The social functions of in-group bias
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Chapter 2

Integrating Identity and Instrumental Approaches to In-group Bias:
Different Contexts, Different Motives¹

In the field of clinical psychology there has been a recurring debate about the controversial finding that different kinds of therapies are almost equal in terms of outcome. Despite the different theoretical focus (e.g., psychoanalysis versus behaviorism) the difference in therapy effect between those approaches is about zero (Wampold et al., 1997). This has been called the Dodo bird verdict, referring to the dodo character in Caroll’s (1865/1962) Alice in wonderland. This dodo has the role of referee during a race and concludes that “everybody has won, and all must have prizes” (p. 412). Although it might seem unscientific to conclude that all theories win, recently it has been argued that for specific disorders one therapy (and theory) may be championed over the other (Smith, Glass, & Miller, 1980). That is, in different contexts, different theories win.

In the current chapter we would like to revive the dodo principle in the field of inter-group relations. Specifically we address the motivational basis of in-group bias and argue that different approaches (e.g., social identity theory versus the interdependence tradition) both have validity, in that each offers a plausible explanation for in-group bias under particular circumstances. We propose that in general a distinction can be made between theories of in-group bias in terms of an identity function versus an instrumental function. On the one hand in-group bias can help to define one’s place, and the place of one’s group, within a social structure (identity function); on the other hand it can be linked to achieving certain goals (instrumental function). Adopting a contextual-functional approach, we argue that under different circumstances, in-group bias might serve these different functions, as described by the different theories. Drawing a distinction between identity-based and more instrumental functions is not in itself new. What is

¹ This chapter is based on Scheepers, Spears, Doosje, & Manstead (in press).
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new and in our view necessary is an attempt to integrate these within a single framework specifying domains of application. Previous research on in-group bias has often tended to focus on either one or the other of these sorts of explanation or on critical tests of one versus the other. Here we are not so much concerned with the questions of "which and why," but "when, which and why." By integrating these diverse theoretical perspectives, we hope to gain a more complete picture of the motivational factors affecting in-group bias. We begin by providing a brief overview of the literature on in-group bias in order to introduce our rationale. Then we present two experimental studies providing evidence that under certain circumstances striving for a positive-distinctive group identity might motivate in-group bias, while under other circumstances instrumental concerns relating to inter-group competition drive this phenomenon.

The tendency to favor one's own group above other groups, called in-group bias, has been demonstrated with both artificial and real groups (Bettencourt, Dorr, Charlton, & Hume, 2001; Brewer, 1979; Messick & Mackie, 1989; Mullen, Brown, & Smith, 1992; Tajfel, 1982). Although it is often assumed that in-group bias results from a motivational process instead of a purely cognitive one, there is theoretical controversy about what exactly drives people to favor the in-group, and/or derogate the out-group. Early research tried to explain this phenomenon as stemming from frustration (Dollard, Doob, Miller, Mowrer, & Sears, 1939) or authoritarian personality characteristics (Adorno, Frenkel-Brunswick, Levinson, & Sanford, 1950). However, in the 1960s and 1970, these individualistic approaches were challenged by ones that focused on the group dimensions of inter-group discrimination. An early example is realistic conflict theory (RCT: Levine & Campbell, 1972; Sherif & Sherif, 1969), which explained in-group bias in terms of real conflict over scarce resources. In the famous Robber's Cave experiment (Sherif, Harvey, White, Hood, & Sherif, 1954 as cited in Sherif & Sherif, 1969), Sherif and colleagues showed that two groups of normal boys became highly competitive and even violent when they competed for certain resources (e.g., prizes during a tournament). However, when common group goals were made salient, conflict between the groups reduced. In short, there is strong evidence for a relation between conflicting group goals and in-group bias (Jackson, 1993).

Despite the considerable impact of RCT in the study of inter-group relations, the idea that real conflict is necessary for in-group bias was called into question by research from another group approach to this phenomenon: social identity theory (SIT: Tajfel & Turner, 1986). Social identity theory was developed to explain the results of studies using the minimal group paradigm (MGP: Diehl, 1990; Tajfel, Flament, Billig, & Bundy, 1971). This paradigm was designed to examine the minimal conditions necessary for in-group bias. In Tajfel et al.'s (1971) study participants were categorized in minimal groups on the basis of preference for a certain painter. After this, they allocated small amounts of money between members of their own group and the other group. To rule out direct self-profit there was no possibility of allocating
money directly to oneself. The mere social categorization into in-group and out-group was sufficient to favor the in-group. This result was obtained in the absence of contact within or between the groups, and with no conflict between the groups.

To explain these results, Tajfel and his collaborators proposed that people derive part of their identity from the groups to which they belong. Because people strive for positive (social) identities, they are motivated to differentiate their own group positively from out-groups. In terms of social identity theory, in-group bias in the minimal group paradigm can be explained as a process of giving positive meaning to the “minimal” and otherwise socially meaningless social categories (Tajfel, 1969; 1978). The processes by which a person seeks meaning in social categorization are described in somewhat more detail within self-categorization theory (SCT; Turner, Hogg, Oakes, Reicher, & Wetherell, 1987), an elaboration of SIT. Positive and meaningful group-distinctiveness might be reflected amongst other things in enhanced self-esteem (Lemyre & Smith, 1985; Oakes & Turner, 1980) or reduced uncertainty (Grieve & Hogg, 1999; Mullin & Hogg, 1998). After three decades of research there is compelling empirical evidence for this identity-based account of in-group bias (e.g., Brewer, 1979; Jetten, Spears, & Manstead, 1996, 1998; Messick & Mackie, 1989; Mummendey & Schreiber, 1984; Sachdev & Bourhis, 1987; Spears, Jetten, & Scheepers, 2002; Van Knippenberg & Ellemers, 1990).

Although the minimal group effect has been replicated several times (see Diehl, 1990 for an overview) the paradigm and the theory have not been without their critics. Rabbie and colleagues (Rabbie, 1993; Rabbie, Schot, & Visser, 1989) do not question the results of the minimal group paradigm, but argue that they are better explained in terms of interdependence of fate than in terms of social identity. On the basis of his behavioral interaction model (BIM) Rabbie (1993) argues that the main motivation in the minimal group paradigm is instrumental: Participants are motivated to gain as much money for themselves as possible. Because they cannot allocate money directly to themselves, they rely on their fellow group members in anticipation of a degree of reciprocity. As a result they allocate more to the in-group than to the out-group (see Gaertner & Insko, 2000, for a related argument).

Although there is some evidence that participants in MGP studies take instrumental considerations into account (Gaertner & Insko, 2000; Rabbie et al., 1989) it is more difficult to explain why evidence for in-group bias is found within the MGP when symbolic rather than material resources are at stake. For example, Turner (1975) showed that when participants had to allocate points instead of money, in-group bias still occurred. There is also evidence for in-group bias on trait ratings within the MGP (e.g., Jetten et al., 1998). Thus although instrumental

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2 It is important to note that we do not mean that the social categorization process is itself meaningless, but rather that it triggers a search for meaning when the categorization is minimal (and meaning is lacking).
motivations may play a role in the minimal group paradigm, the social identity explanation would seem to be necessary to for at least some of the results (Diehl, 1990). Rabbie (1993) also accepts that social identity theory provides a better explanation of in-group bias when symbolic measures are used.

From the above analysis of the literature on in-group bias and motivation, a distinction can be drawn between two kinds of approaches. On the one hand social identity theory and self-categorization theory explain in-group bias as a way of making sense of the social environment in a way that clarifies and favors the position of one's group. On the other hand there are theories focusing on interdependence of fate (Gaertner & Insko, 2000; Rabbie, 1993; Rabbie et al., 1989) or conflicting group goals (RCT: Sherif & Sherif, 1969) as a source of in-group bias. Both approaches have proven their worth as explanations for in-group bias. Thus, we do not favor one approach above the other in any general sense. Rather, we propose that the two approaches describe different functions of in-group bias and that, depending on circumstances, one or the other may provide the better explanation of this phenomenon. Specifically, we argue that in-group bias as explained by SIT might fulfill an identity function while interdependence and realistic conflict approaches are characterized by an instrumental function. However, we propose that the identity function, with the search for positive meaning in group membership as the main driving force, can be seen as the more primary function, in that in order for instrumental functions to come into play there needs to be a group identity in the first place. This is simply because a group must be in some way meaningful to its members before other group processes follow (e.g., the group as a basis for reciprocity). Once a meaningful and distinctive group identity is derived, the instrumental function may constitute a valid explanation for in-group bias. In other words, in a relatively meaningless context (e.g., minimal groups) SIT may frequently offer the most plausible explanation, whereas under more meaningful conditions, with resources or outcomes at stake, the instrumental function might prevail.

Although we are not the first to test predictions of instrumental approaches and SIT simultaneously (see for example, Duckitt & Mphuthing, 1998; Kelly, 1988), examinations of the circumstances under which the two approaches provide the best explanation of in-group bias are rare. An exception is a study by Rabbie and Schot (1990). They found evidence for their interdependence hypothesis when money had to be allocated within a MGP, whereas they found evidence for SIT when symbolic points were at stake. In the current research we only used symbolic in-group bias measures. We propose, however, that symbolic in-group bias might also have an instrumental component in that it enhances inter-group distinctiveness during competition. In these terms, in-group bias may reflect a perceived common fate without having a direct material influence on personal or group profit (Jackson & Smith, 1999).

In the present research we present a contextual analysis of the two different functions of
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in-group bias as implied in the two approaches. We refer to this as a contextual-functional analysis of in-group bias. One purpose of the current work is therefore to build a bridge between the two general approaches outlined above. Despite the fact that they often approach the issue of in-group bias from different perspectives, integration may generate synergy and theoretical enrichment. For example, because RCT focuses on conflicting goals within a given social structure it can be seen as a more sociological orientation, whereas SIT has a more psychological focus in that it describes how psychological processes (e.g., identification) affect inter-group relations. However, psychological processes such as identification can also arise from conflicting goals and may be closely intertwined with instrumental motivations. Conversely, identification may provide one means of stimulating the achievement of group goals. In short, an integrative approach may offer new empirical and theoretical insights into how psychological and material factors interleave and interact.

To summarize, the current research has the following objectives. First, we attempt to show that under different circumstances in-group bias can serve an instrumental or an identity function. Second, we propose that the identity function is the more primary motivation: A group must be a meaningfully distinct entity before members will work for it for instrumental reasons. Third, we seek to enrich RCT and interdependence approaches by seeing how group goals impact on psychological and identity-based concepts such as identification, perceived cohesion and self-esteem. To this end we present two (quasi-) minimal group studies. In the first study we try to illustrate our basic argument. Directly following minimal categorization in-group bias may serve an identity function, whereas later on in the experiment, under more meaningful and competitive circumstances, in-group bias may serve an instrumental function. In the second study we attempt to show that the search for meaning is the more fundamental motivation by demonstrating that when the possibility for showing in-group bias following categorization is blocked, the search for meaning and distinctiveness will transfer to a subsequent stage of the experiment. We also extend our functional analysis to related psychological constructs (identification, cohesion) and behavior (effort for the group).

Study 2.1

For this experiment we designed a minimal group study that became less minimal during the course of the experiment. After categorization into minimal groups, participants were given the possibility to differentiate their group from the out-group. Given the minimal character of the inter-group situation, we argue that in-group bias at this stage (Time 1) is best explained by an identity function as described by social identity theory. In a later phase of the experiment (Time 2), we introduced a group goal (trying to win an inter-group competition) for participants in the goal condition. Apart from the fact that this makes the inter-group situation less minimal, it also
shifts the context to a more realistic conflict situation. We then again measured in-group bias. We predicted that at Time 1 participants in both conditions would show in-group bias to some extent and that in-group bias in this phase of the experiment would be correlated with self-esteem (identity function). At Time 2, we predicted stronger in-group bias by those in the goal condition than those in the no goal condition (instrumental function).

Method

Participants and design. Thirty-nine students from the University of Amsterdam (23 males and 16 females) participated in this experiment. Their mean age was 22 and they were paid 15 Dutch guilders (approximately $6) for their participation in this and another (unrelated) experiment. Participants were recruited from a canteen. The design consisted of one between-participants factor (Group goal; No goal vs. Goal) and one within-participants factor (In-group bias measurement; Time 1 vs. Time 2). Participants were randomly assigned to one of the two conditions.

Overview. The experiment consisted of four phases. In the first phase participants were categorized into minimal groups. Then participants judged in-group and out-group products (in-group bias measurement Time 1) and completed a measure of collective self-esteem. In the third phase they performed a group task. Finally they again judged the group products (in-group bias measurement Time 2) and again completed a self-esteem scale. The only manipulation was the way in which the group task was presented. For participants in the goal condition it was presented as an inter-group competition; for those in the no goal condition it was not framed in any special way.

Procedure and independent variables. The experiment was run on computers and was presented as a study on perception and creativity. Upon arrival, participants (7-10 per session) were seated in cubicles. It was explained that we were looking for a relation between creativity and different ways of perceiving. Participants were categorized into groups by means of an adapted Klee-Kandinski paradigm (see for example Oakes & Turner, 1980). The participants had to rate ten paintings (5 by Klee, 5 by Kandinski) for attractiveness. The paintings were presented as a means by which the computer could assess whether the participant was an analytical or a synthetic perceiver. All participants were in fact categorized as synthetic perceivers. After categorization we checked that participants were aware of their social category.

All participants were then given the opportunity to show in-group bias by rating group products (colored pictures). They judged a series of ten colored pictures in terms of creativity and attractiveness. These pictures all consisted of the same abstract image (a collection of triangles, squares and circles) in which only the color combinations were varied. Half the pictures were presented as being made by members of the in-group and the other half as being made by members of the out-group. We told them that the pictures were created in previous
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Experimental sessions. With the help of a pilot study \((N = 15)\) we created two groups of pictures that were equal in creativity and attractiveness.

After the picture ratings participants filled out self-esteem items. Then they participated in a group task. The task consisted of making a colored picture with three other in-group members. The framework of this picture was the same as that used in the pictures participants had rated in order to measure in-group bias. There was no face-to-face contact during the task; interaction “took place via the computer network.” Participants sat at their computer and registered their color preferences while observing the choices made by their in-group fellows. In fact, the responses of the “other members” were generated by the computer and were the same for all participants.

The critical manipulation was the way in which the task was framed. In the no goal condition, participants were only given instructions about how to work on the task. In addition to this information, for participants in the goal condition we framed the task in terms of an intergroup competition. We told the participants that the subgroup (synthetic or analytic perceivers) that created the most attractive picture would be rewarded with record tokens worth forty Dutch guilders (approximately $16), which is a standard value for which one can buy one Compact Disc. In order to decide which group had created the most attractive picture, a two-step procedure would be used. First, after each session of the experiment, the computer system (which we explained contained a database of color combination preferences made by more than 1000 persons) would select the group that had made the most attractive picture. Secondly, after all sessions, the products of the groups that “won” their session would be presented to a jury who would make a final decision about which picture was the most attractive one. Thus in order to win the prize, the first step was to beat the out-group in that particular session. Note that participants’ evaluations of the group products (i.e., the in-group bias measures) could not affect their chances of receiving the prize. Thus in-group bias could not be explained simply in terms of self-interest.\(^3\) Moreover, there was no direct way in which an individual participant could win the prize: They had to co-operate with the in-group in constructing the picture, and were dependent on other participants to receive a reward for it. In other words, the situation can be characterized as interdependence of fate between the participants. Furthermore, there is a real conflict between the groups about material resources: If one group wins, the other loses. Finally, it should be noted that there was a relation between the categorization, the in-group bias measure, and the group task: They all have to do with creativity and aesthetic judgments. It therefore

\(^3\) It was explicitly mentioned that the data-base on which the first assessment of pictures was made was formed on the basis of a “pre-test”, and that the current study was the first in which “mode of perceiving” (i.e. the group distinction) would be linked to certain color combinations. In other words, this rules out the possibility of indirect self-interest and that participants would show in-group bias because they expected the participants whose responses were in the data-base had done the same (a reciprocity principle; see Rabbie, 1993).
seems reasonable to argue that the minimal groups should have become more meaningful for their members in the course of the experiment.

After the group task, the participants rated the same pictures as at Time 1. As a rationale for rating pictures twice we told the participants that we were interested in their judgments after they had some practice with combining colors. Next, participants completed measures of self-esteem (Time 2), were debriefed, and thanked for their participation.

Dependent measures. All measures were taken via the computer. Participants made their responses by placing a cross with the computer mouse on a line on the screen. The line was a 100-point scale with not at all and very much as endpoints.

Our primary dependent measure was in-group bias. We included two types of in-group bias measure: a direct measure (picture ratings) and a more symbolic one. For the direct measure we used the picture judgments made at Time 1 and Time 2. By subtracting the scores for out-group pictures from those of the in-group pictures an in-group bias scale was created. Higher scores indicate stronger in-group bias.

For the symbolic measure of in-group bias, participants responded to three questions: “Synthetic perceivers are better than analytical perceivers,” “Synthetic perceivers know more about art than analytical perceivers,” and “Analytical perceivers deserve little respect for their achievements.” Participants responded only once to these items, just after the second series of picture ratings.

To measure self-esteem we used a translated version of the 4-item private subscale of Luhtanen and Crocker’s (1992) collective self-esteem scale, modified for the current inter-group context. An example item is: “I’m glad to be a member of the synthetic perceivers group.”

Results

The manipulation check revealed that all participants reported their group membership in accordance with the manipulation. Two in-group bias scales (in-group bias at Time 1 and Time 2) were constructed on the basis of the picture ratings. First, scales were created for creativity and attractiveness for in-group and out-group, before and after the task (eight scales in all; αs > .71). Then these eight scales were reduced to four in-group bias scales by subtracting the mean ratings of out-group pictures from the mean ratings of in-group pictures. Finally, the scores on attractiveness and creativity were averaged, resulting in two in-group bias scales (in-group bias at Time 1 and Time 2). The three items measuring symbolic in-group bias also formed a reliable scale (α = .84).

The scores for in-group bias on the picture ratings were submitted to a mixed-model ANOVA with one between-participants factor (Group goal: No goal vs. Goal) and one within-participants factor (In-group bias measurement: Time 1 vs. Time 2). The predicted interaction was significant, $F(1, 35) = 5.72, p < .05; \eta^2 = .13$. In line with predictions, at Time 1 the goal
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condition \((M = 3.89, SD = 7.63)\) and no goal condition \((M = 2.81, SD = 5.02)\) did not differ from each other in terms of in-group bias, \(F(1, 37) = 0.28, ns.\) In fact, both conditions showed significant in-group bias compared to zero \((ps < .05)\). At Time 2 participants in the goal condition \((M = 6.78, SD = 9.90)\) showed more in-group bias than did those in the no goal condition \((M = -0.63, SD = 8.61)\), \(F(1, 37) = 6.24, p < .05; \eta^2 = .10.\) We also performed separate analyses for in-group and out-group pictures. These revealed no significant effects. This indicates that in-group bias was not strictly in-group favoring or out-group derogating but a combination of the two. There were no effects of gender.

A single factor ANOVA (Group goal: No goal vs. Goal) was performed to analyze the scores on the symbolic in-group bias scale. Participants who had a group goal showed more in-group bias on this measure \((M = 40.67, SD = 18.20)\) than did those who had no goal \((M = 27.98, SD = 20.46)\), \(F(1, 37) = 4.17, p < .05; \eta^2 = .10.\) As with the pictures measure, there were no effects of gender.

To explore the motivational basis for in-group bias on the picture ratings at Time 1, we computed a series of correlations. The reliability of the collective self-esteem scale at Time 1 was low \((\alpha = .41)\). A factor analysis revealed a two-factor solution with the two positive items loading on one factor, and the two negative on the other. We decided to continue analyses with the two positive items only because the reliability of these two items \((\alpha = .82)\) was higher than it was for the two negatively formulated items \((\alpha = .52)\). There was a significant correlation between in-group bias at Time 1 and self-esteem \((r = .38, p < .05)\). However, self-esteem at Time 2 (same two items \([\alpha = .93]\)) was not reliably related to in-group bias at Time 2 (in either condition separate or together, \(r_s < .1\)).

Discussion

The results provide some preliminary evidence for the proposed functional analysis of in-group bias. At the beginning of the experiment all participants showed some degree of in-group bias that was related to self-esteem (identity function). However, when the inter-group situation became more meaningful, in the sense that the participants had been able to show in-group bias and to interact on a group task, those with a group goal showed stronger in-group bias than did those without a group goal. Moreover, at Time 2, in-group bias was not related to self-esteem. We explain the in-group bias at Time 1 in terms of an identity function as described by social identity theory (Tajfel & Turner, 1986), and in-group bias at Time 2 in terms of an instrumental function as described by interdependence or realistic conflict approaches (Gaertner & Insko, 2000; Rabbie, 1993; Sherif & Sherif, 1969).

The fact that we did not find clear in-group favoritism and/or out-group derogation in isolation, but a combination of both is in line with Tajfel et al. (1971), in that the motivation for differentiation per se (the Maximum Differentiation strategy) is stronger than its components
(favoritism and derogation). It is also worth noting that in-group bias in the concrete judgments of pictures also generalized to the symbolic in-group bias measure. This presumably results from the competitive inter-group situation confronting participants in the goal condition. Note that in-group bias on both measures cannot readily be explained by individual self-interest per se, in that neither set of ratings translates directly into the winning of the inter-group competition. Rather, in-group bias suggests a psychological preparation to engage in inter-group competition at the group level. In other words, the instrumental function has a psychological component relating to the group-level self-definition (Jackson & Smith, 1999) which is more than simply gaining a distinctive identity, and which is not reducible to individual self-interest. In-group bias here is instrumental in a psychological sense, a refinement not always evident in realistic conflict theory, where conflict often bears a more direct material relation to the achievement of group goals. Furthermore, it is hard to explain the results at Time 1 in terms of realistic conflict or interdependence of fate (Gaertner & Insko, 2000; Rabbie et al., 1989) because no material resources were at stake. Because the in-group bias was mainly symbolic we favor an explanation of these results in terms of SIT (Rabbie, 1993; Rabbie & Schot, 1990).

The fact that we only found a relation between in-group bias at Time 1 and the positively formulated self-esteem items might be explained in terms of the paradigm used. Although participants might feel to some extent glad and good to be included in the group synthetic perceivers, it seems less plausible to feel regret because of inclusion in this minimal category. Related to this issue, Hunter, Platow, Howard, and Stringer (1996) and Rubin and Hewstone (1998) have proposed that domain specific measures of self-esteem should be used to examine the relation between self-esteem and in-group bias. Therefore, in Study 2.2 we included a more specific measure of self-esteem.

Although we obtained evidence for our model, some questions remain to be addressed. As stated in the introduction, we predict that the identity function has some primacy over the instrumental function: Without meaning, people will not engage in instrumental goal setting. We therefore conducted a second study in which we manipulated the possibility to show in-group bias at Time 1. We also sought to discern identity and instrumental functions more directly by means of additional measures and mediation analyses.

### Study 2.2

In the second experiment we manipulated the presence of a goal and the possibility to differentiate the in-group from the out-group at Time 1 (i.e., the possibility to show in-group bias) orthogonally, leading to four conditions: “no goal, no differentiation;” “goal, no
differentiation;" “no goal, differentiation;” and “goal, differentiation.”4 Those in the “no differentiation” conditions rated the same pictures as those who could differentiate at Time 1, although there were no category labels attached to the pictures. As a check on our differentiation-opportunity manipulation we expected that participants in the two differentiation conditions would favor their own group’s pictures more (and the out-group’s pictures less) than those with no differentiation opportunity. The two differentiation conditions are identical to the conditions of Study 2.1. We therefore expected identical effects in the “goal, differentiation” condition as in the goal condition in Study 2.1 and will call this condition the “instrumental” condition. However, the current design also has interesting implications for the proposed identity function. If there is a fundamental motivation to differentiate one’s group positively from the out-group, in the conditions where there was no opportunity to differentiate at Time 1 this motivation should still be evident at Time 2. In fact, this motivation may even be stronger after it has been blocked or delayed (Atkinson & Birch, 1970; Wicklund & Gollwitzer, 1982). Therefore we also expected stronger in-group bias at Time 2 for those who had had no prior opportunity to differentiate compared to those who had already had a prior differentiation opportunity. Moreover, if it is the search for a meaningful identity that drives the identity function, for those who had had no prior possibility to differentiate and no group goal, the motivation to show in-group bias at Time 2 should be strongest because this constitutes the least meaningful situation of the design. Therefore, we will call the “no goal, no differentiation” condition the “minimal” condition. For those who had had no differentiation opportunity but who faced a group goal, the situation was probably more meaningful because they could derive meaning from the goal itself (i.e., interdependence of fate; Rabbie et al., 1989). This “goal, no differentiation” condition differs in an important respect from the “instrumental” condition. Because people in the “goal, no differentiation” condition did not have the opportunity to differentiate on the central dimension, we predicted that they would be less likely engage in group-goal directed behavior than those who had. Although the goal can give meaning to the category, we thought they would be somewhat reluctant to work for a group when group-distinctiveness for them has yet to be established.

In summary, we expected strongest in-group bias, albeit for different motives, in the most “minimal” cell of our design (“no goal, no differentiation”) and the most “instrumental” cell of our design (“goal, differentiation”). Besides self-esteem, we also measured to what extent participants thought that there were instrumental reasons to use in-group bias. We expected self-esteem to be mediated by in-group bias in the “minimal” condition (identity function) but not in

4 We will use the term “differentiation opportunity” here instead of “in-group bias opportunity” for two reasons: First, this term forms a more precise description of the manipulation (i.e., the manipulation also allows participants to display out-group favoritism; “differentiation opportunity” is therefore the more general term); Second, using distinct terms avoids confusion of the independent and dependent variables.
the “instrumental” condition. In the “instrumental” condition, but not in the “minimal” condition, we expected the instrumental function to mediate in-group bias (instrumental function).

A second objective of this study is to extend the current motivational analysis to “negative” contexts. That is, we changed the group goal from trying to win a prize to trying to avoid punishment. This punishment was operationalized by stating that the group with the worst pictures would have to stay in the lab to fill out additional questionnaires. There is evidence that discrimination within the MGP is stronger with respect to the allocation of positive as compared to negative resources (Mummendey & Otten, 1998). Changing the group goal to punishment avoidance can therefore be seen as a more conservative test of our model.

A final objective of this second experiment was to extend the current functional analysis to other psychological constructs relating to group identity versus instrumentality. To this end we measured some additional variables: Cohesion, identification and effort. We proposed that the first two measures can have both an instrumental and an identity function. For instance, cohesion might be related to goal directed behavior (Mullen & Copper, 1994) as well as being a reflection of positive distinctiveness (i.e., entitativity; e.g., Brewer & Harasty, 1996; see also Hogg, 1992; Scheepers, Branscombe, Spears, & Doosje, in press, for the identity function of cohesion). Moreover, people may on the one hand identify with a group in order to give meaning to that category (identity function; Tajfel & Turner, 1986) and on the other hand identify with a group as a preparation for social change (instrumental function, e.g., Doosje, Spears, & Ellemers, 2002). We therefore predicted cohesion and identification to be highest in the “minimal” condition (identity function), and in the “instrumental” condition (instrumental function). We measured the effort participants invested in the task by means of the time they spent on the task. Because we thought effort might serve instrumental functions (winning the competition) we predicted that participants in the “instrumental” condition would spend the most time performing the task.

In summary, we expected the strongest effects on in-group bias (and related measures) in the most “minimal” condition (“no goal, no differentiation”) and the most “instrumental” condition (“goal, differentiation”). We also expected in-group bias in the minimal condition to mediate self-esteem (in keeping with the identity function), and in-group bias in the instrumental condition to be mediated by the instrumental function (in keeping with the instrumental function).

**Method**

**Participants and design.** Seventy-six first-year psychology students (26 males and 50 females) participated in this experiment and received course credits. Their mean age was 21 and they were randomly allocated to a 2 (Group goal: No goal vs. Goal) X 2 (Differentiation
opportunity: No Differentiation vs. Differentiation) between-participants design.

*Procedure and independent variables.* The procedure was identical to that of Study 2.1, with a few exceptions. In the conditions where there was no possibility to show differentiation, participants rated the same pictures at Time 1 as those rated by participants in the other conditions, but no category labels were attached to the pictures. It was simply stated that the pictures were made “by groups of synthetic and analytical perceivers in earlier sessions of this research.” After the picture ratings, for those in the goal conditions a goal was induced in the same way as in Study 2.1. However, in this second experiment we changed the chance of winning a prize to the chance of avoiding punishment. Participants were told that the group with the worst pictures would have to stay longer in the lab to complete some additional questionnaires.

*Dependent variables.* We measured in-group bias by means of picture ratings and by using a more general symbolic measure, as in Study 2.1. Also, at Time 2, the participants who did not have the opportunity to differentiate at Time 1 were given the possibility to do so along with the other participants.

Just before the group task we measured perceived cohesion using five items. Because there are no established measures for assessing cohesion in minimal groups, we selected the items useful for this purpose from the measures described by Hogg (1992). An example is: “Synthetic perceivers form a close-knit group.” During the task, we measured the effort participants invested in it. As an operationalization of effort, we measured the amount of time participants worked on the task.

The remaining constructs were measured after the group task and after the in-group bias measures. We used six items to measure specific self-esteem with regard to the relevant dimension (creativity and good taste) in the inter-group situation. An example of a “specific self-esteem” item was: “I’m pleased with the creativity of the group synthetic perceivers” (see Hunter et al., 1994, and Rubin & Hewstone, 1998 for discussions of why dimension-specific self-esteem is the best measure for testing the relation between self-esteem and discrimination). We measured the instrumental function of in-group bias with three items (e.g., “To what extent do you think participants differentiated between groups in this experiment to make their group stronger?”). We included the four identification items by Jetten et al. (1996). A typical example is: “I feel strong ties with the synthetic perceivers group.”

*Results*

The data were analyzed using 2 (Group goal: No goal vs. Goal) X 2 (Differentiation opportunity: No Differentiation vs. Differentiation) ANOVAs and MANOVAs. As in Study 2.1, there was no effect of gender in any of the analyses.
In-group bias. All participants reported their group membership correctly. We calculated in-group bias measures on the basis of the picture ratings in the same way as in Study 2.1. The reliability of these scales was satisfactory (αs > .71). The symbolic in-group bias scale also proved to be reliable (α = .84). We included the picture ratings at Time 1 in a 2 X 2 ANOVA. There was only a main effect for differentiation opportunity, $F(1, 72) = 4.71, p < .05; \eta^2 = .06$. In line with the proposed manipulation, participants who had a differentiation opportunity at Time 1 favored in-group pictures ($M = 3.46$) to a greater extent than did those who had no differentiation opportunity ($M = 0.39$). Moreover, the in-group bias in these conditions differed significantly from zero ($p < .05$). We therefore can conclude that our differentiation opportunity manipulation succeeded.

The means with regard to the two in-group bias measures at Time 2 are displayed in Table 2.1. We expected highest in-group bias in the “instrumental” condition (“goal, differentiation”) and in the “minimal” condition (“no goal, no differentiation”). We analyzed the two in-group bias measures at the multivariate level using a 2 X 2 MANOVA. There was a multivariate interaction between the two factors, $F(2, 72) = 3.06, p = .05; \eta^2 = .08$. As can be seen in Table 2.1, those in the “minimal” condition and in the “instrumental” condition showed highest in-group bias on both measures at Time 2.

Although there were no univariate effects on the picture measure, there was a reliable univariate main effect for in-group bias opportunity on the symbolic measure, $F(1, 72) = 4.47, p < .05; \eta^2 = .06$. Those who had no prior differentiation opportunity at Time 1 showed more in-group bias at Time 2 ($M = 35.38$) than did those who had already had a differentiation opportunity ($M = 25.88$). The univariate interaction on the symbolic measure was also significant, $F(1, 72) = 5.12, p < .05; \eta^2 = .07$. Testing the univariate simple main effects revealed a marginally significant difference between the participants in the “instrumental” condition and the “no goal, differentiation” condition, $F(1, 72) = 2.88, p < .10; \eta^2 = .04$. The simple main effect between the “minimal” condition and the “no goal, differentiation” condition proved to be significant, $F(1, 72) = 9.84, p < .01; \eta^2 = .12$. In sum, participants showed strongest in-group bias in the “minimal” condition and the “instrumental” condition. Although the multivariate in-group bias interaction was significant and means are in the predicted direction, in-group bias was stronger on the indirect (symbolic) than on the direct (picture) measure.

Identity and instrumental functions. The scales proposed to measure identity (self-esteem; α = .92) as well as instrumental functions (α = .80) both proved to be reliable. There were significant interactions on self-esteem, $F(1, 72) = 7.79, p < .01; \eta^2 = .10$, and on the instrumental function, $F(1, 72) = 5.49, p < .05; \eta^2 = .07$ (see Table 2.1).
Table 2.1
Means and Standard Deviations on In-group bias, Self-esteem, the Instrumental Function, Cohesion, Identification, and Effort as a Function of Differentiation Opportunity and Group Goal (Study 2.2)

<table>
<thead>
<tr>
<th>Measure</th>
<th>No Differentiation</th>
<th>Differentiation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No Goal (Minimal)</td>
<td>Goal</td>
</tr>
<tr>
<td>In-group bias (pictures)</td>
<td>M 7.40 (11.95)</td>
<td>3.36 (8.14)</td>
</tr>
<tr>
<td>Symbolic in-group bias</td>
<td>M 39.83 (19.91)</td>
<td>30.68 (20.89)</td>
</tr>
<tr>
<td>Self-esteem</td>
<td>M 59.23 (16.50)</td>
<td>46.11 (19.14)</td>
</tr>
<tr>
<td>Instrumental function</td>
<td>M 53.32 (23.16)</td>
<td>45.32 (19.71)</td>
</tr>
<tr>
<td>Cohesion</td>
<td>M 42.90 (21.16)</td>
<td>33.46 (17.41)</td>
</tr>
<tr>
<td>Identification</td>
<td>M 45.09 (24.59)</td>
<td>32.37 (20.42)</td>
</tr>
<tr>
<td>Effort</td>
<td>M 47.75 (14.66)</td>
<td>44.58 (14.12)</td>
</tr>
</tbody>
</table>

Note. Higher scores indicate higher levels of in-group bias, self-esteem, the instrumental function, cohesion, identification, and effort. Effort is expressed in the amount of seconds the participants worked on the task.
Self-esteem was reliably higher in the “minimal” condition than in the “goal, no differentiation” condition, $F(1, 72) = 5.67, p < .05; \eta^2 = .07$, and the “no goal, differentiation” condition, $F(1, 72) = 5.79, p < .05; \eta^2 = .07$. Furthermore, participants scored higher on the instrumental function in the “instrumental” condition than in the “goal, no differentiation” condition, $F(1, 72) = 4.60, p < .05; \eta^2 = .06$. There were no other reliable simple main effects. In sum, participants in the most “minimal” condition scored highest on self-esteem, whereas participants in the most “instrumental” condition scored highest on the instrumental function.

Following Baron and Kenny (1986) we tested mediation models corresponding to identity and instrumental functions. First, we tested whether self-esteem in the “minimal” condition was mediated by in-group bias; second, we tested whether in-group bias was mediated in the “instrumental” condition by the instrumental function. We tested mediation for specific simple main effects on in-group bias because we had similar effects in the two critical conditions (i.e. in-group bias was highest in the “minimal” condition and the “instrumental” condition), but expected different functions to be served by these two effects. In other words, showing mediation for the full interaction would not be sufficient for disentangling these different functions. A strong case for different functions operating in different conditions would be made if the predicted mediator applies to one relationship (e.g., an identity function in the “minimal” condition) but not to the other (e.g., no identity function in the “instrumental” condition). We used the symbolic in-group bias measure in the analyses below because this was the only measure that revealed effects at the univariate level. We focused on the differences between the “minimal” and “instrumental” condition on the one hand and (in both cases) the “no goal, differentiation” condition on the other, because the critical comparison for the identity function is the presence and absence of a differentiation opportunity, and for the instrumental function the presence or absence of a group goal. In other words, the comparison between the “minimal” condition and “no goal, differentiation” condition reflects the clearest comparison between those who had and those who did not have a differentiation opportunity at Time 1. Second, because we propose that the instrumental function does not come into play without some sense of group distinctiveness, in order to assess the instrumental function we compared those who had and those who did not have a group goal after a differentiation opportunity (i.e. “no goal, differentiation” condition versus “instrumental” condition).

Full mediation requires three steps (Baron & Kenny, 1986): First, a relation between the criterion and the predictor (the original effect to be mediated; step 1); second, a relation between the predictor and the proposed mediator (step 2), and finally a significant decrease of initial relationship between predictor and the criterion when controlling for the mediator (step 3).

5 We also tested mediation for the full interaction by means of an ANCOVA procedure. Both mediations were also shown by means of these less specific analyses.
For the identity function we tested whether the “minimal condition” – “no goal, differentiation” simple main effect on in-group bias mediated the similar effect on self-esteem. Regressing self-esteem (the criterion) on differentiation opportunity (the predictor) resulted in a reliable effect: $\beta = -.37, p < .05$ (step 1). Moreover, the relation between differentiation opportunity and in-group bias at Time 2 (the mediator) was also significant, $\beta = -.47, p < .01$ (step 2). When regressing self-esteem on symbolic in-group bias and differentiation opportunity simultaneously, the effect of differentiation opportunity decreased ($\beta = -.12, p = .41$), while the effect of the mediator remained significant, $\beta = .51, p < .01$ (step 3). The Sobel test (see Baron & Kenny, 1986) showed that the decrease in the direct effect of differentiation opportunity on self-esteem when controlling for in-group bias was reliable ($Z = 2.42, p < .05$).

To assess whether identity motives also drove in-group bias in the “instrumental” condition we performed a similar analysis for the “no goal, differentiation” – “instrumental condition” simple main effect. However, there was no direct effect of group goal on self-esteem (step 1), $\beta = .26, p > .10$ (i.e., no effect to be mediated). In sum, the effect on self-esteem in the “minimal” condition, but not that in the “instrumental” condition was mediated by symbolic in-group bias as predicted.

We then assessed whether higher in-group bias in the “instrumental” condition was mediated by the instrumental function. To test this we focused on the “no goal, differentiation” – “instrumental condition” simple main effect. The presence of a group goal (the predictor) marginally predicted in-group bias (the criterion), $\beta = .30, p < .08$ (step 1). Moreover, there was a significant effect of presence of a goal on the instrumental function (the mediator; step 2), $\beta = .40, p < .05$. When regressing in-group bias on the instrumental function and presence of a group goal simultaneously, the effect of group goal decreased ($\beta = -.14, p = .36$) while the effect of the mediator remained significant, $\beta = .45, p < .05$ (step 3). The Sobel test indicated a significant decrease of the initial effect of presence of a group goal ($Z = 1.80, p < .05$, one-tailed). When applying the same analyses to the “minimal condition” – “goal, no differentiation” simple main effect, no evidence of mediation was found. After controlling for the instrumental function, the initial effect of differentiation opportunity on symbolic in-group bias remained significant, and the Sobel test was non-significant. In sum, the effect on in-group bias in the “instrumental” condition, but not the “minimal” condition, was at least partially mediated by the instrumental function.

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6 We dummy-coded the presence of a group goal (no goal vs. goal) and differentiation opportunity (no vs. yes) as 0 and 1. This means that the betas for the relations between differentiation opportunity on the one hand, and in-group bias and self-esteem on the other, are negative because in the “minimal” condition, no opportunity to differentiate at Time 1 results in more in-group bias and self-esteem at Time 2.

7 The directed nature of our prediction (i.e., we expected a decrease of the original effect) justified one-tailed testing.
Cohesion, identification, and effort. The scales for cohesion ($\alpha = .83$) and identification ($\alpha = .88$) both proved to be reliable. There were reliable interactions on cohesion, $F(1, 72) = 4.77, p < .05; \eta^2 = .06$, and identification, $F(1, 72) = 5.89, p < .05; \eta^2 = .08$. As can be seen in Table 2.1, the highest scores on these measures were in the in the "minimal" condition and in the "instrumental" condition.

There was also a significant interaction with respect to the time participants invested in the group task, $F(1, 72) = 4.19, p < .05; \eta^2 = .06$. As can be seen in Table 2.1, those in the "instrumental" condition invested most time in the task. The difference between the "instrumental" condition and the "no goal, differentiation" condition proved to be reliable, $F(1, 72) = 4.52, p < .05; \eta^2 = .06$.

Discussion

The results of Study 2.2 largely replicate and also extend those of Study 2.1. In the "instrumental" condition and the "minimal" condition participants showed highest in-group bias, cohesion, identification, and self-esteem. The results on the symbolic in-group bias measure were mediated by the instrumental function in the "instrumental" condition but not in the "minimal" condition. Conversely, the results on symbolic in-group bias mediated self-esteem enhancement in the "minimal" condition but not in the "instrumental" condition. In sum, we have evidence of an instrumental function of in-group bias in the "instrumental" condition and an identity function in the "minimal" condition, in line with predictions. Finally, those in the instrumental condition put most effort into the task. This latter result shows that people who had a goal but no prior differentiation opportunity did not work for the (as yet non-distinctive) group.

The effects in the "minimal" condition are best explained, we would argue, as resulting from the active search for a meaningful and distinctive group identity. In this condition the opportunity to seek group distinctiveness was blocked at Time 1. At Time 2 they showed highest in-group bias which was reflected in higher levels of self-esteem. Also with regard to the other measures (identification, cohesion) we propose that the participants in the "minimal" condition used these to give some meaning to an otherwise meaningless social category. Although the search for meaning and distinctive identity is central to the social identity approach (Tajfel, 1978; Turner et al., 1987), this is to our knowledge the first demonstration of this principle in operation. The fact that the identity motivation in this condition transferred to a later stage in the experiment in our eyes illustrates the fundamental nature of the motivation to give meaning to one's group (Atkinson & Birch, 1970; Wicklund & Gollwitzer, 1982). Moreover, the fact that no significant increase in effort was observed in this condition is also consistent with the proposition that meaning ascription must precede an instrumental function, and that effort is more instrumental than expressive of identity. Indeed if we consider the levels of in-group bias,
and scores on the cohesion, identification, and self-esteem measures, these were always highest in the “minimal” condition (evidence for the identity function), and the measure of effort is the only exception to this pattern.

We explain the effects in the “instrumental” condition in terms of an instrumental function of in-group bias. The participants in this condition had had the opportunity to differentiate their group in a meaningful way from the out-group, a prerequisite for gaining a distinctive group identity in this context, and allowing other motivations to operate. After that, they were confronted with a goal that could only be fulfilled by intra-group co-operation and inter-group competition. This instrumental motivation mediated in-group bias, led to more effort in the task, and was also reflected in stronger group commitment, and higher perceived cohesion. Interestingly, participants in this condition also showed higher self-esteem than those in the two intermediate conditions, although this effect was not mediated by in-group bias. We will return to this effect below.

Some explanation needs to be given for why the effects were stronger on the symbolic in-group bias measure than on the picture ratings. These results do not replicate the findings in Study 2.1. The more negatively-framed group goal might responsible for this. As noted in the introduction to this experiment, people are more reluctant to display in-group bias on negative dimensions within the MGP (Mummendey & Otten, 1998). This second experiment can therefore be regarded as a more conservative test of our model. It is important to note that it was not the allocations that were negative in valence but rather the consequences of failing on the group task. However, participants still might have been more reluctant to show in-group bias on the dimension that directly affected the fate of in-group and out-group in this context (the attractiveness/beauty of the pictures). On a more abstract and indirect measure (the symbolic measure), participants were less reluctant to claim in-group superiority. Taken one step further, the effect on the specific self-esteem scale in the “instrumental” condition can be interpreted as a superiority claim at an even more abstract (but dimension-related) level. Expressing pride and satisfaction with group performance can be regarded as favoritism on behalf of a solid group, moving to instrumental goals. In other words, in this more negative context participants may have been reluctant to claim superiority directly when superiority meant punishing the out-group, although at a more abstract level they still showed in-group favoritism.

**General discussion**

We began this chapter by distinguishing between two different approaches to in-group bias, one focusing on identity, and the other focusing on interdependence and group goals. We proposed that both orientations are valid, but that each provides a better explanation for in-group bias under specific circumstances. We distinguished between the identity and instrumental
functions of in-group bias. The former is well elaborated by social identity theory (Tajfel & Turner, 1986), and the latter is represented by interdependence and realistic conflict approaches (Rabbie, 1993; see also Gaertner & Insko, 2000; Sherif & Sherif, 1969). We hypothesized that in-group bias might have different functions in different contexts. Specifically, we predicted that under more or less "minimal" group circumstances, like the minimal group paradigm, in-group bias might primarily serve an identity function, whereas under competitive inter-group circumstances in-group bias might serve an instrumental function.

In Study 2.1 we showed that in-group bias can be a reaction to a new and as yet relatively "meaningless" group membership. We explained this effect, that was correlated with self-esteem, in terms of the search for a meaningful and distinctive group identity (Tajfel, 1969, 1978). That is, in-group bias can help to define a group's place within the social structure, and indeed reassure its members that it actually exists as an entity. Later in the experiment, when the group was more meaningful due to prior in-group bias and the performance of a group task, those with a competitive group goal showed stronger in-group bias than those without such a goal. In the second experiment with a different design it was again shown that participants are most likely to favor the in-group either under meaningless situations (again reflected in higher self-esteem), or after in-group bias has afforded a distinctive group identity which is also accompanied by an instrumental goal (instrumental function). Moreover, we showed that the two functions are also reflected in other psychological constructs relating to the group (identification, cohesion), and found evidence that the relevant functions mediated the relevant effects. Finally, we showed that primarily instrumental contexts (but not contexts driving identity motives) are related to greater effort on behalf of the group. This is in line with our argument that the instrumental functions can only come into play when the group has sufficient meaning to motivate instrumental behavior in the service of group identity.

A further theoretical contribution of these studies comes from the integration of psychological concepts into RCT, and the suggestion that more than purely material interests are at work in the "instrumental" context. The role of intra-psychological mechanisms in RCT has remained somewhat ambiguous. The results in the most instrumental condition for the group cohesion, identification, and self-esteem measures in particular (Study 2.2), provide clear evidence of psychological effects that are difficult to reduce to self-interest (even the in-group bias measures were not directly related to group outcomes). These psychological effects may be a passive reflection of the competitive nature of the situation or may represent more active psychological preparation for group mobilization.

The interactive pattern found in our data undermines any attempt to explain the in-group bias found in our studies exclusively in terms of one of the two theoretical traditions that are proposed to underlie the identity/instrumental distinction. For example, recent debates about
whether the minimal group effect is best be explained by interdependence principles or in terms of social identity theory suggest a quest for the critical experiment and “one theory takes all” (see, e.g., