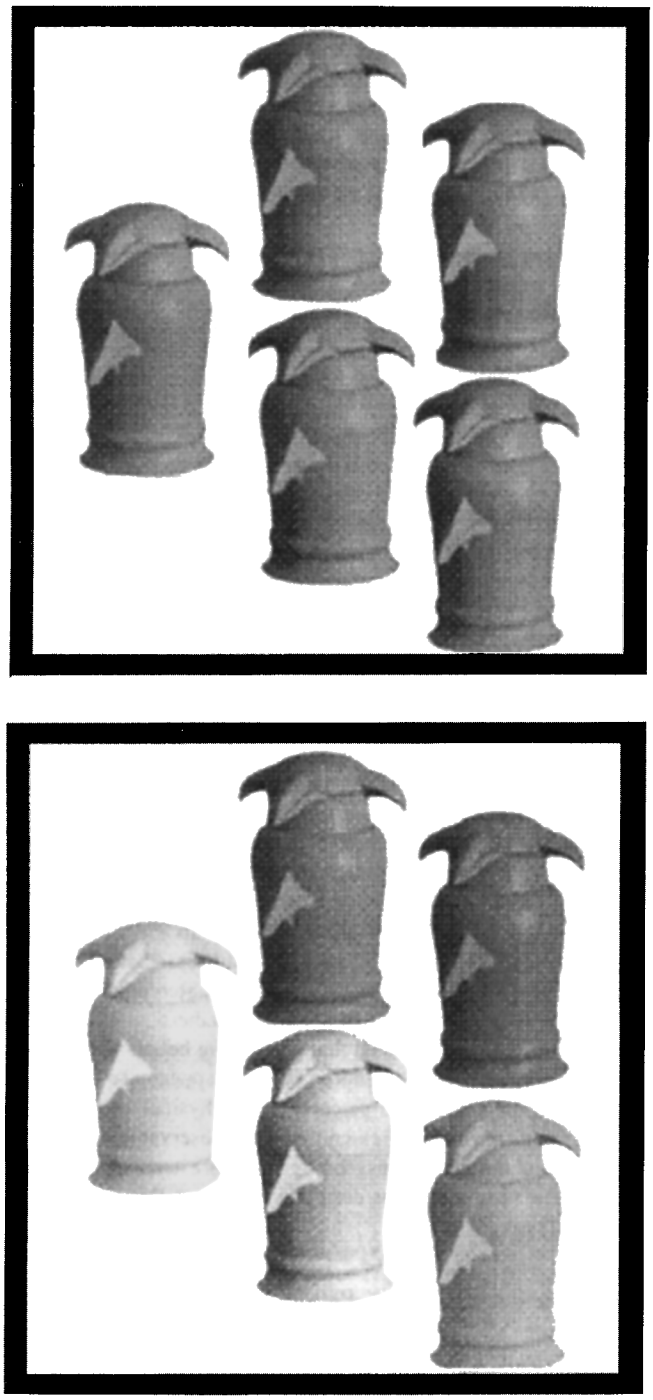

Figure 4. Sample pictures of Greeble groups. Although the Greebles shown here are in grayscale, in Experiment 2 these stimuli were presented in color. Individual members of Greeble groups were either all the same color (in the entitative condition; top panel) or all different colors (in the nonentitative condition; bottom panel).

In addition to activating group-specific stereotypes, physical properties may also influence psychological judgments by connoting high entitativity within target groups. For instance, entitative groups, especially those characterized by physical similarity, are likely to be viewed as psychologically similar (Abelson et al., 1998; Wilder, 1978). They may also be perceived as highly organized and capable of acting collectively against outsiders (Abelson et al., 1998). As a result, observable markers of entitativity may elicit negative judgments of social groups even when perceivers have very little other information about them.

