

Minority and Majority Discrimination: When and Why

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This research examined reasons for the frequently obtained finding that members of numerically minority groups exhibit greater intergroup discrimination than members of majority groups and also sought to determine the conditions under which members of both majority and minority groups exhibit intergroup discrimination. Experiment 1 examined the role of group identification and found that discrimination by members of a majority group was equivalent to that of minority group members when identification was experimentally induced. Experiments 2 and 3 examined further the underlying bases for minority and majority discrimination. Consistent with predictions derived from optimal distinctiveness theory (Brewer, 1991), identification with the in-group was found to be a necessary condition underlying intergroup discrimination, but motivations for discrimination varied as a function of satisfaction with in-group size and distinctiveness. © 2001 Academic Press

A consistent finding in the experimental and field research literature on intergroup discrimination is that members of numerically smaller (minority) groups discriminate more than members of numerically larger (majority) groups (Mullen, Brown, & Smith, 1992). While the term “minority group” is sometimes used to refer to an inferior or negatively valued group (e.g., Blanz, Mummendey, & Otten, 1995), the terms “minority” and “majority” here refer strictly to relative group size. All other things being equal, relatively smaller groups have been found to exhibit more in-group bias than larger groups on a number of measures (e.g., Bettencourt, Miller, & Hume, 1999; Brewer, Manzi, & Shaw, 1993; Brown & Smith, 1989; Gerard & Hoyt, 1974; Leonardelli, 1998; Sachdev & Bourhis, 1984; Simon & Brown, 1987).

Although enhanced discrimination by members of minority groups relative to members of majority groups has been

demonstrated in a number of contexts, the motivations that underlie this difference in in-group bias have not been fully explored. One explanation is that discrimination by minority group members may reflect the insecurity associated with categorization in a relatively disadvantaged or vulnerable group (Ellemers, Doosje, van Knippenberg, & Wilke, 1992; Sachdev & Bourhis, 1984, 1991; Simon, 1992; Simon & Brown, 1987). Perhaps minority group members discriminate to reduce or compensate for the insecurity associated with belonging to a smaller group; majority group members, by contrast, discriminate less because they find security in their group size and have less need to increase the level of in-group advantage.

A second explanation is that discrimination by minority group members reflects the greater in-group salience associated with their smaller size (Bettencourt et al., 1999; Mullen et al., 1992). One version of this explanation proposes that members who belong to these more salient minority groups will discriminate more than members of majority groups simply because minority members are more focused on the in-group than are majority group members. In a test of this hypothesis, Bettencourt et al. found that perceptions of in-group salience did mediate the effects of group size on in-group bias. Not only was in-group salience positively associated with in-group bias, but controlling for in-group salience reduced the effect of in-group size on in-group bias to nonsignificance.

Clearly, this evidence illustrates that group salience plays a role in the effect of group size on discrimination. What

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this explanation is lacking, however, is a motivational component; group salience may play a role in intergroup discrimination by directing group focus, but salience itself does not necessarily provide a motivational explanation for the relatively greater discrimination exhibited by minority group members. It is not clear whether in-group focus in the case of minority groups enhances insecurity and anxiety which then motivates discrimination *against* the out-group or whether in-group focus enhances positive in-group identification which motivates discrimination in favor of the in-group.

Building on the in-group salience explanation, the theory of "optimal distinctiveness" (Brewer, 1991, 1993) provides a basis for understanding what motivational state might be associated with membership in a relatively small, salient in-group. In contrast to explanations that assume that minority group membership constitutes a less valued or more vulnerable social identity than majority group membership, optimal distinctiveness theory suggests that minority status may be a source of positively valued social identity. This theory posits that people prefer groups that provide sufficient inclusiveness *within* the group and sufficient differentiation *between* the in-group and out-group, and groups that meet both needs will engage strong in-group identification and associated in-group favoritism. Optimal distinctiveness theory proposes that minority identities meet both needs because of their greater distinctiveness in contrast to large majority groups. Thus, when individuals are placed into a minority group, they are predicted to be more satisfied and more likely to identify with that group than individuals assigned to a large majority group.

Social identification and group satisfaction are both expected to create the conditions under which minority and majority group members exhibit in-group favoritism. First, social identification is expected to be a necessary (although not a sufficient) antecedent of in-group bias. It has been demonstrated in a number of research contexts that members of minority groups are more identified with their group than are majority members (Abrams, 1994; Blanz et al., 1995; Brewer & Weber, 1994; Ellemers & van Rijswijk, 1997; Simon & Brown, 1987; Simon & Hamilton, 1994, Experiment 1). According to optimal distinctiveness theory, minority group members should not only be more identified but also more satisfied with their in-group than majorities, and it is this positive valuing of the in-group that is assumed to underlie their in-group bias. On the other hand, members of nondistinctive majority groups are predicted to be less satisfied with their membership and more likely to disengage from that social identity. This disengagement makes it unlikely that group members will exhibit discrimination in the form of in-group favoritism. From this perspective also, the lesser discrimination on the part of members of majority groups reflects a failure to identify with that group and hence little or no motivation for in-group bias. Although

in-group identification per se is not necessarily a sufficient explanation for intergroup discrimination, discrimination on behalf of fellow group members is unlikely unless identification has been engaged.

As a first step in examining the implications of optimal distinctiveness theory for understanding the motivations underlying differences in in-group bias by members of majority and minority groups, our initial experiment tested the idea that differential identification with the in-group is one determining factor. Specifically, Experiment 1 was designed to test directly the hypothesis that, in the absence of identity induction, individuals assigned to majority categories identify less with their group than individuals assigned to a minority category. The experiment also tested the prediction that differences between majority and minority group discrimination would be eliminated if majority group members were induced to identify with their assigned category. Further experiments were then designed to explore the conditions under which minority and majority members would exhibit bias and the different motivations that might underlie discrimination as a function of in-group size and distinctiveness.

EXPERIMENT 1

This experiment used a minimal group categorization scheme to classify individuals into minority and majority groups. Following classification, but before measures of in-group identification and discrimination, a procedure was introduced designed to enhance identification with category assignment for half of the participants. Thus, the experiment consisted of a 2 (In-group Size: Majority vs Minority) \times 2 (Identification Induction: High vs Low) between-participants design.

We predicted two additive main effects of our manipulations on in-group identification. Based on optimal distinctiveness theory and evidence from previous research (Abrams, 1994; Blanz et al., 1995; Brewer & Weber, 1994; Ellemers & van Rijswijk, 1997; Simon & Brown, 1987; Simon & Hamilton, 1994, Experiment 1), minority group members were expected to spontaneously identify with their group more than majority group members. In addition, we expected a main effect of our induction manipulation such that participants in the high induction condition would identify more than those in the low induction condition.

On the discrimination measure, two alternative predictions could be made. If identification is both a necessary and sufficient explanation for discrimination, as some theorists claim (e.g., Gagnon & Bourhis, 1996; Perrault & Bourhis, 1998, 1999), then there should be a one-to-one correspondence between level of identification and degree of in-group bias. In that case, we would expect two main effects of our experimental variables such that minority group members discriminate more than majority group members, and indi-

viduals in the high induction condition should discriminate more than those who were not induced to identify. In addition, responses on the identification scale should mediate the responses on the discrimination measure; controlling for identification should reduce the variance accounted for by the in-group size and identity induction manipulations. On the other hand, if, as we and others theorize (e.g., Brown et al., 1992; Hinkle & Brown, 1990), identification is a necessary, but not a sufficient, explanation for discrimination, then an interaction would be expected between in-group size and identity induction on the discrimination measure. Under low induction, minority group members should discriminate more than majority group members (as has been found in previous work). Under high induction (assuming that the induction raises identification by majority members to a sufficient level), however, the group size effect on the measure of social discrimination should be eliminated. In other words, the induction manipulation should make a significant difference in in-group bias for those in majority groups but should have no significant effect on the expression of bias by minority group members (who are sufficiently identified even under low induction conditions).

METHOD

Participants were randomly categorized into groups in accord with the procedures of the minimal group paradigm (Tajfel, Billig, Bundy, & Flament, 1971). A dot estimation exercise was used as the vehicle for categorization into two social groups; information about in-group size was embedded in the participants' dot estimation performance feedback. Following categorization, participants completed a social identification scale followed by zero-sum allocation matrices, which served as the measure of discrimination or in-group bias.

Participants

Ninety-one students (60% women, 85% European Americans) at the Ohio State University participated in the study. Participants received course credit for their involvement.

