Psychological Bulletin
1979, Vol. 86, No. 2, 307-324

In-Group Bias in the Minimal Intergroup Situation: A Cognitive–Motivational Analysis

Marilynn B. Brewer
University of California, Santa Barbara

Experimental research on intergroup discrimination in favor of one's own group is reviewed in terms of the basis of differentiation between in-group and out-group and in terms of the response measure on which in-group bias is assessed. Results of the research reviewed suggest that (a) factors such as intergroup competition, similarity, and status differentials affect in-group bias indirectly by influencing the salience of distinctions between in-group and out-group, (b) the degree of intergroup differentiation on a particular response dimension is a joint function of the relevance of intergroup distinctions and the favorableness of the in-group's position on that dimension, and (c) the enhancement of in-group bias is more related to increased favoritism toward in-group members than to increased hostility toward out-group members. The implications of these results for positive applications of group identification are discussed.

In 1906, sociologist William Sumner articulated a functionalist approach to the nature of intergroup attitudes in his exposition of the concept of ethnocentrism. The differentiation of peoples into distinct ethnic groups originates, according to Sumner, in context of the "conditions of the struggle for existence." At the individual level, the psychological consequences of this differentiation both reflect and sustain the basic state of conflict between the in-group (or "we-group") and out-groups (or "others-groups"):

> The insiders in a we-group are in a relation of peace, order, law, government, and industry, to each other. Their relation to all outsiders, or others-groups, is one of war and plunder. . . . Sentiments are produced to correspond. Loyalty to the group, sacrifice for it, hatred and contempt for outsiders, brotherhood within, warlikeness without—all grow together, common products of the same situation. (Sumner, 1906, p. 12)

From this perspective, then, attitudinal and perceptual biases in favor of members of one's own group over members of other groups are the product of intergroup competition, serving the dual functions of preserving in-group solidarity and justifying exploitation of out-groups. Presumably also, the greater the intensity of competitive interdependence between groups, the more attraction within the in-group and corresponding hostility toward the other group, whereas low levels of interdependence between groups should be associated with relatively little contrast in attitudes toward members of the in-group and out-group (LeVine & Campbell, 1972).

The functionalist concept of intergroup relations is epitomized in the ambitious field experiment undertaken by Sherif and his colleagues in the context of a boys' summer camp (Sherif, Harvey, White, Hood, & Sherif, 1961). In the fully implemented version of the study, conducted in 1954, two groups of 11-year-old boys were formed in isolation from each other for a period of 8 days before being brought into contact under conditions designed to maximize competition and mutual frustration. The resulting intergroup hostility was documented with anecdotal evidence based on observation of overt behavior, supplemented by controlled measures of sociometric preferences, evaluative trait ratings, and estimates of performance by group members during a competitive task. On each of

Requests for reprints should be sent to Marilynn B. Brewer, Department of Psychology, University of California, Santa Barbara, California 93106.

 0033-2909/79/8602-0307$00.75

these indicators, campers revealed consistent biases favoring members of their own group over members of the competing group. Reductions in bias were not achieved until the nature of the functional relationship between the groups was altered by systematic introduction of "superordinate goals" requiring cooperative interaction.

The Sherif et al. field study is essentially a demonstration rather than a test of the functionalist view of intergroup relations, since its design took for granted that interaction under competitive conditions was prerequisite to the initial development of in-group bias and intergroup hostility. No systematic assessment of attitudes toward in-group and out-group members was made before the intergroup competition phase of the experiment (although changes were documented after competitive pressures had been removed). However, some anecdotal evidence from the 1954 study was provided that indicates that negative reactions to the out-group were present prior to the introduction of structured competition. At the close of the first phase of the experiment, the two groups were first made aware of each other's existence, and at that time the mere knowledge of the presence of the other group was sufficient to generate name-calling and other derogatory commentary from each group directed toward the other (Sherif et al., 1961, p. 95).

The significance of these initial-contact effects has been realized only recently as the phenomena associated with intergroup perception have been reexamined in light of more general cognitive processes by which human beings structure, simplify, and give meaning to their physical and social environment (Hamilton, 1976; Hensley & Duval, 1976; Tajfel, 1969, 1970). From this perspective, any categorization rule that provides a basis for classifying an individual as belonging to one social grouping as distinct from another can be sufficient to produce differentiation of attitudes toward the two groups, in the absence of any initial competitive interdependence. The present review focuses on research directed toward identifying the minimal conditions necessary to generate in-group–out-group discrimination.

Defining the Minimal Intergroup Situation

A number of laboratory studies have attempted to demonstrate the presence of in-group favoritism under conditions in which the independence of outcomes for in-group and out-group is explicitly controlled. Among the earliest of such demonstrations was a study reported by Ferguson and Kelley (1964) in which two groups of three to six members each worked independently on three tasks. Following the interaction group members were asked to rate the quality of the products of both groups separately on a 9-point scale. Mean ratings obtained were significantly biased in the direction of more positive evaluation of subjects' own group's product than of the other group's product, irrespective of any objective differences in output between the two groups.

Subjects in the Ferguson and Kelley experiment had an extensive period of familiarization and personal investment in the outcome, which could have influenced their preference for own-group products. A clearer demonstration of in-group bias is obtained when subjects are asked to evaluate qualities associated with their own and other groups in the absence of any interaction or personal influence on the qualities being rated, as was the case in an experiment by Doise et al. (1972). Subjects in that experiment were divided into "X-type" and "Y-type" groups and were told that the division was based on photograph preferences (although group assignment was actually determined randomly). In the control condition of the experiment, subjects were led to anticipate no further interaction with members of either group, but were asked to describe the other members of their own group and the members of the other group on a series of 19 evaluative trait ratings. Despite the minimal basis for distinction between the two groups, a significant difference in mean favorableness of ratings was obtained in the direction of more positive ratings of members of the subjects' own group. However, in an earlier experiment, Rabbie and Horwitz (1969) found that in a control condition in which subjects were arbitrarily divided into groups labeled *blue* or *green* (with no rationale or further interaction), there were no

significant differences in evaluative trait ratings of individuals in the subjects' own group as opposed to individuals in the other group.

It appears, then, that there are lower limits to the effects of grouping on interpersonal perception but that in-group bias does occur in the absence of explicit competitive interdependence between groups. The absence of implicit competitive orientation in most of these studies, however, is difficult to establish. Indeed, Rabbie and Wilkens (1971) reported that their attempt to create coacting groups under *no-competition* instructional conditions resulted in ratings of perceived competitiveness that were equal to those obtained under explicit *competition* instructions. As Turner (1975) has suggested, the effect of categorization into groups may be mediated by an inherent competition for "positive social identity." Relative to the earlier view of the role of competition in intergroup attitudes, however, this hypothesis reverses the causal ordering in that competition is generated by the differentiation between groups rather than vice versa.

The generation of competitive orientation as a function of in-group–out-group distinctions, in the absence of any functional conflict of interests, is perhaps best illustrated with the paradigm originated by Tajfel and his colleagues for studying intergroup behavior (Tajfel, 1970; Tajfel, Billig, Bundy, & Flament, 1971). The research setting was designed to meet the following criteria for "minimal differentiation" (Tajfel et al., 1971, pp. 153–154): (a) no face-to-face interaction among subjects, within or between groups, (b) anonymity of group membership, (c) absence of any instrumental link between the basis for intergroup categorization and the response measure, and (d) a response measure involving real and significant choices but of no direct utilitarian value to the subject. Following these criteria, subjects in the Tajfel experiments are divided into two groups based supposedly on their responses to an irrelevant judgmental or preference test. After subjects are informed of their own group membership (but in the absence of any contact with or knowledge of other group members), they are given a choice task that involves allocating money between two other subjects in the same experiment. The identity of the other subjects is indicated only by an arbitrary identification number and a label specifying group membership, which can be varied to be the same as that of the subject or to indicate a member of the other group.