We conducted a pilot study to examine whether physical attributes of groups (specifically dark or light complexion) and perceptual entitativity interact to influence trait and behavioral judgments of unfamiliar social groups. Pilot-test participants were shown two fictitious social groups, previously used in Experiment 1, and instructed to form an impression of the personality of each group. One group was light-complexioned and the other dark-complexioned (the dark group was either entitative or nonentitative). Members of both groups were accompanied by sentences describing similar (aggressive and neutral) behaviors.

We predicted that negative stereotypes about known racial groups would be applied to these novel groups such that dark groups would be judged as more aggressive and prone to criminality than light groups. Second, we expected that group entitativity would exacerbate negative judgments such that the entitative dark-complexioned group would be seen as more aggressive and criminal-like than its nonentitative counterpart. Results showed that dark skin color increased negative judgments of target groups, although this effect was not moderated by entitativity. Both entitative and nonentitative dark-skinned groups were judged to be equally aggressive and equally likely to perform criminal actions.

The predicted entitativity effect may have failed to obtain for two reasons. First, the influence of racial stereotypes may have been subjectively more powerful, thereby obscuring any additional effect of perceptual entitativity. The influence of group entitativity may be detected more easily when the target group is not strongly associated with known stereotypes. Second, the group-entitativity manipulation may have also been weakened by our experimental procedure in which group members were encountered individually rather than in collective form. Entitativity within a social group may be more salient when the group is encountered as a unit. Experiment 2 was conducted to eliminate these problems and provide a stronger test for the influence of entitativity on psychological judgments of groups.

Experiment 2 examined the influence of perceptual entitativity on judgments of novel groups. Novel groups were selected because they were unlikely to evoke specific group stereotypes, allowing a cleaner assessment of how beliefs about group entitativity influence the assignment of psychological properties to groups. Target groups in this experiment were comprised of computer-generated humanoid creatures called "Greebles" that resemble living creatures (Gauthier & Tarr, 1997; see Figure 4 for pictures of Greebles).[8] Group entitativity was manipulated by varying the physical similarity among group members—that is, members of Greeble groups were either similar or dissimilar in body color. To strengthen the salience of perceptual entitativity, all members of a target group were viewed simultaneously in the form of a collective. The Greebles were introduced as a new species created for a

[8] These Greebles were originally developed by Michael J. Tarr for perception research (see Gauthier & Tarr, 1997).

science fiction story. Participants were exposed to multiple groups and individuals on a computer screen, with the instruction to form an impression of each group or individual and judge their likelihood of engaging in positive and negative actions toward others outside the group. In addition, as a manipulation check, perceived group entitativity was assessed directly by asking participants to judge the degree to which group members were homogeneous in terms of their behavior toward outsiders.

It was predicted that members of entitative groups would be viewed as not only physically similar but also psychologically homogeneous with regard to their personality characteristics (Abelson et al., 1998; Wilder, 1978). Because psychologically entitative groups (especially out-groups) are generally viewed as clannish and resistant to external influence, they were predicted to be seen as capable of harmful organized action against others outside the group (cf. Abelson et al., 1998; Campbell, 1958). Thus, we expected that negative actions (e.g., *threaten, retaliate*) would more likely be attributed to entitative Greeble groups than to nonentitative groups or individuals, despite perceivers' lack of knowledge about these fictitious creatures.

Materials

Pictorial Stimuli

Twenty-five pictorial stimuli were created. Ten pictures depicted perceptually entitative groups in which individual Greebles were identical in body color (e.g., all five group members were either red, blue, green, purple, or yellow). Ten additional pictures depicted perceptually nonentitative groups in which individual members were disparate in body color (e.g., each group was composed of a red, a blue, a green, a purple, and a yellow individual). Finally, five pictures depicted individual Greebles (e.g., individuals were either red, blue, green, purple, or yellow; Figure 4 shows samples of entitative and nonentitative Greeble groups—however, these pictures are in grayscale). Each participant was randomly exposed to four entitative groups, four nonentitative groups, and two individual Greebles.

Dependent Measures

A pool of eight positive and negative traits and behaviors was selected from a larger list of words that had been pretested by 20 participants to determine how well each word described a group or an individual. On a 5-point scale, pretest participants had rated whether each word was "most likely to describe an individual" (1), "equally likely to describe both individuals and groups" (3), or "most likely to describe groups" (5). All eight stimuli were judged to be equally likely to describe groups and individuals. Positive items included words like "friendly" and "judicious"; negative items included words like "threaten" and "retaliate." An additional ninth item was included as a manipulation check to assess perceptions of psychological homogeneity among members of entitative and nonentitative groups. All word stimuli are listed in the Appendix. Target judgments and response latencies were recorded by computer.

Participants

Forty-two undergraduate students (28 female and 14 male) participated in this experiment for partial course credit. Participants completed the study in separate rooms equipped with Power Macintosh 7100s.

Procedure

As part of the cover story, participants were informed that a graphics artist had created two fictitious species of humanoid creatures ("Gs" and "Hs") for a new science fiction film. In the experiment, the term *Greebles* was not used to refer to the fictitious stimuli to avoid idiosyncratic reactions to the name itself. Hence, Greeble was replaced with the labels Species G and Species H. The two letters G and H were selected as group labels because they are typically judged to be equally likable (Johnson, 1986). The science fiction film for which the Gs and Hs were created ostensibly explored the relationship and interactions between the two species, although participants were not provided with any information about the species or their history. Participants were further told that they would see pictures of several groups of Gs and individual Gs but would not see pictures of the other species (Hs). Their task was to form impressions of, and judge, the extent to which various personality traits and behaviors were likely to describe each group of Gs and individual Gs.

Practice

Participants were first exposed to 10 consecutive samples of Gs on a computer screen to familiarize them with the stimuli. Next, they were familiarized with 10 practice questions similar to the ones they would be asked later (e.g., "How likely are these Gs to play with Hs?"). For each trial, a stimulus picture was displayed on a computer screen accompanied by a question that remained visible for 10 s, after which both were automatically replaced by the next picture and question. Each of these questions asked participants to judge the extent to which the group of Gs (or individual G) seen on the screen would engage in a particular behavior toward the other species. None of the questions used in the practice block appeared later during the data collection block. Participants' task, during the practice trials, was simply to watch the display; they were not required to respond to any of the questions.

Data Collection

After the practice trials, participants completed 88 critical trials. During each trial, they were randomly exposed to a picture of a group or individual accompanied by a question about the Gs (e.g., "How threatening are these Gs toward the Hs?") and a 7-point scale anchored by "not at all" (1) to "extremely" (7). Participants' task was to type in a number on the keyboard indicating the extent to which they thought the behavior described the group or individual seen on the screen. They were encouraged to report their first impression. Each picture and question remained on the screen for 10 s or until participants responded (whichever occurred first). During data collection trials, 10 pictorial stimuli (four entitative groups, four nonentitative groups, two individuals) were randomly paired with eight behavioral questions (80 trials), and the eight pictures of groups were randomly paired with the homogeneity question that served as a manipulation check (8 trials).

Results

Manipulation Check

As expected, judgments of group homogeneity revealed that compared with nonentitative groups, entitative groups were judged to be more homogeneous in terms of their behavior toward outsiders (means = 3.51 and 5.20, respectively), $F(1, 41) = 5.84$, $p = .02$. This suggests that physical similarity within groups elicited inferences about the psychological homogeneity among members.

Negative Evaluations of Groups and Individuals

Responses to the four negative dependent measures were averaged to form a single negative judgment index. A one-way

ANOVA was conducted to test the prediction that entitative groups whose members were similar in physical appearance would evoke more negative judgments than nonentitative groups or individuals. As illustrated in Figure 5, results revealed that more extreme negative behaviors were attributed to entitative Greeble groups than to nonentitative groups or individuals, despite perceivers' lack of knowledge about these fictitious creatures, $F(2, 40) = 35.41$, $p = 10^{-9}$.

Tukey's honestly significant difference (HSD) tests were conducted to test differences in judgments. Tukey tests showed that judgments of entitative groups were significantly more negative (mean = 5.00) than judgments of nonentitative groups (mean = 4.12; Tukey HSD = .48, p = .01) and individuals (mean = 3.54; Tukey HSD = .62, p = .01). Judgments of nonentitative groups were also more negative than those of individuals (Tukey HSD = .51, p = .05). The specific color of Greeble groups (or individuals) did not moderate the negativity effect.

Positive Evaluations of Groups and Individuals

Responses to the four positive dependent measures were averaged to form a single positive judgment index. An omnibus ANOVA revealed that participants' evaluations were significantly influenced by the type of stimulus being judged, $F(2, 40) = 12.68$, p = .0001 (see Figure 6). Specifically, post hoc Tukey tests showed that entitative groups were judged less positively (mean = 3.75) than nonentitative groups (mean = 4.27; Tukey HSD = .45, p = .01) but no differently than individuals (mean = 3.91; Tukey HSD = .35, p = *ns*). Similarly, nonentitative groups were judged no differently than individuals (means = 4.27 and 3.91, respectively; Tukey HSD = .37, p = *ns*). As before, the specific color of Greeble groups (or individuals) did not moderate judgment positivity.

Response Latencies for Group and Individual Judgments

We examined response latencies to assess the extent to which impressions of groups and individuals were formed spontaneously and easily. An omnibus ANOVA revealed a significant main effect

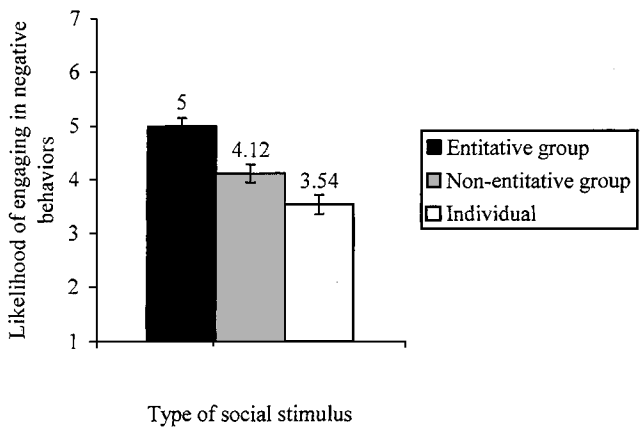

Figure 5. Negative judgments of entitative groups, nonentitative groups, and individuals.

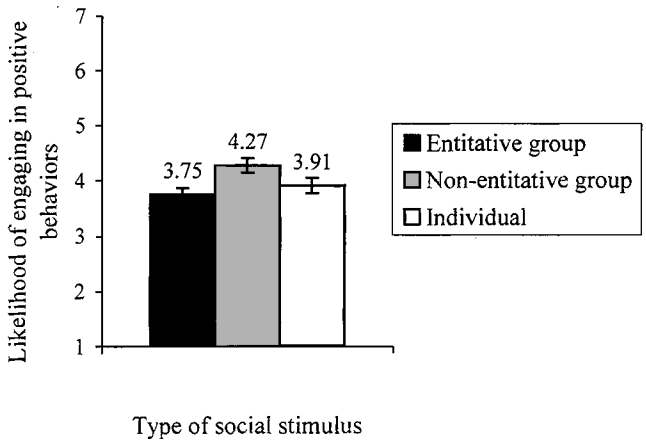

Figure 6. Positive judgments of entitative groups, nonentitative groups, and individuals.

for target judgments, $F(2, 40) = 9.12$, p = .001. Specifically, judgments of entitative groups were generated more rapidly than those of nonentitative groups: mean reaction times (RTs) = 3,260 versus 3,492 ms; $F(1, 41) = 12.70$, p = .0009. However, judgments of entitative groups were also slower than judgments of individuals: mean RTs = 3,260 versus 3,092 ms; $F(1, 41) = 4.75$, p = .04. These findings suggest that participants were forming relatively spontaneous impressions about the psychological character of entitative groups and individuals but that they were less disposed to do so for nonentitative groups.