Procedure

Between 7 and 12 participants completed the experiment in any given session. Once everyone was seated, the experimenter and an assistant explained that the study investigated dot estimation as an indicator of perceptual acuity and preconscious style. A brief description of the estimation task was provided, and the students then made estimates for a total of 10 dot trials.

After the task, the assistant took the participants' estimates into the next room, ostensibly to categorize them. The

assistant gave the sheets to another researcher, who randomly classified participants into one of the two in-group size conditions. A sheet was prepared for each participant that contained a description of their classification. All participants who were classified as *minority* members read the following description:

The test you just took examined one's abilities underlying dot estimation. Dot estimation has been related to perceptual acuity and preconscious style, two important abilities of the mind which are used to classify people as overestimators and underestimators. *Your test results indicate that you are an underestimator, and that you are part of a minority portion of the population. Most people are overestimators; in fact, 75–80% of them are. You fall into a group that represents 20–25% of the population.* We don't have time right now, but we will be glad to spend time discussing your score with you after the session. For purposes of identifying your category membership for the rest of the study, we have attached the letter "U" to your identification number. Please use this full designation on all remaining forms.

Individuals classified as majority group members read the same paragraph, but with the following sentences in place of the italicized sentences: "Your test results indicate that you are an overestimator, and that you are part of the majority portion of the population. Few people are underestimators; in fact only 20–25% of them are. You fall into a group that represents 75–80% of the population."

Immediately following this categorization feedback, participants received the identification induction in the form of a questionnaire ostensibly intended to assess their "fit" to the typical category member. Following the induction questionnaire, participants completed a self-report identification scale and then the allocation task, which consisted of four zero-sum allocation matrices.

Identification induction. The manipulation was an adaptation of a method developed by Salancik (1974) in the attitude measurement domain (and also used by Jetten, Spears, & Manstead, 1997, in the context of an in-group categorization experiment). The technique relies on inducing biased scanning (Janis & King, 1954) to lead individuals to endorse or reject statements as self-descriptive. When statements are preceded by moderate qualifiers such as "sometimes" or "on occasion," the wording induces respondents to think of *confirming* instances from their own memory and to be likely to endorse the statement as something true about themselves. When extreme qualifiers such as "always" or "never" preface the same statement, scanning is biased toward *disconfirming* instances and likely to result in rejection of the item as not true of the self. In the present study, qualifiers were used systematically to manipulate participants' rate of endorsement of statements that were said to be typical of members of their estimation category.

The identification induction came in the form of a "Lifestyles Questionnaire," in which all participants were asked to rate whether each of a list of in-group characteristics was descriptive of themselves. Instructions indicated that the statements on the questionnaire represented descriptions

that had been found in past research to be characteristic of most members of the participant's estimator category. Each list contained eight descriptive statements, tailored to appear plausible as characteristics for "overestimators" (e.g., "... I find myself overestimating the amount of time I need to complete a task") or for "underestimators" (e.g., "... I underestimate how much money I am able to spend, so that I won't spend too much"), depending on the participant's categorization condition. Whereas Jetten et al. (1997) used the procedure to manipulate individuals' attitudes toward the in-group, an attempt was made here to keep the behavior characteristics themselves relatively neutral in order to avoid evaluative implications about the group.¹

High and low induction versions of the same questionnaire differed in the qualifiers that were added to each statement. Each statement was preceded either by a moderate frequency quantifier (e.g., "At times, I find myself . . .") or by a more extreme frequency quantifier (e.g., "Almost always, I . . .") in order to affect the likelihood of endorsement of that item. In the high induction condition (designed to induce respondents to endorse most of the statements as true of themselves), six of the eight behaviors were prefaced by a moderate quantifier, with only two worded more extremely. In the low induction condition, four of the behaviors were prefaced by moderate quantifiers and four by extreme quantifiers (in order to produce a neutral, 50–50, distribution of item endorsement).

To respond to each item, individuals indicated whether each in-group descriptor was self-descriptive by circling the word "True" or "False" next to each statement. This manner of responding left a visible record of the number of "true" endorsements the respondent had made by the time he or she completed the one-page questionnaire. With the high induction version of the questionnaire, the biased scanning should produce a high proportion of "true" responses, leading to a self-perception of typicality as a category member. In the low induction version, true and false responses should be closer to 50–50 and essentially neutral. We expected this low induction condition to produce results equivalent to those of a no induction condition; here minority group members were expected to identify more than majority group members.

Dependent Measures

Social identification scale. Items on the measure of social identification asked the extent to which respondents

¹ Pilot testing confirmed our expectations. Fifteen participants rated the characteristics, with their frequency qualifiers removed, on how positive each behavior was believed to be (1 = *Very Negative*, 3 = *Neutral*, 5 = *Very Positive*). Analysis indicated that the mean rating of underestimator characteristics ($M = 3.24$, $SD = .27$) did not differ from the mean rating of overestimator characteristics ($M = 3.29$, $SD = .24$), $t(14) = -.63$, $p = .54$.

felt they were similar to and belonged to the in-group category and whether they felt connected to the group. The six items included on the scale were the following, which were pulled from various identification scales found in the literature (*identity* subscale of the collective self-esteem scale, Luhtanen & Crocker, 1992; the *identification with a psychological group* scale, Mael & Tetrick, 1992): "I feel that this group is an important reflection of who I am," "I don't act like the typical person of this group" (reverse-scored), "I have a number of qualities typical of members of this group," "Belonging to this group is an important part of my self-image," "If someone praises this group, it would feel like a personal compliment," and "If someone criticizes this group, it would feel like a personal insult." Participants responded to these items using a 6-point response scale (1 = *Strongly Disagree* to 6 = *Strongly Agree*). After recoding the reverse-scored item, responses were summed; total scores could range from 6 to 36, where larger responses indicated greater identification. Internal consistency for the six-item scale was acceptable ($\alpha = .63$).

Allocation matrices. The allocation task was introduced as a questionnaire examining the "underlying principles" guiding alternative distributions of money. Participants were asked to indicate their preference for allocations between two individuals in the present study, one identified as an underestimator and one as an overestimator. It was emphasized that many different principles of allocation are possible and equally justifiable. Four zero-sum allocation matrices (adapted from Tajfel et al., 1971; Matrix Type B in Experiment 1) were used to assess whether allocators preferred fair (equal) distributions or distributions that favored one group member over the other. Zero-sum matrices are global measures of discrimination where the total allocation amount is fixed; for these matrices, as allocation for one group increases, allocation for the other group necessarily decreases. The index of discrimination for these matrices was computed by subtracting out-group allocations from in-group allocations across the four matrices, creating a difference score where positive numbers indicate in-group favoritism, negative numbers indicate out-group favoritism, and values near zero indicate a tendency toward fairness.

RESULTS

Preliminary Analyses

Outliers. Box plots on the identification scale with the full sample ($N = 91$) indicated that two individuals had extremely high scores (32). In addition, box plots on the difference score revealed one individual with an extremely high score (56) and another with an extremely low score (–46). These four individuals were dropped from further analyses, resulting in $N = 87$ across the four experimental conditions.

TABLE 1
Means and Standard Deviations for Lifestyles Responses and Identification: Experiment 1

	High induction		Low induction	
	Minority in-group	Majority in-group	Minority in-group	Majority in-group
Lifestyles responses	5.14 (1.42)	5.23 (1.27)	5.13 (1.55)	4.05 (1.39)
Identification	20.14 (3.88)	18.32 (4.90)	18.17 (3.98)	16.20 (3.34)
<i>n</i>	22	22	23	20

Note. Standard deviations are in parentheses.

Group manipulation check. A manipulation check was added at the end of the study to determine whether participants remembered being categorized as minority group (“underestimator”) or majority group (“overestimator”) members. All participants correctly reported their group membership.

Lifestyles responses. On the Lifestyles Questionnaire, participants responded “True” or “False” as to whether a list of in-group characteristics was descriptive of themselves. True responses were coded as a one, and false responses as a zero; these responses were then summed together, creating a variable that could range from 0 to 8, with higher scores indicating that more in-group characteristics were endorsed as self-descriptive.

If the induction worked as predicted, then participants in the high induction condition should report greater Lifestyles endorsement than participants in the low induction condition. In addition, because responding to these measures followed the in-group size manipulation, responses to this questionnaire also served as a measure of the effect of in-group size on self-perception under the low induction condition. Lifestyles responses were submitted to an analysis of variance (ANOVA), with in-group size and the identity induction as between-participants factors. Analysis revealed a significant induction main effect, $F(1, 83) = 3.80, p = .05, \eta^2 = .04$. As expected, participants in the high induction condition endorsed more in-group characteristics as self-descriptive ($M = 5.18$) than did individuals in the low induction condition ($M = 4.63$). In addition, there was a marginally significant interaction between in-group size and the identity induction, $F(1, 83) = 3.72, p = .06, \eta^2 = .03$. The means are presented in Table 1. Minority members consistently endorsed a high number of in-group characteristics as self-descriptive, but majority members did so only when induced to by the biased wording of the questionnaire. Simple effects tests indicated that under low induction, minority group members endorsed significantly more items than majority group members, $F(1, 83) = 6.24, p = .01, \eta^2 = .07$, although both groups endorsed at least half the items as intended for this condition. In the high induction condition, however, majority members en-

dorsed in-group characteristics to the same extent as minority members, $F(1, 83) = .05, p = .83, \eta^2 = .00$, as intended by the manipulation.

Group Identification

To determine whether the effectiveness of the induction condition in manipulating self-descriptions actually affected identification with the in-group, scores on the identification scale were submitted to a two-way ANOVA. The analysis indicated a significant main effect of the induction manipulation on identification, $F(1, 83) = 5.42, p = .02, \eta^2 = .06$. Individuals in the high induction condition reported higher identification ($M = 19.23$) than did individuals in the low induction condition ($M = 17.26$). There was also a significant main effect of in-group size, $F(1, 83) = 4.68, p = .03, \eta^2 = .05$. Members of the minority group reported higher identification ($M = 19.13$) than did majority group members ($M = 17.31$). There was no significant interaction effect; high induction increased identification for both majorities and minorities, but members of the minority group identified more highly than members of the majority category under both induction conditions (see Table 1).

Allocation Matrices

Difference scores (i.e., in-group – out-group) across the four allocation matrices were used as the measure of discrimination. The scores were submitted to a two-way ANOVA, which revealed a significant main effect for the identification induction, $F(1, 83) = 7.20, p < .01, \eta^2 = .08$. Individuals induced to identify with their group exhibited greater in-group bias ($M = 13.09$) than did individuals who were not induced to identify ($M = 2.74$). Qualifying this main effect was a significant interaction, $F(1, 83) = 3.93, p = .05, \eta^2 = .04$. The means are presented in Fig. 1.

Simple effects tests indicate that, when selecting for majority members, the induction significantly influenced in-group bias, $F(1, 83) = 10.51, p < .01, \eta^2 = .11$; however, when selecting for minority members, the induction did not significantly influence in-group bias, $F(1, 83) = .25, p = .62, \eta^2 = .00$. Majority group members exhibited more in-group favoritism in the high induction condition than with low induction. Furthermore, the difference between minority and majority group members was marginally significant under low induction, $F(1, 83) = 2.99, p = .09, \eta^2 = .04$, but the difference was eliminated under high induction, $F(1, 83) = 1.15, p = .29, \eta^2 = .01$. The majority members who were induced to identify with their group exhibited were not significantly different from minority members from either induction condition; only the low induction majority member condition deviated from the other three conditions. Single sample *t* tests indicated that only the responses of the low induction majority

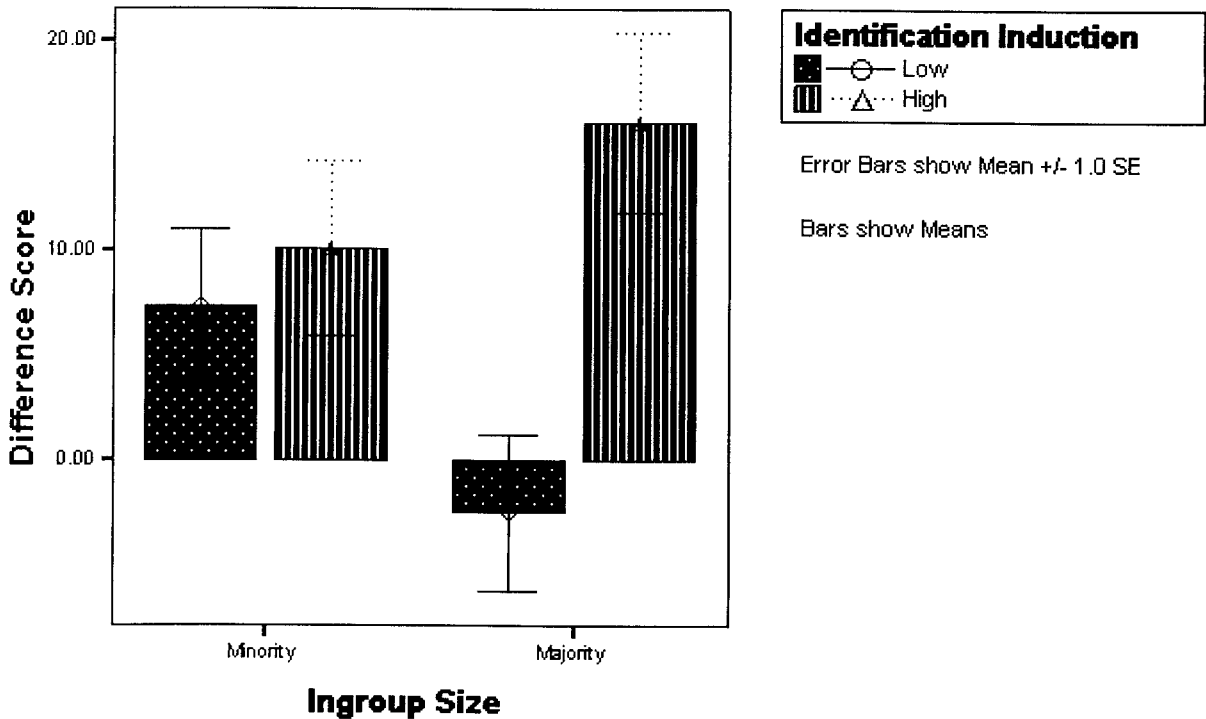


FIG. 1. Allocation difference scores as a function of in-group size and identity induction: Experiment 1.

members did not differ from zero, $t(19) = -.67, p = .51, d = -.31$; all other cells were different from zero, $t_s > 1.96, p_s < .07, d_s > .84$. Only individuals in the low induction majority group exhibited no in-group bias.

In this study, then, minority group members discriminated in favor of the in-group regardless of the identification induction, but majority group members exhibited in-group bias only when identification with the in-group had been induced. This analysis certainly points to the role of identification in majority discrimination; in fact, identification was positively correlated with discrimination exhibited by majority members, $r(42) = .46, p < .01$, across conditions. Conversely, identification was uncorrelated with discrimination exhibited by minority members, $r(46) = -.19, p = .22$. This is probably because identification scores for minority group members had a more restricted range, being relatively high in both induction conditions. Apparently once a requisite level of identification is reached, further variation in level of identification does not account for additional variation in in-group bias.

DISCUSSION

The findings from Experiment 2 bore out the predictions from optimal distinctiveness theory that in-group identification and discrimination are spontaneously aroused by categorization into a minority group but need to be induced for majority groups. These findings support the idea that

identification is at least a necessary condition for discrimination; individuals must see themselves as connected to their group before they are motivated to exhibit in-group bias. The pattern of differences in identification and discrimination also support the idea that differences in identification underlie differences in discrimination between members of minority and majority groups. When level of identification is increased (though induction), comparable degrees of in-group bias are exhibited by both majority and minority group members.

While not the primary goal of this study, the results speak to an ongoing debate of the causes of discrimination in the minimal group paradigm (Tajfel & Turner, 1986; Gaertner & Insko, 2000; Gagnon & Bourhis, 1996). Recently, Gaertner and Insko (2000) claim that discrimination exhibited in the minimal group paradigm can be explained entirely by outcome dependence. However, this explanation cannot account for the effects of the above study. The identity induction involved manipulating the perception that the participant was similar to the in-group, not the extent to which allocations awarded to in-group members would be allocated to the participant. Consequently, the above study illustrates that engaging social identification can engage discrimination under minimal group conditions.

Identification: Necessary, But Sufficient?

While differences in identification underlie differences in discrimination, it is apparent that identification alone does

not fully account for degree of discrimination. The induction increased minority identification, but discrimination did not increase in a corresponding fashion. This supports our contention that identification with the in-group is a necessary but not sufficient condition for the expression of in-group bias. In order to account more fully for the level of bias exhibited under different conditions, one must consider the motivational basis of bias for minority and majority group members.

The results of the first study support the idea that minority group membership is closer to an optimally distinct identity than majority group membership in that it is associated with greater identification with the in-group. Central to the optimal distinctiveness explanation for differences in minority and majority group behavior is the motivational state that is presumed to underlie in-group bias and discrimination. Because minority identity meets both inclusion and differentiation needs, categorization into a minority group should lead to high levels of identification *and satisfaction* with the group identity. Under these conditions, discrimination in favor of the in-group is one manifestation or affirmation of in-group identification.

Membership in a majority group, on the other hand, is not satisfying because it leaves the differentiation need unmet. One response to this is disengagement, avoiding identification with the category as self-relevant. When self-relevance is high, however, identification can be engaged, even for large social categories. Under these circumstances, group members should be motivated to increase the perceived distinctiveness of their category identity to improve satisfaction of the differentiation motive. One method of enhancing in-group distinctiveness is discrimination against outgroups (Branscombe & Wann, 1994; Turner, 1975). Thus, for members of majority groups, the degree of discrimination and in-group bias may be a reflection of their level of *dissatisfaction* with the in-group as an optimal identity; the underlying motive is improving optimality rather than affirming identity.

This analysis suggests that identification with a group and satisfaction with that group are not synonymous as sources of social identity (Ellemers, Kortekaas, & Ouwerkerk, 1999; Perrault & Bourhis, 1998). Identification and satisfaction may work in combination to determine whether group members exhibit in-group bias and why. When both identification and satisfaction are high (optimal identities), discrimination functions to affirm in-group identity. When identification and satisfaction are both low, there is no motive to discriminate. But when identification is high and satisfaction is low, discrimination functions to increase differentiation between in-group and out-group.

For both minority and majority groups, then, discrimination is believed to be dependent on satisfaction and identification. Members in both groups must identify with the in-group to discriminate in favor of that group. Once a

requisite level of identification is engaged, however, the degree of discrimination and its underlying motivation are determined by levels of satisfaction with the in-group. But the relationship between satisfaction and discrimination differs for majority and minority groups. Minority group members will be more likely to discriminate as group satisfaction increases; majority members, however, should show a negative relationship between satisfaction and discrimination since discrimination is presumed to be motivated by *dissatisfaction* with in-group distinctiveness.

In order to test these predictions about the motives underlying discrimination for optimal (minority) and nonoptimal (majority) groups, a second experiment was conducted in which separate measures of identification and in-group satisfaction were included.

EXPERIMENT 2

The primary purpose of the experiment was to examine the role of in-group satisfaction as a predictor of in-group bias. First, it was expected that minority members should report being more satisfied with their group than majority members, suggesting that minority identities are optimally distinct, but majority identities are nonoptimal. What's more, in-group size and in-group satisfaction were believed to interact when controlling for differences in identification. Because minority identities are more satisfying than majority identities, individuals in this group should be more likely to discriminate as satisfaction with the in-group increases. Majority groups, however, because they are less satisfying than minority identities, should lead individuals to discriminate more as satisfaction decreases. To test these hypotheses, participants were classified as minority or majority group members, and all were induced to identify with their group.² A measure of group satisfaction was added to the experiment, following categorization but before the allocation matrices.

This in-group satisfaction measure provided not only a test of the predictions made by optimal distinctiveness theory, but also provided a test of an alternative hypothesis, namely the role of collective self-esteem in intergroup discrimination. Recently, researchers (Long & Spears, 1997; Rubin & Hewstone, 1998) have argued that low collective self-esteem motivates discrimination, which serves to enhance or restore collective self-worth. Assuming that minority identity is an insecure identity (Sachdev & Bourhis,

² As a reviewer correctly pointed out, this study does not provide a full test of the predicted three-way interaction between in-group size, satisfaction, and identification. Experiment 1 already demonstrated that majorities do not discriminate under low identification conditions, and the primary purpose of this second study was to examine the underlying motivation of minority and majority discrimination when it does occur. Thus, for purposes of testing the role of satisfaction with the in-group, it was most appropriate to induce all group members to identify with their group.

1984, 1991), it is possible that minority discrimination increases as collective self-esteem (as measured by the in-group satisfaction measure) decreases. Thus, two competing predictions were tested in the second study: Optimal distinctiveness theory predicts that minority discrimination increases as in-group satisfaction increases, but the collective self-esteem hypothesis (Rubin & Hewstone, 1998) predicts that minority discrimination increases as in-group satisfaction decreases. These predictions were put to the test in the second experiment.

METHOD

Participants

Seventy-nine students (65% women, 82% European American) at the Ohio State University participated in the study. Participants all received course credit for their involvement. One person completed the materials incorrectly and was dropped, resulting in $N = 78$.

Procedure

Participants were classified into either minority or majority category, and all were induced to identify with their group using the high induction manipulation from Experiment 1. The three primary dependent measures were, in order, a social identification scale, a group satisfaction measure, and four zero-sum matrices. Responses to the Lifestyles Questionnaire were also submitted to analysis to verify that individuals were induced to identify to an equal extent.

The identification measure was revised by adding four new items to the six used in the previous experiment: "This group's characteristics mirror my characteristics," "I feel that I am a part of this group," "I feel ties to people in this group," and "I do not belong to this group" (reverse-scored). After recoding reversed scored items, the 10 responses were summed producing a possible score which could range from 10 to 60, with higher numbers indicating greater identification. Internal consistency was improved by the inclusion of these additional items in the scale ($\alpha = .79$).

For the in-group satisfaction scale, participants rated their level of agreement with the following items with reference to their in-group: "I am pleased to be a member of this group," "This group is not satisfying to me" (reverse-scored), "I am unhappy with this group" (reverse-scored), and "I am satisfied with this group." Participants responded to these items using 6-point response options (1 = Strongly Disagree, 6 = Strongly Agree). After reversed-scored items were recoded, responses were summed; total scores could range from 4 to 24, with higher numbers indicating greater in-group satisfaction. Internal consistency was adequate ($\alpha = .74$).

TABLE 2
Condition Means and Standard Deviations: Experiment 2

	Minority in-group	Majority in-group
Lifestyles responses	5.83 (1.67)	5.95 (1.15)
Identification	38.68 (7.53)	36.11 (7.50)
Satisfaction	17.76 (2.96)	16.38 (2.66)
Difference score	14.15 (24.09)	11.73 (24.77)
<i>n</i>	41	37

Note. Standard deviations are in parentheses.

Measures that appear closely associated with in-group satisfaction include the *private esteem* subscale of the collective self-esteem scale (Luhtanen & Crocker, 1992) and the *quality of social identity* scale (Gagnon & Bourhis, 1996). In a separate study, an exploratory factor analysis confirmed our assumption that our satisfaction measure is equivalent to this aspect of collective self-esteem. The in-group satisfaction items loaded only onto the same factor as the items that compose the private esteem subscale, even when they were entered into the factor analysis that included items of the other three subscales (i.e., identity, public esteem, and member esteem) of the collective self-esteem scale (Leonardelli & Tormala, 2000).³

RESULTS

Lifestyles Responses

Responses on the lifestyles questionnaire were submitted to ANOVA; as intended, in-group size did not produce a significant difference, $F(1, 76) = .13, p = .72, \eta^2 = .00$. Minority and majority members were induced to respond with a high number of "true" responses to the same extent under the high induction manipulation used in this experiment (see Table 2).

In-Group Size on Identification, In-group Satisfaction, and Discrimination

The primary purpose of this second experiment was to assess the interrelationships among in-group size, identification, and satisfaction as predictors of social discrimination. Prior to the correlational analyses, however, we examined the effects of in-group size on the process and in-group bias measures to determine if effects obtained in the high induction condition in Experiment 1 were essentially replicated. Identification and difference scores, as well as satis-

³ One would expect measures of social identification and in-group satisfaction to be positively correlated; presumably, the more individuals identify with a group, the more they should like it. As expected, in the present study the two scales were significantly correlated, $r(78) = .62, p < .001$.

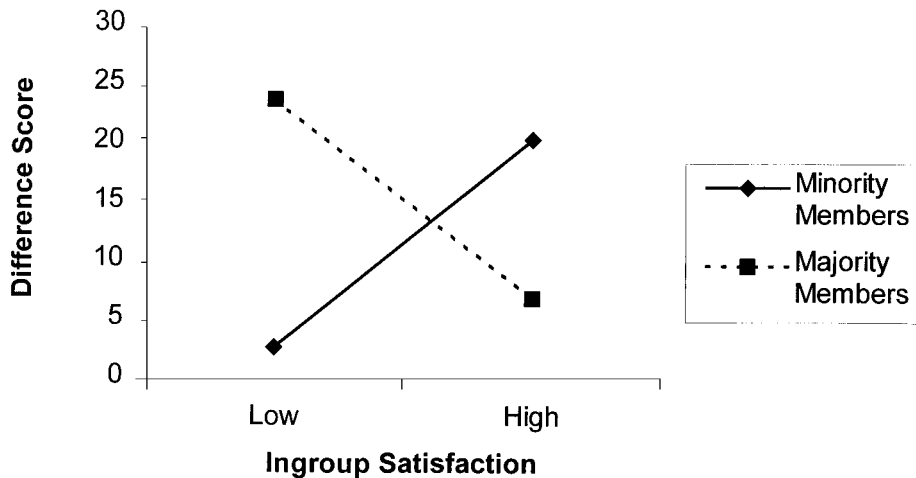


FIG. 2. Allocation difference scores as a function of in-group size and group satisfaction: Experiment 2.

faction scores, were submitted to ANOVA, with in-group size as the between-participants comparison. Condition means for each of these measures are provided in Table 2.

In general, the effects of in-group size on identification were similar to the effects obtained in Experiment 1 for the individuals induced to identify with their group. Minorities reported higher identification than majorities, although this difference was not significant, $F(1, 76) = 2.28, p = .14, \eta^2 = .03$. More important, minorities reported greater satisfaction with their group than majorities, and this difference was significant, $F(1, 76) = 4.64, p = .03, \eta^2 = .06$. Finally, the difference score on the allocation measure showed no significant effect of group size, $F(1, 76) = .19, p = .66, \eta^2 = .00$. As found in Experiment 1, minority and majority members who were induced to identify with their group reported equivalent levels of in-group bias. For both groups, this bias was significantly different from zero, $t_s > 2.87, p_s < .01, d_s > .96$.

In-Group Size and In-Group Satisfaction as Predictors of Discrimination

Central to our hypotheses about the processes underlying minority and majority group discrimination is the differential role of in-group satisfaction as a motivator for intergroup bias. To test the differential predictions, a hierarchical multiple-regression analysis was conducted in which in-group bias was predicted from in-group size, identification, in-group satisfaction, and the two-way interactions.

So that it could be included in the regression analysis, the conditions of in-group size were dummy coded: the minority condition was assigned a value of zero, and the majority condition was assigned a value of 1.⁴ Following standard

⁴ Dummy coding was opted over effects coding because it provides more readily interpretable effects when the regression analysis includes only one categorical variable (Aiken & West, 1991).

rules for interaction analysis in multiple regression (Cohen & Cohen, 1983), in-group bias was regressed onto the main effect variables of in-group size, social identification, and group satisfaction predictors in the first step of a hierarchical regression. In the second step of the hierarchical regression, two-way interaction terms were entered into the analysis as predictors of in-group bias. These interaction terms were the product of each pair of variables: in-group size and identification, in-group size and satisfaction, and identification and satisfaction. These two-way interactions were included as higher order covariates, as recommended by Hull, Tedlie, and Lehn (1992).

Analysis revealed a significant two-way interaction between in-group size and group satisfaction, $t(71) = -2.17, p = .03, sr^2 = .06$. To depict this interaction, predicted means were plotted at low and high levels of satisfaction (i.e., at satisfaction values 1 standard deviation below and above the mean, respectively; Aiken & West, 1991). The means are presented in Fig. 2. Simple slope analysis (Aiken & West, 1991) indicated that minority members were more likely to discriminate as in-group satisfaction increased ($\beta = .37, p = .08, sr^2 = .04$). By contrast, majority members were more likely to discriminate as in-group satisfaction decreased ($\beta = -.33, p = .16, sr^2 = .03$).⁵ The

⁵ Given that this study was conducted with identification induction held constant, the relatively restricted range of variability on the identification measure did not permit analysis of the three-way interaction between in-group size, identification, and satisfaction (in fact, analysis of the three-way was not significant). Nonetheless, the analysis did reveal a significant interaction between identification and satisfaction, $t(71) = -2.18, p = .03, sr^2 = .06$, indicating that the influence of satisfaction on in-group bias was moderated by identification to some extent. Tests for this interaction within the two conditions revealed that the interaction was statistically reliable for majority members, $t(33) = -2.03, p = .05, sr^2 = .10$, but not reliable for minority members, $t(37) = -1.02, p = .37, sr^2 = .03$. It appears that the dissatisfaction expressed by majority members influences discrimination, contingent upon their level of identification with

significant interaction indicates that the satisfaction slope for minority group members is significantly different from the slope for majority members.

DISCUSSION⁷

Results of the regression analysis in Experiment 2 indicated that, controlling for identification, in-group satisfaction predicts discrimination for both minority and majority group members, but the direction of the relationship between in-group satisfaction and discrimination differs depending on the size of the in-group. Minority discrimination increases as in-group satisfaction increases; majority discrimination increases as in-group satisfaction decreases (or dissatisfaction increases). These data are inconsistent with the collective self-esteem version of the self-esteem hypothesis (Long & Spears, 1997; Rubin & Hewstone, 1998) as an explanation for minority group discrimination, but are consistent with our theoretical analysis.⁶ Since large, relatively undefined groups are presumed to be nonoptimal identities, dissatisfaction with assignment to a majority group should be associated with discrimination. Intergroup discrimination provides an opportunity to increase the differentiation between in-group and out-group and increase perceived distinctiveness. Small, optimally distinct groups, however, are presumed to be satisfied with their identity, and satisfaction with assignment should be associated with discrimination because intergroup discrimination provides an opportunity to affirm a positive identity.⁷

their group. Simple slope analysis indicates support for this prediction. When identification was low, majority member satisfaction did not predict in-group bias ($\beta = -.01, p = .96, sr^2 = .00$). When identification was high, however, majority member satisfaction negatively predicted discrimination ($\beta = -.53, p = .05, sr^2 = .12$). Thus, when the majority members are disengaged from their identity, dissatisfaction is unrelated to discrimination. However, if identification with the group is engaged, then members of majority groups appear motivated to increase the distinctiveness of their in-group to the extent that they are dissatisfied with the group as is.

⁶ To be clear, we believe this study tested the *specific-state-social* version of the self-esteem hypothesis proposed by Rubin and Hewstone (1998). The scale was framed to refer to the specific estimator group into which participants were classified, thus meeting the *specific* and *social* criteria of the collective self-esteem hypothesis. In addition, because participants were placed into minimal groups, there is no possible "trait" self-esteem to be associated with this specific group. Consequently, this scale must measure *state* collective self-esteem.

⁷ One might ask why it was that we believed that majority members who were satisfied and identified with their group would not affirm their identity. We base this on the initial mean difference that exists between majority and minority groups on group satisfaction. As indicated in Table 2, minorities are more satisfied with their group than are majority members. This difference in mean satisfaction indicates that majority members who report relatively high in-group satisfaction actually are reporting lower satisfaction than minorities who report relatively high satisfaction.

Discrimination Motives

The different directions of relationship between relative satisfaction with the in-group and level of discrimination for majority and minority groups is consistent with the idea that the same degree of discrimination reflects different underlying motives as a function of group size. Again, however, this experiment does not provide direct evidence that motives to affirm or differentiate are actually operating. In the two experiments reported thus far, zero-sum allocation matrices were used as a global measure of in-group bias that basically pits in-group favoritism against a nondiscrimination (fairness) motive. Zero-sum matrices of this type provide a general measure of bias but are not constructed to distinguish between two kinds of discrimination motives: maximum in-group profit and maximum differentiation.

Maximum in-group profit (Tajfel et al., 1971) refers to the motivation to treat in-group members as favorably as possible, regardless of outcomes to the out-group. Maximum differentiation refers to the motivation to treat in-group members *more* favorably than out-group members, that is, to make choices that give in-group members higher outcomes compared to those of the out-group. Both motives are discrimination motives in that they exhibit favoritism for the in-group, but they differ in their focus: Maximum differentiation focuses on the difference between in-group and out-group members, whereas maximum in-group profit focuses only on the in-group. When allocations are zero-sum, in-group bias scores can reflect either motive because the choices are arrayed such that increasing the amount the in-group also decreases the outcome to the out-group (hence increasing difference). Thus, the same in-group/out-group difference score can be based on different underlying motives.

The different pattern of correlation between in-group satisfaction and allocation bias obtained for minorities and majorities in Experiment 2 suggests that discrimination may have been serving different purposes for the two groups. Based on optimal distinctiveness theory, we hypothesize that the discriminatory choices made by majority members were motivated primarily by maximum differentiation, in the service of increasing the distinctiveness of their in-group. Since minority group membership is already closer to optimal distinctiveness, we assume that discrimination by minorities is primarily an expression of in-group identification, motivated by concern for affirming their in-group identity. In this case, discrimination is more likely to reflect a desire to maximize in-group profit. To test these assumptions about underlying motives, a third experiment was conducted using allocation matrices that can differentiate between motives for maximizing in-group profit or maximizing differentiation in favor of the in-group.

EXPERIMENT 3

The primary goal of the third experiment was to examine the discrimination motives of minority and majority members. A secondary goal was an attempt to replicate effects on group identification and group satisfaction found in Experiments 1 and 2.

We predicted that when allocations maximizing in-group profit and maximizing differentiation were pitted against each other in an allocation matrix, members of majority social categories would consistently choose in the direction of maximizing differentiation, regardless of level of in-group profit. Members of minority social categories, on the other hand, were predicted to be more influenced by maximizing in-group profit, although this motivation would be constrained somewhat by the structure of the allocation matrix.⁸ In pure form, the motive to maximize in-group profit means that group members are willing to give the highest allocation possible to their group, even if that means giving more to the out-group. At this extreme, however, maximum in-group profit could also be perceived as out-group favoritism. Thus, we expected that minority members would exhibit maximum in-group profit, but only to the extent that they could give higher amounts to the in-group without giving even larger amounts to the out-group. In effect, minority members were predicted to exhibit evidence of both maximum in-group profit and maximum differentiation.

METHOD

Participants

One hundred two students (58% women, 63% European American) at the Ohio State University participated in the study. Five individuals were dropped for incorrectly completing the materials, leaving an $N = 97$. Participants received course credit for their involvement.

Procedure

Individuals were randomly classified into a minority or majority group within each session. An additional control factor was also added to the design of the present study. In-group size was crossed with category label (underestimator vs overestimator) in order to be sure that effects of relative in-group size could be replicated independent of confounds with category label. Thus, Experiment 3 con-

sisted of a 2 (Ingroup Size: Minority vs Majority) \times 2 (Category Label: Underestimator vs Overestimator) between-participants design.

As in the preceding experiments, participants first completed a dot estimation task used to classify them into minimal groups and, following this task, received feedback about their category membership and the size of their in-group. Participants then completed the high induction version of the Lifestyles Questionnaire, used to induce individuals to identify with their respective groups. Individuals then completed identification and satisfaction scales used in Experiment 2 ($\alpha_{\text{identification}} = .85$; $\alpha_{\text{satisfaction}} = .79$). Finally, they completed four Tajfel allocation matrices, selected to determine the kinds of discrimination motive exhibited by participants in the different group size conditions.⁹

After completing the matrices, participants completed a manipulation check on the category to which they had been assigned (i.e., overestimator or underestimator) and the relative size of that group, and they were then debriefed.

Tajfel Allocation Matrices

Instead of the zero-sum matrices used in previous studies, different types of Tajfel allocation matrices were used to assess the strength of different discrimination motives (Tajfel et al., 1971). The Tajfel allocation matrices contain a set of preselected allocations that vary in terms of degree of in-group or out-group favoritism, fairness, or cooperation. For our present purposes, two kinds of Tajfel matrices were chosen. Matrices type A and B (Brewer, 1979; as reported in Tajfel et al., 1971, Experiment 2) were used, which provide the opportunity to distinguish between maximum in-group profit and maximum differentiation and to distinguish these two motives from a third motive, maximum joint profit. (Maximum joint profit refers to the motivation to treat both the in-group and out-group as favorably as possible, nondiscriminantly. This motive indicates intergroup cooperation, where the individual is attempting to maximize outcomes for both groups combined.)

The *Matrix A* version (see Fig. 3) pits the maximum joint profit motive against in-group bias (this matrix cannot distinguish between maximum differentiation and maximum in-group profit). Participants must choose between allocations that give more to the in-group and allocations that give a larger overall amount (in-group allocation + out-group

⁸ The layout of the Tajfel allocation matrix choices makes comparative information about in-group and out-group outcomes almost impossible to ignore. Choices on these matrices have been found to exhibit a significant "pull" toward maximizing differentiation even when the incentive for maximizing in-group profit has been explicitly manipulated (Brewer & Silver, 1978; Turner, Brown, & Tajfel, 1979).

⁹ Tajfel matrices were used in the present experiment rather than multiple alternative matrices (Bornstein et al., 1983) because we believed that the different discrimination motives are not mutually exclusive. Our interest was in the difference in *degree* to which members of majority and minority groups exhibited maximizing differentiation and maximizing in-group profit. Based on how pull scores are calculated for the Tajfel matrices, it is possible to exhibit both motives to a moderate degree (i.e., on both pull scores) or one motive to an extreme degree. The pull scores only oppose each other at the extremes.

Matrix Type A

These are the potential rewards for:

<u>Ingroup Member</u>	19	18	17	16	15	14	13	12	11	10	9	8	7
<u>Outgroup Member</u>	1	3	5	7	9	11	13	15	17	19	21	23	25

Matrix Type B

These are the potential rewards for:

<u>Ingroup Member</u>	7	8	9	10	11	12	13	14	15	16	17	18	19
<u>Outgroup Member</u>	1	3	5	7	9	11	13	15	17	19	21	23	25

FIG. 3. Allocation matrix Types A and B (taken from Tajfel et al., 1971, Experiment 2). The ovals represent hypothetical responses and illustrate how individuals respond to these matrices (by circling one column of numbers).

allocation). Pull scores are calculated to determine to what extent each motive is present. Explanations for how to calculate these pull scores, and a discussion of their meaning, are provided in the literature (Bourhis, Sachdev, & Gagnon, 1994; Turner, 1983). This kind of matrix produces two pull scores: one that indicates maximum joint profit (MJP) and the other that indicates in-group bias (MIP/MD).

The *Matrix B* version (see Fig. 3) pits maximum differentiation against the other two motives, maximum joint profit and maximum in-group profit. Participants must choose between allocations that provide a relatively greater amount to the in-group (i.e., maximum differentiation) and allocations that give both a greater combined amount (in-group + out-group) and the largest possible in-group allocation. This kind of matrix produces two pull scores: one that indicates maximum differentiation (MD) and another indicates maximum in-group profit and/or maximum joint profit (MIP/MJP). This second pull score is confounded in that it cannot distinguish between these two motives.

Minority and majority members were expected to exhibit different discrimination motives on matrix B: Majority members were expected to exhibit significant MD pull, but not the MIP/MJP pull score; minority members, however, were expected to exhibit both MD and MIP/MJP. Responses on matrix A, however, were expected to be similar: Members of both groups were predicted to exhibit ingroup bias, but not maximum joint profit. Pull scores from both matrices must be considered together to determine what exactly is the basis for minority discrimination. If, as predicted, minorities exhibited the MIP/MJP pull (on Matrix B), but not the MJP pull (on Matrix A), then the former pull score can be interpreted as intention to maximize in-group profit.

RESULTS

Manipulation Checks

All but one individual correctly reported their estimator category (i.e., underestimator, overestimator), and all but two individuals correctly reported the size of their group. These three individuals were dropped, leaving $N = 94$. To verify that all group members were induced to identify to an equal degree, lifestyles responses were submitted to ANOVA, with in-group size and category label as between-participant factors. As expected, in-group size did not produce a significant difference on Lifestyles responses, $F(1, 89) = 1.63$, $p = .20$, $\eta^2 = .02$. Participants in all conditions responded to the induction to an equal degree (see Table 3).

In-Group Identification and In-Group Satisfaction

It was expected that minority members would be more satisfied than majority members with their group membership. This measure was submitted to an ANOVA. As in

TABLE 3
Condition Means and Standard Deviations on Lifestyles Responses, In-Group Identification, and In-Group Satisfaction: Experiment 3

	Minority in-group	Majority in-group
Lifestyles responses	5.74 (1.63)	5.39 (1.78)
Identification	35.48 (8.36)	32.48 (6.98)
Satisfaction	17.04 (3.46)	15.77 (3.01)
<i>n</i>	50	44

Note. Standard deviations are in parentheses.

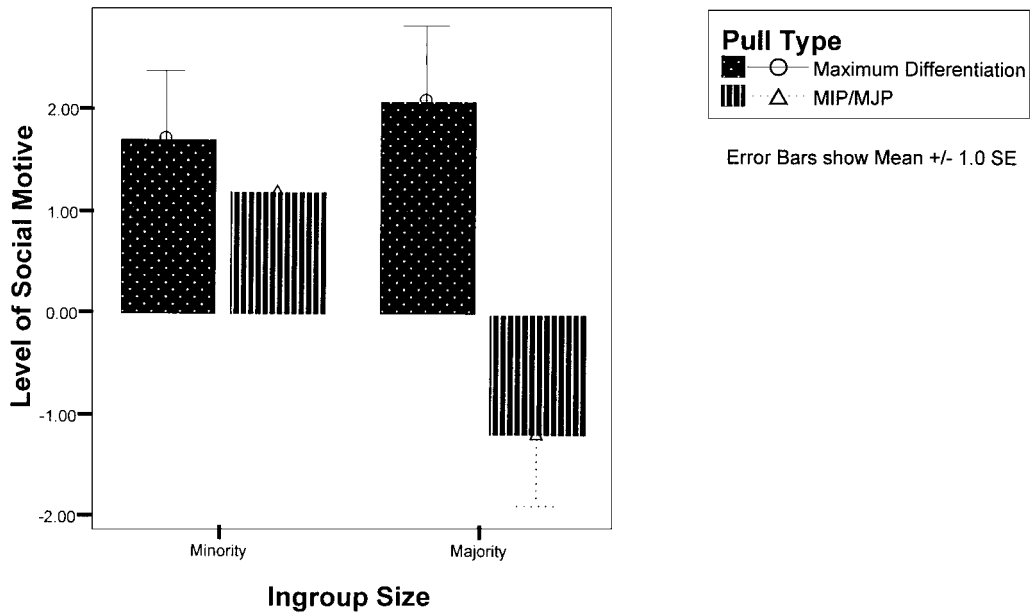


FIG. 4. Means of the maximum differentiation and MIP/MJP pull scores, by in-group size: Experiment 3.

Experiment 2, minorities reported higher in-group satisfaction than majorities, and this difference was significant, $F(1, 89) = 5.09, p = .03, \eta^2 = .05$. (Means are reported in Table 3.) Furthermore, it was expected that minority members would be somewhat more identified than majority members, even after the identity induction. Analysis uncovered a significant main effect of in-group size, $F(1, 90) = 4.38, p = .05, \eta^2 = .05$. Minority group members reported higher identification ($M = 17.04$) with the in-group than did majority members ($M = 15.44$), replicating the differences found in Experiments 1 and 2. Overall, then, analysis revealed that minority members were more satisfied and identified with their group than were majority members, confirming results from the previous studies.¹⁰

Discrimination Motives

The primary goal of this study was to elucidate differences between minority and majority group members in terms of the discrimination motive underlying allocation biases. Minority and majority members were expected to exhibit different motives on matrix B such that majority members would exhibit maximum differentiation and mi-

nority members would exhibit maximum differentiation *and* MIP/MJP. On matrix A, minority and majority members were both expected to exhibit in-group bias (with no pull toward maximum joint profit).

Of primary interest were the matrix B pull scores. Based on the procedure used to calculate them, pull scores (MD and MIP/MJP) could range from -12 to 12 . On the MD pull, positive numbers indicate relative in-group favoritism, and negative numbers indicate relative out-group favoritism (Turner, 1983). On the MIP/MJP pull, positive numbers indicate greater "maximum ingroup profit/maximum joint profit," and negative numbers indicate "minimizing ingroup profit/minimizing joint profit" (Turner, 1983). These two pull scores were submitted to repeated-measures ANOVA, with in-group size and category label as between-participants factors and the pull scores as a two-level within-participants factor. Analysis revealed a main effect on the repeated measures, $F(1, 90) = 7.30, p < .01, \eta^2 = .08$. Individuals were much more likely to exhibit maximum differentiation ($M = 1.89$) than the MIP/MJP pull ($M = .09$). In addition, however, there was an interaction between in-group size and the repeated-measures factor, $F(1, 90) = 4.44, p = .04, \eta^2 = .05$. Means are presented in Fig. 4.

Minority and majority members exhibited no difference on the maximum differentiation pull score, $F(1, 90) = .19, p = .67, \eta^2 = .00$. Both means were significantly different from zero, $ts > 2.62, ps < .05, ds > .75$. As the means indicate, both minority and majority members were more likely to exhibit maximum differentiation than parity. On the MIP/MJP pull, however, minorities significantly differed from majorities, $F(1, 90) = 7.15, p < .01, \eta^2 =$

¹⁰ Analysis of identification and satisfaction scores also revealed significant main effects of category label on in-group satisfaction, $F(1, 90) = 4.16, p = .04, \eta^2 = .04$. Individuals placed into the overestimator category reported greater satisfaction with their group ($M = 17.04$) than those in the underestimator category ($M = 15.85$) and a marginally significantly higher level of in-group identification, $F(1, 90) = 2.93, p = .09, \eta^2 = .03$. However, estimator category label did not interact significantly with in-group size, so all effects reported for the in-group size variable are independent of label.

.07, as expected. Minority members were more likely to exhibit this pull than majority members. In addition, single-sample t tests indicated that minority member pull was significantly different from zero, $t(49) = 2.20$, $p = .03$, $d = .62$, while majority member pull was not significant, $t(43) = -1.68$, $p = .10$, $d = -.51$. Thus, the interaction between pull score and in-group size indicated that minority and majority allocation choices reflect somewhat different underlying motives. Both groups exhibit a significant degree of maximum differentiation, but for minorities this was qualified by a pull toward MIP/MJP.

To determine whether the latter pull indicated maximum joint profit or maximum in-group profit motives, the pull scores from matrix A were submitted to analysis. Pull scores for these matrices also could range from -12 to 12 . On the in-group bias (MD/MIP) pull, positive numbers indicate in-group favoritism and negative numbers indicate out-group favoritism (Turner, 1983). On the MJP pull, positive numbers indicate maximizing joint profit and negative numbers indicate minimizing joint profit (Turner, 1983). On this pull score, it was expected that neither group would exhibit a tendency toward positive MJP.

Results of a two-way ANOVA, with in-group size and category label as between-participants factors, revealed a significant in-group size main effect, $F(1, 90) = 7.75$, $p < .01$, $\eta^2 = .08$, on the MJP pull scores. Majority members exhibited a tendency to *minimize* joint profit ($M = -1.52$, $SD = 4.19$) compared to minority members ($M = .56$, $SD = 2.69$). Only the mean for the majority member sample was significantly different from zero, $t(43) = -2.41$, $p = .02$, $d = -.74$. Analysis of the in-group bias pull score revealed no significant main effect of in-group size. Instead, both minority members ($M = 1.68$, $SD = 3.97$) and majority members ($M = 1.66$, $SD = 4.25$) exhibited in-group bias significantly different from zero, $t_s > 2.50$, $p_s < .05$, $d_s > .79$. As expected, both groups favored their group over the out-group when the matrices did not distinguish MIP from MD.

DISCUSSION

Overall, consideration of the four pull scores indicates that majority members exhibited maximum differentiation and minority members exhibited a combination of maximum differentiation and maximum in-group profit. What these motives indicate can be interpreted within the framework of optimal distinctiveness theory. Pure maximum differentiation means that an individual is primarily concerned with treating an in-group member more favorably than an out-group member, *even if that means the in-group member gets a smaller absolute allocation*. Pure maximum in-group profit means that an individual is primarily concerned with giving an in-group member the largest allocation possible, *even if that means the out-group member will receive more*.

In these pure forms, the maximum differentiation and maximum in-group profit motives are in opposition. The presence of both motives for minority members suggests that they would like to contribute the most they can to their group, but only if the out-group does not receive more. The presence of only maximum differentiation for majority members suggests that they are willing to sacrifice absolute gain in order to increase the difference between their group and another group.

The findings of this experiment converge with what previous research has uncovered with regard to minority and majority responses on the Tajfel allocation matrices (Sachdev & Bourhis, 1984, 1991). The greater "pull" toward relative difference on the part of majority members is clearly inconsistent with the proposition that minorities are more motivated than majorities to compensate for in-group insecurity. Instead, these findings suggest that when majorities *are* motivated to discriminate, discrimination is in the service of improving positive differentiation or distinctiveness of the in-group. The fact that majority and minority group members also differ in their level of satisfaction with the in-group provides further support for the optimal distinctiveness interpretation.

GENERAL DISCUSSION

Altogether, the evidence from the three studies supports derivations from optimal distinctiveness theory as an explanation of why minorities generally discriminate more than majorities. In addition, this research clarified the roles of group satisfaction and identification as predictors of minority and majority discrimination. Instead of feeling threatened, individuals react positively to classification in a minority (as compared to a majority) categorization (Experiments 2 and 3). Group identification was shown to be a relevant antecedent to minority and majority discrimination, but not sufficient as an explanation for the degree of in-group bias (Experiment 1). More central to the bias exhibited by minority and majority members, was group satisfaction, which positively predicted minority in-group bias and negatively predicted majority in-group bias (Experiment 2). Furthermore, this differential satisfaction corresponded to differences in discrimination motives for minority and majority members (Experiment 3).

Challenging the Primacy of Enhancement Motives

Optimal distinctiveness theory offers an explanation for minority in-group identification that does not rely solely on self-enhancement motives. Because of their relative distinctiveness, minority groups satisfy needs for both inclusion and differentiation—identity needs that are presumed by the theory to be independent of the need for self-enhancement. While some researchers argue that enhancement represents the dom-

inant self-motive (Sedikides, 1993; Sedikides & Strube, 1997), we argue that individuals seek distinctive group identities as much as positive group identities. All other things being equal, individuals will prefer group memberships that are both positive and distinctive, but when the two motives are in competition, it is not at all clear that the enhancement motive dominates. Indeed, there is considerable evidence that group identification is stronger among members of distinctive stigmatized social groups than among members of larger, higher status groups (Crocker, Luhtanen, Blaine, & Broadnax, 1994; Simon, Glassner-Bayerl, & Stratenwerth, 1991; Simon, Hastedt, & Aufderheide, 1997).

In one test of the relative impact of enhancement and distinctiveness motives, Brewer et al. (1993) placed participants into groups that differed in size and status and, in addition, manipulated activation of the need for differentiation. In-group identification was assessed by evaluative ratings of the in-group on dimensions unrelated to the status differential. The results of the experiment produced a three-way interaction between in-group size, status, and the differentiation manipulation on in-group valuation. Under conditions when no need for differentiation was aroused, in-group enhancement was predicted by both size and status, with participants classified in a low-status minority category showing the greatest evidence of enhancement-motivated in-group positivity. When participants' need for differentiation was aroused, however, in-group valuation was entirely predicted by group size: Minority members exhibited in-group favoritism while majority members did not, regardless of the status of the group. The results of the present experiments complement the findings of Brewer et al. by indicating that minority group size *per se* engages in-group identification independent of any need for self-enhancement. This identification precedes, rather than follows, differences in discrimination.

ALTERNATIVE MOTIVATIONAL MODELS

This article argues that optimal distinctiveness theory best explains when and why minority and majority group members discriminate. This research also speaks more generally to the "self-esteem hypothesis" of intergroup discrimination, a hypothesis with an uncertain history. The self-esteem hypothesis refers to the general idea that intergroup discrimination is motivated by desire to enhance or restore individual self-esteem. Although it has been claimed to be derived directly from social identity theory (a claim made by Abrams & Hogg, 1988), among social identity theorists the hypothesis appears to be without an advocate. Turner (1999) explicitly rejects the self-esteem restoration hypothesis as a principle of social identity. Abrams and Hogg (1988) themselves criticized the logic and empirical evidence for the self-esteem hypothesis and proposed an alternative motivational model of in-group bias in its place

(Hogg & Abrams, 1993). Yet, despite the theory's lack of representation, a recent review (Rubin & Hewstone, 1998) demonstrated that the self-esteem hypothesis is firmly entrenched in the social psychological literature on intergroup relations. The present studies add to the growing documentation (e.g., Aberson, Healy, & Romero, 2000; Crocker & Luhtanen, 1990; Hogg & Turner, 1987; Seta & Seta, 1992, 1996; Sidanius et al., 1994; Smith & Tyler, 1997) that discrimination is not entirely motivated by low or threatened self-esteem and, if anything, is a reflection of *positive* collective self-esteem.

The evidence also addresses what is often considered another social identity explanation for differences in minority and majority group discrimination (Sachdev & Bourhis, 1984, 1991; Simon, 1992; Simon & Brown, 1987).¹¹ This perspective argues that minority group membership constitutes an "insecure identity" relative to the secure identity provided by majority group membership and it is this insecurity that prompts minorities to discriminate in order to restore a more positive collective identity. Minority group members reported being more satisfied with their group than majority group members. In addition, satisfaction was found to be positively related to discrimination on the part of members of a minority group, but negatively related for majority group members, suggesting that this alternative social identity account also cannot explain why minority group members discriminate.

Given the theoretical differences, social identity theory and optimal distinctiveness theory complement each other, especially with regard to the basis for majority group member discrimination. A central theoretical principle of social identity theory is that "when social identity is unsatisfactory, individuals will strive either to leave their existing group and join some more positively distinct group and/or to make their existing group more *positively distinct*" (p. 16; emphasis added; Tajfel & Turner, 1986). Similarly, optimal distinctiveness theory argues that, given the nondistinct status of the majority group, members of majority groups will first try to disengage from their group, but given that they are highly engaged with their group, they will seek

¹¹ Some of these researchers have argued that Tajfel himself (1981) claims that numerical minorities are more disadvantaged (or less secure) than numerical majorities. To be clear, Tajfel (1981) defined minority groups according to their disadvantaged status, not group size, and even argued that some numerical majorities (Blacks in South Africa) are considered "minorities." Specifically, Tajfel adopted Wagley and Harris' (1958) perspective on minorities: "The principle guiding the definition selected by Wagley and Harris (and many other social scientists) is not to be found in numbers but in the social *position* of the groups to which they refer as minorities. This is a sensible approach to the problem" (p. 310; original emphasis included). To clarify, while there are circumstances under which numerical minority membership will be less valued than numerical majority membership (see end of General Discussion), such an hypothesis does not appear to be based on Henri Tajfel's (1981) perspective of minority groups.

positive distinctiveness. Thus, although the presumed underlying motivation (positive evaluation versus differentiation) is somewhat different, the two theories generate converging predictions under some conditions.

THE CASE FOR MULTIPLE MOTIVES

The original goal of the three studies reported here was to examine why members of minority groups often display more in-group bias and discrimination than members of majority groups. The results supported the idea that affirmation of a positive social identity provides a better account for minority group bias than the need to restore threatened self-esteem. Further, the absence of discrimination among members of majority groups seems to reflect low levels of in-group identification rather than the presence of a secure positive social identity.

Although we have emphasized that our findings implicate motives other than self-enhancement underlying in-group bias and intergroup discrimination, it is also clear from our results that some level of self-involvement with the in-group category is a necessary precondition for eliciting in-group bias. When levels of group identification are low (as with large majority groups in a minimal group context), no motivations for discrimination are activated. However, when identification is sufficiently engaged, both minority and majority group members exhibit in-group favoritism on a zero-sum allocation measure. There was evidence, however, that discrimination is driven by different underlying motives for individuals identified with minority versus majority groups. Contrary to the premises of the self-esteem restoration hypothesis, it is discrimination by majorities (not minorities) that appears to be motivated by a need to restore or achieve positive distinctiveness for the in-group.

This difference in motivational basis implies that the locus of in-group bias (Brewer, 1979) may be different for the two kinds of group members. For members of minority groups, discrimination may reflect a desire to benefit the in-group, without regard to outcomes for the out-group. For majority group members, however, the goal may not be to benefit the in-group *per se* but to increase the difference between positive outcomes for the in-group compared to the out-group. Conceivably, these two different types of in-group bias may have very different implications for intergroup behavior and the prospects for reducing social discrimination.

MINORITIES IN THE "REAL WORLD"

As indicated at the outset of this article, we are interested here in the effects of in-group size *per se*, independent of other types of status differences that may exist between social groups. In the laboratory it is possible to manipulate

information about relative group size without (explicitly) conveying any evaluative implications of this size difference. In the real world, however, minority size is frequently (though not always) associated with disadvantages in status, resources, culture, and power within the overall societal context. In that case, the motives for positive social identity and for distinctiveness can be seen as pulling in opposite directions as determinants of in-group identification and satisfaction. Nonetheless, members of minority groups often exhibit high levels of in-group identification and positive collective self-esteem (e.g., Crocker et al., 1994). In this case, intergroup discrimination may serve in-group protective functions (Branscombe, Schmitt, & Harvey, 1999) as well as or in addition to identity affirmation. The point to be made is that there is no simple one-to-one relationship between in-group identification and intergroup discrimination. Once group identification has been engaged, in-group biases may serve functions of in-group enhancement, protection, identity affirmation, or differentiation as well as self-interest, depending on the context of intergroup relationships that exists at the time.

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