The types of choice matrices provided in the Tajfel experiments are illustrated in Table 1, for the case in which one target person is a member of the subject's own group and the other a member of the out-group. Within each matrix, each column represents an alternative allocation of points (worth some specified fractional amount of money) distributed between the two target persons, and the subject is to choose one of the alternatives as the distribution to be made. Matrices are constructed to represent a number of different possible distribution rules that could be applied, including equality (choosing the alternative that comes closest to giving each person the same number of points), maximizing joint outcome (choosing the alternative for which the total number of points is highest), or in-group favoritism (choosing the alternative that affords the in-group member more than the out-group member). For instance, Matrix A in Table 1 pits equality (choices at the middle of the series) against favoritism (choices toward the extreme right), whereas Matrix B varies favoritism (choices at the left), equality (midpoint choices), and joint outcomes (choices at the right).

Across a series of studies that used this allocation task (Billig & Tajfel, 1973; Tajfel & Billig, 1974; Tajfel et al., 1971), Tajfel and his colleagues have found that competitive choices favoring the in-group member tend to dominate over alternative available choice strategies. However, the matrices used in these studies have not been systematically varied to compare favoritism with all possible choice combinations. In particular, choice alternatives that maximize relative gain (i.e., the choice that maximizes the difference between in-group and out-group points in favor of the in-group member) have usually been confounded with alternatives that maximize absolute gain (i.e., the same choice maximizes the number of points that can be provided to the in-group member alone; cf. Matrices A and B in Table 1). Thus, the task structure

Table 1
Multiple-Choice Allocation Matrices[a]

Matrix	Payoffs for members of in-group and out-group													
A														
In-group	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Out-group	14	13	12	11	10	9	8	7	6	5	4	3	2	1
B														
In-group	19	18	17	16	15	14	13	12	11	10	9	8	7	
Out-group	1	3	5	7	9	11	13	15	17	19	21	23	25	
C														
In-group	7	8	9	10	11	12	13	14	15	16	17	18	19	
Out-group	1	3	5	7	9	11	13	15	17	19	21	23	25	

[a] Adapted from Tajfel, Billig, Bundy, and Flament (1971).

itself may have dictated a competitive strategy, in that gain for the in-group could be achieved only at cost to the out-group member. Only one matrix format (Matrix C in Table 1) has been used in which the alternative that maximizes the in-group member's outcome is different from the relative gain choice, and in this case the former is confounded with maximizing joint gain and maximizing the difference in favor of the out-group member.

To test the generality of preference for outcomes that maximize the competitive advantage to the in-group under forced-choice conditions, Brewer and Silver (1978) constructed a series of two-choice matrices to represent all possible pairings of the four alternative distribution rules of interest—equality, joint gain, relative gain, and absolute (in-group) gain (cf. MacCrimmon & Messick, 1976; McClintock, Messick, Kuhlman, & Campos, 1973). The matrices they used are reproduced in Table 2.[1] For each pair of two-choice matrices, the distribution rules that are confounded in the first matrix of the pair are opposed in the second matrix. Thus, assuming consistency of choice preferences across matrices, the pattern of choices for the two matrices in each pair combined discriminates perfectly among the four distribution rules, as indicated by the scoring key associated with each matrix pair in Table 2. Using this forced-choice format, Brewer and Silver found that a majority of subjects who had been divided into groups following an "aesthetic preference" test selected point distributions that maximized relative gain in favor of the in-group over choices that maximized absolute in-group gain or other alternatives. These results confirm that subjects treat in-group–out-group outcomes as competitively interdependent even when such an orientation is not required by the nature of available alternatives.

Sources of Variation in Bias

The research paradigms provided by Sherif et al. (1961) and by Tajfel et al. (1971) represent two extremes of the conditions of intergroup differentiation under which the occurrence of in-group bias may be studied. The Sherif field studies created a high degree of interaction and cooperative interdependence within groups combined with explicit competitive interdependence between groups, whereas the Tajfel laboratory studies involved minimal intragroup relationships and no predetermined functional interdependence between groups. Both types of research yield evidence of the presence of in-group favoritism, but results are not directly comparable for purposes of assessing variations in extent or intensity of such bias. Most of the experimental studies undertaken in this area since 1960 can be viewed as attempts to determine the contribution to in-group bias of various settings in

[1] In the task booklets actually used in the Brewer and Silver (1978) study, the matrices from these pairs were randomly intermixed in order of presentation.

between the extremes represented by the Sherif and Tajfel paradigms.

Table 3 provides a two-way classification of experimental studies published since 1960, in which at least one aspect of the conditions of intergroup differentiation has been systematically varied. Along with a classification of the major independent variables that have been manipulated, the studies listed in Table 3 are categorized according to which dependent variables were assessed of the three most widely used types of measures of in-group bias: (a) subjective ratings of individual group members or of the group membership as a whole on a series of evaluative trait scales, (b) ratings of the quality of group process (e.g., cohesiveness and cooperative atmosphere) or product, and (c) behavioral measures involving resource distribution decisions (e.g., Prisoner's Dilemma Game choices or the Tajfel allocation task). Studies that manipulated more than one independent variable or that included more than one dependent measure are multiply listed in Table 3.

Table 2
Forced-Choice Allocation Matrices[a]

Matrix pair	Payoff 0	Payoff 1	Scoring key
A1			
In-group member	7	8	0, 0: Equality
Out-group member	9	4	0, 1: Joint gain
A2			1, 0: Relative gain
In-group member	7	8	1, 1: In-group gain
Out-group member	9	12	
B1			
In-group member	6	7	0, 0: Joint gain
Out-group member	8	3	0, 1: Equality
B2			1, 0: In-group gain
In-group member	6	5	1, 1: Relative gain
Out-group member	8	4	
C1			
In-group member	6	7	0, 0: Equality
Out-group member	4	10	0, 1: Relative gain
C2			1, 0: Joint gain
In-group member	6	7	1, 1: In-group gain
Out-group member	4	1	
D1			
In-group member	7	9	0, 0: Relative gain
Out-group member	5	12	0, 1: Equality
D2			1, 0: In-group gain
In-group member	7	6	1, 1: Joint gain
Out-group member	5	7	

[a] Adapted from Brewer and Silver (1978).

Actual or Anticipated Competition

A number of the studies already reviewed indicated that a competitive reward structure is not a necessary precondition for obtaining significant in-group bias, but whether bias is increased by the presence of explicit conflict of interest between groups remains in question. The early laboratory studies of in-group bias, undertaken in the context of management training groups (Bass & Dunteman, 1963; Blake & Mouton, 1961), compared evaluations of the in-group obtained before and after introduction of a problem-solving competition against one or more other groups and reported consistent increases in positive self-evaluations during the intergroup competition phase.