Discussion

Experiment 2 assessed the extent to which perceptual entitativity evokes beliefs about group homogeneity and produces negative judgments about group behavior. These data suggest that even when groups are novel and unfamiliar, prior beliefs about entitativity inform group impressions. Perceptually entitative groups were judged to be more homogeneous in their behavior than were nonentitative groups and more likely to engage in harmful actions against others outside the group. Similarly, compared with nonentitative groups, entitative groups were viewed as less likely to engage in positive or benign behaviors toward outsiders. These findings suggest that perceived entitativity shapes group perception, making entitative groups appear more capable of threat, hate, and retaliation even in the absence of diagnostic information.

Our data also revealed an unexpected asymmetry in positive versus negative evaluations of groups and individuals. Specifically, on negative dimensions, judgments of entitative groups were more extreme than those of individuals, but on positive dimensions, judgments of both were similar. This evaluative asymmetry is similar to findings reported by Insko and his colleagues in their research on the individual–group discontinuity effect (Hoyle, Pinkley, & Insko, 1989; Pemberton, Insko, & Schopler, 1996; Schopler et al., 1995). Across several experiments, these researchers have found that intergroup interactions are rated as significantly more negative than are interindividual interactions. However, both types of interactions are rated equally on positive

dimensions. We speculate that the tendency to evaluate groups, especially entitative ones, as more negative but not less positive may emerge from an illusory correlation between distinctive stimuli (Hamilton & Gifford, 1976). Specifically, both highly entitative groups and negative attributes are relatively rare and distinctive compared with individuals and positive attributes. Perceivers may better encode events when these two types of stimuli (entitative groups and negative attributes) co-occur in the social world, creating the belief that entitative groups possess more negative attributes (but not necessarily fewer positive attributes) than do individuals.

Finally, Experiment 2 demonstrated that impressions of entitative groups were reported more quuickly than those of nonentitative groups, suggesting that perceivers were making spontaneous trait and behavioral inferences about entitative groups based on perceptual information (cf. Susskind & Hamilton, 1994).

General Discussion

The present research examined the extent to which perceived entitativity influences the accuracy of group perception and the psychological traits and behaviors attributed to groups. Our data demonstrate that when social groups appear to be cohesive and unified, perceivers are less sensitive to individual differences within the group and are more focused on invariant similarities across members. It appears that not only do group members begin to look more alike in terms of physical appearance (Experiment 1) but they also appear more psychologically homogeneous, acquiring the status of unitary social agents capable of organized action (Experiment 2). More importantly, our research suggests that the influence of group entitativity extends beyond judgments of homogeneity. Perceived entitativity promotes the impression that groups may engage in threatening and harmful actions against outsiders, even in the absence of diagnostic group information. These findings may have important implications for understanding the development of stereotypes and prejudice toward new and unfamiliar social groups.

Specifically, Experiment 1 suggests that social groups (especially ones resembling racial categories) are expected to possess shared and invariant characteristics. Such beliefs could play a role in the development of new stereotypes by making perceivers search for similar or typical members and explain away atypical ones as not being diagnostic of the group. This process would promote homogeneous impressions and produce new stereotypes even for groups that are fairly diverse.

Moreover, Experiment 2 suggests that the development of stereotypes may be especially receptive to salient physical properties associated with groups. Properties of groups, such as physical similarity, may be perceived as overt manifestations of the underlying psychological nature of groups (cf. Campbell, 1958). Cognitive associations between physical and psychological attributes may facilitate the creation and modification of new stereotypes by allowing perceivers to derive abstract beliefs from observable features. For instance, the belief that a group has similar attitudes and opinions may be derived from physical similarity (e.g., hair length [gender], skin color [race/ethnicity], skin texture [age]), the expectation that a group is preparing for collective action may be inferred from physical proximity among members (e.g., CEOs of the Fortune 50 in a board room, a family around a dinner table, a huddled basketball team), and unity of purpose and goals may be deduced from coordinated or synchronized group activity (e.g., workers on a tea plantation, a marching band, a dance troupe).

In keeping with research on implicit social cognition (Banaji & Hardin, 1996; Banaji, Hardin, & Rothman, 1993; Greenwald & Banaji, 1995), we emphasize that group perception can occur outside conscious awareness and without conscious control. The experience of being a participant in experiments such as these is an interesting one. When one of the experimenters subjected herself to the procedure of Experiment 1, the experience was very much that of a mechanical viewing of groups, with no confidence that group judgments and memory would show any predictable pattern. Yet, the data fell into predictable and meaningful patterns. Research on implicit social cognition can be fruitfully brought to bear on examinations of unconscious processes in group perception.

Finally, the present research has disturbing implications regarding the development of prejudice toward new social groups. Our data show that entitative groups are viewed not only as passive repositories of negative traits but also as active agents ready to engage in harmful actions against outsiders. In other words, even in the absence of group-relevant knowledge, similarity in perceptual features can transform groups into unitary purposeful organisms that appear threatening to observers outside the group (cf. Abelson et al., 1998; Campbell, 1958). The obtained finding showing greater anticipation of threat and hostility from highly cohesive groups compared with less cohesive groups and individuals fits well with an extensive program of research by Insko, Schopler and their colleagues (Hoyle et al., 1989; Insko & Schopler, 1998; Insko et al., 1993; Schopler et al., 1995). These researchers have repeatedly demonstrated that interactions with groups are expected to be fraught with greater distrust and competition than are interactions with individuals. Together, the present and past research seem to suggest that negative attitudes toward cohesive or entitative groups emerge from the perception that groups sacrifice individual autonomy in favor of mass (and perhaps mindless) participation in collective action (see Insko, Schopler, & Sedikides, 1998, for a similar argument about individuals' perceptions of highly entitative in-groups). Although some highly entitative groups may under certain conditions be justifiably perceived as hostile and threatening, our research suggests that even when no additional group information is available, perceptual cues connoting entitativity lead to the spontaneous presumption that groups are untrustworthy and threatening. Such evaluations of entitative groups may stem, at least partially, from a Euro-American cultural preference for individual autonomy and the belief that membership in entitative groups inevitably involves the loss of individuality. Such negative attitudes toward entitative groups may thus emerge only when perceivers are immersed in a cultural milieu that favors individual autonomy.

As an illustration of the potential influence of perceived entitativity on intergroup relations, consider the following example. Imagine the entry of a new group of immigrants into the United States. Observers know little about them except for their salient observable characteristics (e.g., their similarity of physical features and dress, and their close living proximity). These cues may be sufficient to elicit prejudice toward the group in misguided anticipation of their harmful actions. For social scientists committed to problems of intergroup relations, this research suggests that reduction of stereotyping and

prejudice may require the development of strategies that challenge exaggerated perceptions of out-groups as "monolithic organisms with evil intent" (Abelson et al., 1998, p. 249).

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Appendix

Dependent Measures for Experiment 2

Negative Actions
How much do these Gs (does this G) *hate* Hs?
How much do these Gs (does this G) *retaliate* against Hs?
How *threatening* are these Gs (is this G) toward Hs?
How *prejudiced* are these Gs (is this G) toward Hs?

Positive Actions
How *friendly* are these Gs (is this G) toward Hs?
How *judicious* are these Gs (is this G) toward Hs?
How *collaborative* are these Gs (is this G) with Hs?
How *united* are these Gs (is this G) with Hs?

Manipulation Check
How *homogeneous* are these Gs when they oppose Hs?

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