In a more systematically controlled study of the effects of anticipated and actual competition, Rabbie and Wilkens (1971) divided subjects arbitrarily into pairs of three-person groups and then led both groups either to expect no further interaction or to expect to engage in an interactive task either in competition with the other group or independent of the other group (no competition). (Subjects who initially anticipated no interaction were later placed in the *competition* or *no-competition* conditions.) Ratings of own- and other-group members on six evaluative traits were then obtained from each subject prior to the interaction phase of the experiment and were again obtained from subjects in the competition and no-competition conditions after the interactive task. Before interaction, subjects who anticipated the task gave ratings of in-group members that were significantly higher than those obtained from subjects not expecting interaction, but subjects in all conditions showed equally significant bias in the difference between in-group and out-group ratings. Following interaction, the degree of bias in favor of own-group members increased significantly for subjects in both the competition and no-competition settings (although ratings of group products showed no signifi-

Table 3
Summary of Studies That Varied Conditions of Intergroup Differentiation

Experimental condition	Bias measure used		
	Evaluative trait rating	Process/product evaluation	Behavioral choices
Competition/ noncompetition	Brewer & Silver (1978) Doise et al. (1972) Goldman, Stockbauer, & McAuliffe (1977) Kahn & Ryen (1972) Rabbie & Wilkens (1971) Ryen & Kahn (1975) Worchel, Andreoli, & Folger (1977)	Bass & Dunteman (1963) Blake & Mouton (1961) Janssens & Nuttin (1976) Rabbie & Wilkens (1971) Rabbie, Benoist, Oosterbaan, & Visser (1974)	Brewer & Silver (1978) Doise et al. (1972)
Group outcome (success/failure)	Kahn & Ryen (1972) Rabbie & Horwitz (1969) Ryen & Kahn (1975) Wilson & Miller (1961)	Bass & Dunteman (1963) Blake & Mouton (1961) Worchel, Lind, & Kaufman (1975)	Branthwaite & Jones (1975)
Out-group similarity	Brewer & Silver (1978) Hensley & Duval (1976)		Allen & Wilder (1975) Billig & Tajfel (1973) Brewer & Silver (1978) Dion (1973) Wilson & Kayatani (1968)
Categorization salience	Dion & Earn (1975) Doise & Sinclair (1973) Gerard & Hoyt (1974) McKillip, Dimiceli, & Luebke (1977) Stephenson, Skinner, & Brotherton (1976)	Dustin & Davis (1970) Gerard & Hoyt (1974)	Billig & Tajfel (1973) Turner (1975)

cant in-group bias). Thus, the effect of actual intragroup interaction was to enhance favoritism toward in-group members, but equally so for competitive and independent groups. Similarly, Janssens and Nuttin (1976) found that members of interacting groups overestimated group successes more than did members of noninteracting groups but that groups who engaged in intergroup competition did not overestimate significantly more than groups who coacted independently. However, as was mentioned previously, the success of initial instructions for creating a noncompetitive task structure may be questionable, since a manipulation check in the Rabbie and Wilkens (1971) experiment revealed that *felt* competitiveness was equally high for members of the competition and no-competition groups.

A clearer manipulation of the structure of interdependence between groups is attained when conditions promoting intergroup competition are compared with conditions requiring cooperation between groups. One method for varying this feature of intergroup relations is through the use of instructional sets designed to induce competitive or cooperative orientation on the part of members of one group toward those of another group. Such an instructional manipulation was used in an experiment by Rabbie, Benoist, Oosterbaan, and Visser (1974) in which three-person groups were instructed to role play a team of union negotiators preparing for a meeting with a management team. After a 10-minute discussion period within the union group, subjects were asked to make ratings of the atmosphere in their own group and of their expectations regarding interactions with the management group. No significant differences in ratings of in-group cohesion or satisfaction were obtained between subjects in the competitive and cooperative orientation conditions, but members of competitive groups did report anticipating greater hostility toward the out-group than did members of groups in the cooperative condition.

Other methods of varying cooperation–competition involve direct manipulation of the structure of the intergroup task. One experiment reported by Kahn and Ryen (1972) used a simulated game setting in which three-person teams anticipated either cooperative or competitive interaction with another team. Before any actual interaction, subjects made ratings of their own team members and of out-group members on 11 evaluative semantic differential scales. A significant difference in ratings in favor of in-group members was obtained from subjects in the cooperative condition, but the size of this difference was significantly greater for subjects in the competitive condition. Such enhancement of in-group bias as a function of intergroup competition has not, however, proved reliable across research studies. Doise et al. (1972) divided subjects into two groups based, supposedly, on preference for photographs, and then led subjects in the experimental groups to anticipate a Tajfel-type money allocation task involving members of both groups. Instructions for allocation were varied to emphasize competitive own-gain maximization (outcomes to be distributed differentially between the groups) or joint-gain maximization (total outcomes to be divided equally between the two groups). Before the allocation task began, subjects evaluated in-group and out-group members on 19 trait scales. Mean ratings from subjects in both the cooperative and competitive conditions showed an in-group bias significantly greater than that obtained from control groups (who anticipated no future task), but the bias for competitive teams was not significantly different from that for cooperative teams (even though behavior afterwards, in the allocation task itself, did differ in a direction consistent with instructions).

One possible explanation of the difference in findings obtained by Kahn and Ryen and by Doise et al. is that the salience of the cooperation–competition manipulation may be highly variable when its impact is assessed prior to actual intergroup interaction. Brewer and Silver (1978) obtained trait ratings of in-group and out-group members from some subjects before they completed an allocation task and from other subjects after the allocations had been completed. Instructions for the allocation task were varied to generate a cooperative intergroup reward structure (achievement determined by adding each in-group member's points to an out-group mem-

ber's points), a competitive reward structure (achievement determined by the difference between points allocated to the in-group member and those allocated to the out-group member), or a reward structure based on total points allocated to the in-group member, regardless of out-group gains. As in the Doise et al. study, performance on the allocation task was significantly affected by these different instruction conditions. Subjects in both the independent and the competitive intergroup conditions predominantly made choices that maximized relative gain in favor of the in-group member, but subjects working under cooperative instructions made fewer relative-gain choices and more choices that maximized joint gain or equality between in-group and out-group member outcomes. However, trait ratings were significantly biased in favor of own-group members by subjects in all conditions, regardless of intergroup reward structure or of whether ratings were obtained before or after the behavioral measure.

Contrary to the Brewer and Silver (1978) findings, Worchel, Andreoli, and Folger (1977) found that intergroup competition significantly increased differential attraction between in-group and out-group in comparison with cooperative or independent intergroup settings. In the first phase of the Worchel et al. experiment, subjects were divided arbitrarily into two groups of four to six persons each. Members of each group were to work together on a joint product that would later be evaluated either in competition with, independently of, or in combination with the product of the other group. After an initial period of interaction, subjects were asked to rate their liking for each of the members of their own and the other group. Only small differences between conditions were obtained for mean attraction ratings of in-group members, but liking for out-group members was significantly higher in the cooperative setting than in the independent setting, and out-group attraction in competitive groups was significantly lower than for either cooperation or independence. On the other hand, Ryen and Kahn (1975) found that competitive interaction with an out-group increased in-group bias, over that obtained in cooperative conditions, by increasing evaluative ratings of in-group members but having no significant effect on out-group ratings.

Since competition is sometimes found to enhance in-group bias effects and sometimes found to have no additional impact,[2] it may be that intergroup competition does not affect intergroup attitudes directly, but only when confounded with other aspects of group differentiation. In other words, the presence of explicit competition may serve to clarify the distinction between in-group and out-group under conditions in which the differentiation would otherwise be ambiguous. The role of intergroup competition in clarifying in-group boundaries can be illustrated with an experiment by Goldman, Stockbauer, and McAuliffe (1977) in which effects of cooperation and competition were compared for both intergroup and intragroup reward structure. In their experiment, two-person teams interacted on a joint task in which achievement outcomes *within* teams were either cooperatively or competitively interdependent, while performance *between* groups was assessed either jointly (cooperatively) or competitively. Evaluative ratings of own-team members were significantly higher under conditions of intragroup cooperation than under intragroup competition, regardless of intergroup reward structure. However, the effects of intragroup competition on task performance were significantly less in the presence of intergroup competition than in the presence of intergroup cooperation. It is very likely that in the latter condition there was no perceptual differentiation between the second member of one's own team and the members of the other team. Only in the presence of a negative correlation between a subject's own final outcomes and those of the other team could such a differentiation be made, which in turn moderated the effects of the competitive task structure within teams. However, Rabbie and Wilkens (1971) reported that intragroup

[2] It should be noted that for those studies reporting no significant differences in bias between competitive and cooperative conditions, it is not a matter of results falling just short of statistical significance but rather that the in-group bias obtained is virtually the same under the two conditions.

status differentiation among members of three-person groups increased under conditions of intergroup competition, as compared with cooperative intergroup settings.

Group Outcomes: Success–Failure

One factor that is inherently confounded with the presence of explicit competitive interdependence between groups is that of differential shared fate; that is, under conditions of a competitive reward structure, members of a group share (or anticipate sharing) a common outcome that is distinct from the outcome shared by members of the other group. Such a co-occurrence of group boundaries and common fate is one of the criteria for perceived "entitivity" of social groupings discussed by Campbell (1958). The importance of shared outcomes as a determinant of in-group bias was empirically verified by Rabbie and Horwitz (1969). In that study, arbitrary classification of subjects into two groups labeled *blue* and *green* alone produced no significant in-group bias. However, when the experimenter introduced a chance allocation rule whereby one group won a prize and the other did not, subjects showed a significant bias in evaluative trait ratings (made after the award had been announced) in favor of their own group, regardless of whether their group had won or lost or of what allocation rule had been applied.

Most of the studies of shared fate as a determinant of in-group bias have focused on the effect of group achievement—success versus failure—in a competitive setting. The early management studies by Blake and Mouton (1961) and by Bass and Dunteman (1963) included ratings taken at the end of the intergroup competition phase, after the winning and losing teams had been announced. In both cases, the self-ratings of the winning groups remained significantly inflated (as they were during competition), but the losing groups' self-ratings dropped, at least temporarily. Similarly, Wilson and Miller (1961) found that when win–loss outcomes were experimentally manipulated, evaluative ratings of teammates and out-group members were affected. In comparison with ratings made prior to competition, subjects on winning teams showed a significant increase in bias in favor of their own team members, whereas subjects on losing teams showed a smaller difference in ratings of in-group and out-group members in favor of the winning out-group. Ryen and Kahn (1975) also found that winning under competitive conditions significantly enhanced in-group bias in evaluative trait ratings but that feedback indicating one's own group had lost reduced perceived in-group–out-group differences to nonsignificance.

One experiment reported by Kahn and Ryen (1972) extended the range of win–loss outcomes studied by having groups of subjects engage in a series of simulated football plays and then giving each group feedback information that they had won either 100%, 50%, or 0% of the plays in comparison with another team. After this feedback, subjects made ratings of in-group and out-group team members on 11 evaluative scales. Mean in-group ratings increased (and, to a lesser extent, out-group ratings decreased) as a function of the percentage of in-group success. The resulting differences between mean ratings of in-group and out-group were not significantly different from zero for groups with no wins (mean in-group–out-group difference $= -1.5$), were significantly biased in favor of one's own group for those with 50% wins (mean difference $= 8.3$), and were significantly more biased for those with 100% success (mean difference $= 14.5$).

In the preceding experiment, in-group bias occurred even when outcomes for the in-group were the same as those obtained by the out-group (50% wins), as long as the in-group attained some degree of success. In a second experiment, Kahn and Ryen (1972) tested whether differentiation between in-group and out-group outcomes was an important factor in in-group bias when competitive interdependence between groups was removed. Groups of three subjects worked independently on selected IQ test items, and then each group was given feedback indicating whether their performance resulted in a high proportion of successes or a low proportion of successes (high failure) and also whether

the other group's performance was high or low, with in-group and out-group results manipulated independently. After this feedback was provided, evaluative ratings were obtained of in-group and out-group members. Under these noncompetitive conditions, subjects in all conditions showed a bias in favor of their own group, but the degree of bias was significantly enhanced only when in-group success was combined with out-group failure.

Across these studies involving group performance outcomes there appears to be a consistent tendency for subjects to exaggerate the difference between in-group and out-group qualities when the in-group does well in comparison with the other group but to reduce the perceived difference when in-group and out-group performed the same or when the in-group does more poorly. Such a pattern serves to maximize favorable comparisons and to minimize unfavorable ones and may be typical of responses to single, or one-time, intergroup comparisons. Responses to success and failure may change, however, if interactions are extended in time and further comparisons between in-group and out-group are anticipated in the future. Worchel, Lind, and Kaufman (1975) found that anticipation of further competition interacted with outcome feedback in determining relative evaluation of in-group and out-group products. Members of winning groups overevaluated their group product less when they expected competition between the groups to continue than when they expected it to discontinue, whereas members of losing groups devaluated their group product more under discontinuing than under continuing conditions. Worchel et al. interpreted these results in the context of ongoing competition to avoid "complacency" on the part of winning groups and to avoid "giving up" on the part of losing groups.

Continued failure or deprivation of the in-group relative to a particular out-group across a long period of time may lead to compensatory overevaluation in favor of the in-group wherever possible (LeVine & Campbell, 1972). Branthwaite and Jones (1975) looked at the effect of long-standing status differentials between ethnic groups on allocations in the Tajfel choice task. When subjects were divided into groups according to ethnic identity (Welsh–English), members of the minority group made more choices that maximized the difference between in-group and out-group member outcomes than did members of the majority group (who tended to make more choices dictated by equality or joint-gain maximization). Similar findings were obtained by Gerard and Hoyt (1974) with experimentally created groups and a different measure of bias. Subjects in their study were classified as members of a group of 2, 5, or 8 subjects, out of a total of 10 subjects participating in a session. Each subject was then asked to make evaluative ratings of essays supposedly written by two other participants in the experiment—one identified by an identification number of someone in the subject's own group and one identified by an identification number from the out-group. Ratings of the content of the essays produced no in-group–out-group differentiation, but evaluations of the writers resulted in some differences. Subjects classified into groups of five and eight showed no significant bias (in fact, there was some tendency in favor of the out-group member), whereas subjects in the minority group of two showed a significant positive bias in favor of their in-group member.

Results from both of these studies suggest that minority group status makes in-group membership more salient than does membership in a majority group. A similar heightening of awareness of group identity may occur for groups exposed to repeated failure or loss, particularly when membership in such a group is unalterable. Whether repeated failure ultimately generates greater in-group–out-group differentiation than does repeated success has yet to be experimentally demonstrated. However, in a survey of intergroup perceptions among ethnic groups in East Africa, Brewer and Campbell (1976) found those groups rated lowest on the socioeconomic status index to be higher in ethnocentric self-regard than those groups with the highest socioeconomic status ratings. This effect may also be related to repeated findings

of "reverse discrimination" on the part of members of high-status majority groups in dealings with individual members of minority groups (Dutton, 1976).

Intergroup Similarity

Although it has been established that evaluative bias occurs only in the presence of some meaningful distinction between groups (Rabbie & Horwitz, 1969), the minimal differentiation required allows room for considerable variation in implied or explicit similarity between members of the in-group and out-group. A number of studies have examined the effect on in-group bias of variations in degree of similarity among in-group members, or of dissimilarity between in-group and out-group, on such dimensions as cultural, personality, or attitudinal characteristics.

Wilson and Kayatani (1968) divided subjects into two-person teams, with each team composed of members of the same racial group (Japanese or Caucasian). Each team then played a modified Prisoner's Dilemma Game with another team of the same or different race. The game choice results were uniform across both types of out-groups—choices made in the intergroup setting averaged only 43% cooperative, whereas choices made within each group averaged 84% cooperative. Similarly, postgame evaluative trait ratings showed a significant in-group bias regardless of whether the out-group was of the same or different race.

A more recent study by Dion (1973) also looked at the effect of similarity on intergroup versus intragroup Prisoner's Dilemma Game behavior. The experimental manipulation in this study, however, varied intragroup rather than intergroup similarity. One half of the dyads in the experiment were told that the members had closely matched personality profiles, whereas the remaining pairs were told they had discrepant profiles. All teams then played a Prisoner's Dilemma Game (with two experimental confederates serving as the out-group team) and also rated both in-group and out-group members on 16 evaluative traits. Both high- and low-similar dyads exhibited the same intergroup game behavior (averaging 30% cooperative choices), but the high-similar pairs exhibited significantly more in-group cooperation (59%) than did the low-similar pairs (36%). The same pattern of results was obtained for the evaluative ratings: Out-group ratings were essentially the same for all groups, while in-group ratings were significantly higher for members of the high-similar dyads.

Billig and Tajfel (1973) compared intergroup differentiation based on explicit similarity with categorization based on no similarity principle. In their experiment, intergroup similarity and categorization were manipulated independently. Similarity was varied by dividing half the groups according to supposed preferences in painting styles (Klee vs. Kandinsky) and by dividing the remaining groups randomly into groups labeled X or W. Categorization was varied by including group label as part of subject identification during the allocation task for some subjects and omitting group labels for others. Results from the allocation task showed significant in-group favoritism in the categorization conditions and no significant favoritism in the noncategorization conditions, regardless of similarity. Brewer and Silver (1978) also found significant in-group bias on both allocation-task decisions and evaluative ratings regardless of whether groups had been formed on the basis of distinct preferences or had been formed on the basis of a random split after being explicitly told that all subjects were similar on the preference task.

The similarity manipulation in the Billig and Tajfel and the Brewer and Silver studies involved both intragroup similarity and intergroup dissimilarity. In an experiment by Allen and Wilder (1975) these two facets were varied independently in a 2×2 design. With painting style preference as the ostensible basis of categorization into groups, subjects were provided with further information indicating the percentage (high or low) of responses to an attitude questionnaire that were similar to their own responses for other members of their own group and for members of the other group. Subjects then

made choices on the Tajfel allocation task on behalf of an in-group member and an out-group member. Subjects in all experimental conditions showed some degree of in-group favoritism in allocation decisions. High in-group similarity produced significantly more bias than did in-group dissimilarity, but similarity–dissimilarity of the out-group had no effect on degree of in-group bias.

Results from all of these studies are consistent in indicating that explicit dissimilarity within the in-group reduces in-group bias but that information on similarity between the subject and out-group members makes no difference. However, it may be that perceived similarity within the in-group and perceived dissimilarity from the out-group are highly interdependent, as suggested by the results of an experiment by Hensley and Duval (1976). In this study, information on the opinions held by 10 subjects in a discussion group was presented graphically in such a way that each subject's own opinion was depicted within a cluster of seven other subjects' opinions, with the distance between the subject's opinion and these seven held constant. The positioning of the opinions associated with the remaining 2 subjects was varied across five levels of distance from this majority cluster. Following this presentation, each subject made ratings of the other 9 subjects in the session on perceived similarity to self and on liking. The results for perceived similarity ratings revealed an assimilation–contrast effect: The greater the distance between the minority (out-group) and the majority (in-group), the greater the perceived similarity within the subject's own group. A parallel effect was obtained on the ratings of liking for members of the majority and minority groups.

Salience of Categorization

Since the grouping of subjects into majority and minority clusters in the Hensley and Duval study was not explicitly labeled, it is likely that the effect of increasing the visual distance between the two clusters was to increase the probability that the subject would perceive a boundary between the two groups. In fact, in the three conditions in which the distance between clusters was great enough to insure the perception of distinct groupings, the ratings of perceived similarity and of liking for in-group as opposed to out-group members were essentially the same, the only significant differences occurring between these three conditions and the two conditions involving lesser distances. Thus, the effect attributed to out-group dissimilarity may have been due to the differential salience of the in-group–out-group distinction. Other research in which the salience of categorization has been manipulated either directly (e.g., Billig & Tajfel, 1973) or indirectly (e.g., Gerard & Hoyt, 1974) confirms the importance of this factor in eliciting in-group bias.

Results of several studies indicate that the same differences among individuals may or may not lead to bias depending on whether a basis for grouping has been made salient. For instance, in a study by Stephenson, Skinner, and Brotherton (1976), secondary school students were assessed on their attitudes toward raising the age for compulsory schooling. Experimental sessions were composed of four students in favor of and four against raising the age. At the beginning of the session subjects were given information about the distribution of attitudes among the eight participants and then were asked to rate each of the participants on five evaluative trait scales. Ratings were made both before and after subjects were divided into four-person groups (based on initial attitudes) for participation in an intergroup negotiation task. Prior to the division into labeled groups, ratings showed no in-group bias, but following the group task, ratings changed significantly in favor of the in-group.

Turner (1975) also reported a complex interaction between participation in an intergroup task and in-group favoritism. Subjects in his study were divided into two groups and then made two sets of choices on a Tajfel allocation task—once making choices on behalf of two other subjects (one of whom was an in-group member and one an out-group member) and once making choices on behalf

of self and one other subject (who was either an in-group member or an out-group member). For subjects who made self–other choices first, favoritism toward self was moderately high, regardless of whether the other was an in-group member or an out-group member. However, for subjects who made in-group–out-group member choices before making self–other choices, self-favoritism was significantly higher when the other was an out-group member than when the other was an in-group member. Thus, prior participation in a task that made the intergroup distinction salient enhanced the differentiation between self and out-group member, but reduced differentiation between self and in-group member.

The mere presence of more than one member of a distinct social group apparently increases the salience of grouping and associated biases. Dustin and Davis (1970) observed the effects of competition between two groups of three subjects when the competitive interaction took place on an individual (1:1) basis or on a group (3:3) basis. Following group competition, product ratings were significantly biased in favor of subjects' in-group output, but no own-group bias was obtained for product ratings from subjects whose groups interacted on an individual competition basis. Similar effects have been obtained for biases associated with nonexperimental social groups. Doise and Sinclair (1973) studied the effect of reference group salience on accentuation of stereotypes associated with *collegians* (male secondary school students) and *apprentis* (vocational trainees). Members of both groups were brought together in either a 1:1 or a 2:2 encounter and, following a short discussion period, were asked to make trait ratings of the respective groups. In the 2:2 condition collegians gave ratings significantly more biased in favor of their own group than they did in the 1:1 condition, whereas apprentis showed less derogation of their own group relative to the higher status out-group in the 2:2 than in the 1:1 condition. Similar effects of the presence of multiple members of both groups have been obtained for accentuation of stereotypes based on sex (McKillip, Dimiceli, & Luebke, 1977) and on ethnic identity (Dion & Earn, 1975).

Summary

The interpretation of results from all of the experimental studies reviewed in this section (entitled Sources of Variation in Bias) has been consistent with the following general conclusion: Any of the situational factors found to be associated with enhancement of in-group bias can be subsumed under the effect of the salience of the distinction between in-group and out-group. Factors such as interdependence, intergroup similarity, and shared fate all affect the probability that a respondent will be aware of a relevant basis for categorization into groups, which in turn determines the amount of in-group bias that is evidenced. Once a particular categorization has become salient, however, the degree of bias obtained is fairly constant despite further variations in out-group similarity (e.g., Allen & Wilder, 1975) or in opportunity for cooperative interaction (e.g., Brewer & Silver, 1978; Worchel et al., 1977).

Locus of Bias: Which Dimensions?

Though the argument has been made that in-group bias is related in an all-or-nothing manner to category salience, the bias associated with any particular basis for categorization into in-group and out-group may not be constant across all response dimensions. There are a number of sources of evidence for specificity of effects, or "selective bias" (Wilson, Chun, & Kayatani, 1965). A series of studies by Wilson and his associates (e.g., Wilson et al., 1965; Wilson & Kayatani, 1968) indicate that following intergroup competition within a Prisoner's Dilemma Game format evaluative bias is most pronounced on game-relevant motive traits (e.g., cooperative, fair, and kind), whereas in-group bias is less pronounced on sociometric (e.g., likeable) or ability traits (e.g., capable and intelligent) and least evident on general personality dispositions (e.g., neurotic and

anxious). Dion (1973) also found that in-group bias after participation in an intergroup Prisoner's Dilemma Game was greatest on the dimension of trust, and Brewer and Silver (1978) obtained the most bias on ratings of trustworthiness, friendliness, and cooperativeness, even after respondents had engaged in a cooperative intergroup allocation task. The latter study also found a nonsignificant correlation ($r = .14$) between in-group favoritism on the allocation task and in-group bias on evaluative trait ratings. Similarly, Ryen and Kahn (1975) obtained no significant correlation between evaluative in-group bias and intergroup distancing, as evidenced in seating behavior, and Worchel et al. (1975) reported a low correlation between liking for the in-group and relative evaluation of in-group versus out-group products. Going outside of the laboratory, Brewer and Campbell (1976) found in a large-scale survey of intergroup attitudes that the psychological distance reported between a respondent's in-group and a particular out-group varied depending on whether the response measure dealt with affective relations (e.g., social distance), evaluation, or respect.

The finding that bias depends on some interaction between the categorization variable and the response dimension on which bias is assessed is consistent with a cognitive interpretation of intergroup bias (Tajfel, 1959; 1969). The comparison with general theories of cognitive processing is best illustrated by Tversky's (1977) feature-matching model of similarity judgments. In Tversky's model, the perceived similarity between two objects is a function of some linear combination of their common and distinctive features; but the weight assigned to any particular feature or set of features may vary depending on the context or the nature of the judgment task. As a result, the same two objects may be judged to be highly similar within one frame of reference and highly distinct within another. The determinants suggested by Tversky for this lability of perceived similarity are relevant to the judgment of objects external to the respondent. It may be that when identification with oneself is a salient feature of one of the objects to be judged, motivational factors enter into the selection of features to be attended to (cf. Christian, Gadfield, Giles, & Taylor, 1976).

The interdependence of perceptual and motivational factors is highlighted by some interesting parallels between the research literature on perceptual accentuation in social judgment (Eiser & Stroebe, 1972) and on in-group bias effects (Turner, 1975). In the judgment literature, *enhancement of contrast* occurs when the judged distance between stimuli that are members of different classes is exaggerated. The occurrence of this accentuation effect depends on the presence of at least some minimal correlation between the classification variable and variation among the stimuli on the property being judged (Campbell, 1956; Tajfel, 1959; Tajfel & Wilkes, 1963). However, when the stimuli are social objects, toward which the judge has differential orientations, a second condition has been found to be necessary for enhancement of contrast, namely, that the judge's own position be located on what the rater perceives to be the positive side of the dimension of judgment (Eiser, 1975; Eiser & Mower-White, 1974).

Analogous to the conditions associated with the enhancement of contrast effect, Turner's (1975) social comparison theory of in-group favoritism specifies two preconditions: (a) salience of some basis for distinction between in-group and out-group and (b) availability of "differentially valued actions relevant to the categorization" (p. 12). The presence of these conditions generates intergroup *social competition,* the aim of which is to take advantage of opportunities to maximize the relative advantage of the in-group over the out-group. In effect, then, in-group bias results from a motivated search to represent the differences between groups along dimensions that favor the in-group. If outcomes favoring the in-group are not available, the distinction between them will be minimized rather than accentuated.

The presence of motivational influences can lead to important asymmetries in the ways in which the members of two social groups perceive the differences between them, such as those obtained for groups differing

in socioeconomic status (e.g., Branthwaite & Jones, 1975; Brewer & Campbell, 1976). Members of Group A may perceive a major difference between themselves and Group B along dimension *X*, whereas members of Group B may focus on the common features of A and B relevant to *X* and emphasize the distinctive features relevant to dimension *Y*. (Imagine, e.g., members of a winning team following a football contest and highlighting the differences between the teams in agility and skill, while members of the losing team regard ability differences as marginal, but emphasize differences between the teams in "how the game was played" with respect to fair play and sportsmanship.) Even differences on a single dimension can be represented in alternative ways that favor one group or the other (Campbell, 1967; Peabody, 1967; Vassiliou, Triandis, Vassiliou, & McGuire, 1972). For example, an objective difference between the customs of two groups with regard to the sharing of household items may be represented by one group as a distinction between generosity and selfishness, but may be defined by the other group in terms of responsibility–irresponsibility. Such differences can introduce considerable variation in assessments of in-group bias.

Although not all differences can be represented in a manner congruent with positive self-image, some characteristics of groups lend themselves to universal bias. Across experimental and field studies of the content of intergroup perceptions, the dimensions on which evaluative bias in favor of in-groups occurs most reliably are those associated with trustworthiness, honesty, or loyalty. All these are traits related to normative expectations that apply to intragroup—as opposed to intergroup—behavior. To the extent that norms prescribing preferential treatment for members of one's own group are characteristic of in-group formation, they generate a set of reciprocal stereotypes (Campbell, 1967) that any two groups might have of each other and with which each could legitimately place the in-group on the positive side of the scale (e.g., "we are loyal; they are clannish"; "we are honest and peaceful among ourselves; they are hostile and treacherous toward outsiders"). This reciprocal contrast is basic to the "mirror-image" phenomenon in international perception, as portrayed by Bronfenbrenner (1961).

Locus of Bias: In-Group or Out-Group?

The extensive literature on group cohesiveness indicates that factors such as similarity among group members (e.g., Anderson, 1975) and shared success (e.g., Blanchard, Adelman, & Cook, 1975) enhance attraction toward one's own group in the absence of comparison with any other groups. Since in-group bias research focuses on favoritism toward the in-group *relative* to an out-group, it is often ambiguous whether the comparison rests on enhancement of the in-group, devaluation of the out-group, or both. In many studies, particularly those dealing with evaluative biases, results were reported only in the form of net ratings or difference scores (e.g., Doise & Sinclair, 1973; Dustin & Davis, 1970; Ferguson & Kelley, 1964; Gerard & Hoyt, 1974; McKillip et al., 1977), thereby losing information as to whether variations in bias were a function of increases in in-group ratings or decreases in out-group ratings.

Among those studies that did report both in-group and out-group ratings separately, results are mixed as to the location of bias. Some studies that compared intergroup cooperation and competition reported no change in in-group attraction, but reported a decrease in out-group ratings under competition conditions (Rabbie et al., 1974; Worchel et al., 1977). Other research indicates that variations in degree of bias are a function of both increased in-group and decreased out-group ratings (Hensley & Duval, 1976; Kahn & Ryen, 1972; Wilson et al., 1965). The majority of studies, however, indicate that increases in bias are associated with enhanced in-group evaluation, whereas out-group ratings remain relatively constant (Dion, 1973; Rabbie & Horwitz, 1969; Rabbie & Wilkens, 1971; Ryen & Kahn, 1975; Stephenson et al., 1976; Wilson & Miller, 1961; Worchel et al., 1975). The results in general, then, are consistent with the conclu-

sion that in-group bias rests on the perception that one's own group is better, although the out-group is not necessarily depreciated.

The above conclusion suggests that the effect of in-group–out-group categorization is one of differentiating the in-group from the out-group rather than of differentiating the out-group from the in-group, as the process is usually conceived. This means that the baseline should be conceptualized as a state in which the self is perceived as distinct from an undifferentiated group of others. The introduction of an in-group–out-group boundary is then associated with a realignment of perceptions wherein members of the in-group are perceived to be less differentiated from the self, while the distance between the self and out-group members remains unchanged. This conceptualization of the differentiation process is borne out by studies that modified the Prisoner's Dilemma Game for group play (e.g., Dion, 1973; Wilson & Kayatani, 1968). In terms of the high percentage of competitive choices, intergroup behavior in these games parallels closely the game behavior of individual players. It is the increased proportion of cooperative choices exhibited in intragroup decisions that deviates from typical interindividual play.

Reconceptualizing the process of intergroup differentiation tends to shift the focus of attention from the negative implications of out-group perceptions to the positive consequences of in-group formation. The critical role of in-group identity in the extension of interpersonal trust has already been alluded to. Another consequence of the reduced social distance between self and others that accompanies in-group formation is that outcomes to other group members, or to the group as whole, come to be perceived as one's own. Indeed, there is evidence that feedback regarding total group outcomes can have more impact on the individual than feedback on his or her own performance (e.g., Zander & Armstrong, 1972) and that expected and perceived success is higher at the group level than at the individual level (Janssens & Nuttin, 1976). Satisfaction and identification with group success tend to be high even when the individual's contribution to that success has been minimal (e.g., Kahn & Ryen, 1972) or nil (Cialdini et al., 1976).

The capacity of in-group identification to amplify feedback has important implications for the solution of that class of social problems characterized as *commons dilemmas* (Dawes, McTavish, & Shaklee, 1977; Hardin, 1968) or *social traps* (Platt, 1973). The essence of these problems is a "divergence between what people are individually motivated to do and what they might accomplish together" (Schelling, 1971, p. 68). The most critical social dilemmas derive from behaviors for which rewards outweigh small costs at the *individual* level (e.g., taking an extended shower) but that result in cumulative high costs at the *group* level (e.g., depletion of water supplies). The solution to such dilemmas requires that the collective outcome be real enough to the actor to overcome individualistic motivational dynamics (Messick, 1973; 1974). The reduced differentiation between one's own and other outcomes associated with in-group formation provides one mechanism for increasing the weight given to collective outcomes in individual decision making.

The idea of capitalizing on the social benefits of group identification raises concern about whether the positive consequences of in-group formation depend on the presence of a distinct out-group. To those who hold that the effects of social categorization are the result of intergroup social comparison (Turner, 1975; Tajfel, in press), the existence of an identifiable out-group is essential. Although groups may function in the absence of any other groups, the mere presence of an out-group is sufficient to significantly alter in-group processes (Billig, 1976). On the other hand, if one associates group identification with more general concepts of unit formation (Campbell, 1958; Heider, 1958), awareness of differentiated social groupings may be only one potential mechanism—however important—by which the self is included in a bounded social unit. Perhaps the salience of interdependence or common fate can be enhanced among any given set of individuals without reference to other subsets. If so, the focus of research on in-

group bias should be shifted from intergroup to intragroup contexts.

References

Allen, V. L., & Wilder, D. A. Categorization, belief similarity, and intergroup discrimination. *Journal of Personality and Social Psychology,* 1975, *32,* 971–977.

Anderson, A. B. Combined effect of interpersonal attraction and goal-path clarity on the cohesiveness of task oriented groups. *Journal of Personality and Social Psychology,* 1975, *31,* 68–75.

Bass, B. M., & Dunteman, G. Biases in the evaluation of one's own group, its allies, and opponents. *Journal of Conflict Resolution,* 1963, *7,* 16–20.

Billig, M. *Social psychology and intergroup relations.* London: Academic Press, 1976.

Billig, M., & Tajfel, H. Social categorization and similarity in intergroup behaviour. *European Journal of Social Psychology,* 1973, *3,* 27–52.

Blake, R. R., & Mouton, J. S. Reactions to intergroup competition under win-lose conditions. *Management Science,* 1961, *7,* 420–435.

Blanchard, F. A., Adelman, L., & Cook, S. W. Effect of group success and failure upon interpersonal attraction in cooperating interracial groups. *Journal of Personality and Social Psychology,* 1975, *31,* 1020–1030.

Branthwaite, A., & Jones, J. E. Fairness and discrimination: English versus Welsh. *European Journal of Social Psychology,* 1975, *5,* 323–338.

Brewer, M. B., & Campbell, D. T. *Ethnocentrism and intergroup attitudes: East African evidence.* New York: Halstead Press, 1976.

Brewer, M. B., & Silver, M. Ingroup bias as a function of task characteristics. *European Journal of Social Psychology,* 1978, *8,* 393–400.

Bronfenbrenner, U. The mirror-image in Soviet-American relations. *Journal of Social Issues,* 1961, *17,* 45–46.

Campbell, D. T. Enhancement of contrast as a composite habit. *Journal of Abnormal and Social Psychology,* 1956, *53,* 350–355.

Campbell, D. T. Common fate, similarity, and other indices of the status of aggregates of persons as social entities. *Behavioral Science,* 1958, *3,* 14–25.

Campbell, D. T. Stereotypes and the perception of group differences. *American Psychologist,* 1967, *22,* 817–829.

Christian, J., Gadfield, N., Giles, H., & Taylor, D. The multidimensional and dynamic nature of ethnic identity. *International Journal of Psychology,* 1976, *11,* 281–291.

Cialdini, R. B., et al. Basking in reflected glory: Three (football) field studies. *Journal of Personality and Social Psychology,* 1976, *34,* 366–375.

Dawes, R. M., McTavish, J., & Shaklee, H. Behavior, communication, and assumptions about other people's behavior in a commons dilemma situation. *Journal of Personality and Social Psychology,* 1977, *35,* 1–11.

Dion, K. L. Cohesiveness as a determinant of ingroup–outgroup bias. *Journal of Personality and Social Psychology,* 1973, *28,* 163–171.

Dion, K. L., & Earn, B. M. The phenomenology of being a target of prejudice. *Journal of Personality and Social Psychology,* 1975, *32,* 944–950.

Doise, W., et al. An experimental investigation into the formation of intergroup representations. *European Journal of Social Psychology,* 1972, *2,* 202–204.

Doise, W., & Sinclair, A. The categorization process in intergroup relations. *European Journal of Social Psychology,* 1973, *3,* 145–157.

Dustin, D. A., & Davis, H. P. Evaluative bias in group and individual competition. *Journal of Social Psychology,* 1970, *80,* 103–108.

Dutton, D. G. Tokenism, reverse discrimination, and egalitarianism in interracial behavior. *Journal of Social Issues,* 1976, *32,* 93–107.

Eiser, J. R. Attitudes and the use of evaluative language: A two-way process. *Journal for the Theory of Social Behaviour,* 1975, *5,* 235–248.

Eiser, J. R., & Mower-White, C. J. Evaluative consistency and social judgment. *Journal of Personality and Social Psychology,* 1974, *30,* 349–359.

Eiser, J. R., & Stroebe, W. *Categorization and social judgement.* London: Academic Press, 1972.

Ferguson, C. K., & Kelley, H. H. Significant factors in overevaluation of own-group's product. *Journal of Abnormal and Social Psychology,* 1964, *69,* 223–228.

Gerard, H. B., & Hoyt, M. F. Distinctiveness of social categorization and attitude toward ingroup members. *Journal of Personality and Social Psychology,* 1974, *29,* 836–842.

Goldman, M., Stockbauer, J. W., & McAuliffe, T. G. Intergroup and intragroup competition and cooperation. *Journal of Experimental Social Psychology,* 1977, *13,* 81–88.

Hamilton, D. L. Cognitive biases in the perception of social groups. In J. S. Carroll & J. W. Payne (Eds.), *Cognition and social behavior.* Hillsdale, N.J.: Erlbaum, 1976.

Hardin, G. The tragedy of the commons. *Science,* 1968, *162,* 1234–1248.

Heider, F. *The psychology of interpersonal relations.* New York: Wiley, 1958.

Hensley, V., & Duval, S. Some perceptual determinants of perceived similarity, liking, and correctness. *Journal of Personality and Social Psychology,* 1976, *34,* 159–168.

Janssens, L., & Nuttin, J. R. Frequency perception of individual and group successes as a function of competition, coaction, and isolation. *Journal of Personality and Social Psychology,* 1976, *34,* 830–836.

Kahn, A., & Ryen, A. H. Factors influencing the bias towards one's own group. *International Journal of Group Tensions,* 1972, *2,* 33–50.

LeVine, R. A., & Campbell, D. T. *Ethnocentrism:*

Theories of conflict, ethnic attitudes and group behavior. New York: Wiley, 1972.

MacCrimmon, K. R., & Messick, D. M. A framework for social motives. *Behavioral Science*, 1976, *21*, 86–100.

McClintock, C. G., Messick, D. M., Kuhlman, D. M., & Campos, F. T. Motivational bases of choice in three-choice decomposed games. *Journal of Experimental Social Psychology*, 1973, *9*, 572–590.

McKillip, J., Dimiceli, A. J., & Luebke, J. Group salience and stereotyping. *Social Behavior and Personality*, 1977, *5*, 81–85.

Messick, D. M. To join or not to join: An approach to the unionization decision. *Organizational Behavior and Human Performance*, 1973, *10*, 145–156.

Messick, D. M. When a little "group interest" goes a long way. *Organizational Behavior and Human Performance*, 1974, *12*, 331–334.

Peabody, D. Trait inferences: Evaluative and descriptive aspects. *Journal of Personality and Social Psychology Monograph*, 1967, *7*(4, Pt. 2).

Platt, J. Social traps. *American Psychologist*, 1973, *28*, 641–651.

Rabbie, J. M., Benoist, F., Oosterbaan, H., & Visser, L. Differential power and effects of expected competitive and cooperative intergroup interaction on intragroup and outgroup attitudes. *Journal of Personality and Social Psychology*, 1974, *30*, 46–56.

Rabbie, J. M., & Horwitz, M. Arousal of ingroup-outgroup bias by a chance win or loss. *Journal of Personality and Social Psychology*, 1969, *13*, 269–277.

Rabbie, J. M., & Wilkens, G. Intergroup competition and its effect on intragroup and intergroup relations. *European Journal of Social Psychology*, 1971, *1*, 215–234.

Ryen, A. H., & Kahn, A. Effects of intergroup orientation on group attitudes and proxemic behavior. *Journal of Personality and Social Psychology*, 1975, *31*, 302–310.

Schelling, T. On the ecology of micromotives. *The Public Interest*, 1971, *25*, 59–98.

Sherif, M., Harvey, O. J., White, B. J., Hood, W. R., & Sherif, C. W. *Intergroup conflict and cooperation: The Robbers Cave experiment*. Norman, Oklahoma.: University Book Exchange, 1961.

Stephenson, G. M., Skinner, M., & Brotherton, C. J. Group participation and intergroup relations: An experimental study of negotiation groups. *European Journal of Social Psychology*, 1976, *6*, 51–70.

Sumner, W. G. *Folkways*. Boston: Ginn, 1906.

Tajfel, H. Quantitative judgement in social perception. *British Journal of Psychology*, 1959, *50*, 16–29.

Tajfel, H. Cognitive aspects of prejudice. *Journal of Social Issues*, 1969, *25*, 79–97.

Tajfel, H. Experiments in intergroup discrimination. *Scientific American*, 1970, *223*(2), 96–102.

Tajfel, H. (Ed.). *Differentiation between social groups: Studies in the social psychology of intergroup relations*. London: Academic Press, in press.

Tajfel, H., & Billig, M. Familiarity and categorization in intergroup behavior. *Journal of Experimental Social Psychology*, 1974, *10*, 159–170.

Tajfel, H., Billig, M., Bundy, R., & Flament, C. Social categorization and intergroup behaviour. *European Journal of Social Psychology*, 1971, *1*, 149–178.

Tajfel, H., & Wilkes, A. L. Classification and quantitative judgement. *British Journal of Psychology*, 1963, *54*, 101–114.

Turner, J. C. Social comparison and social identity: Some prospects for group behavior. *European Journal of Social Psychology*, 1975, *5*, 5–34.

Tversky, A. Features of similarity. *Psychological Review*, 1977, *84*, 327–352.

Vassiliou, V., Triandis, H. C., Vassiliou, G., & McGuire, H. Interpersonal contact and stereotyping. In H. C. Triandis, *The analysis of subjective culture*. New York: Wiley, 1972.

Wilson, W., Chun, N., & Kayatani, M. Projection, attraction, and strategy choices in intergroup competition. *Journal of Personality and Social Psychology*, 1965, *2*, 432–435.

Wilson, W., & Kayatani, M. Intergroup attitudes and strategies in games between opponents of the same or of a different race. *Journal of Personality and Social Psychology*, 1968, *9*, 24–30.

Wilson, W., & Miller, N. Shifts in evaluations of participants following intergroup competition. *Journal of Abnormal and Social Psychology*, 1961, *63*, 428–431.

Worchel, S., Andreoli, V. A., & Folger, R. Intergroup competition and intergroup attraction: The effect of previous interaction and outcome of combined effort. *Journal of Experimental Social Psychology*, 1977, *13*, 131–140.

Worchel, S., Lind, E. A., & Kaufman, K. H. Evaluations of group products as a function of expectations of group longevity, outcome of competition, and publicity of evaluations. *Journal of Personality and Social Psychology*, 1975, *31*, 1089–1097.

Zander, A., & Armstrong, W. Working for group pride in a slipper factory. *Journal of Applied Social Psychology*, 1972, *2*, 293–307.

Received November 17, 1977 ■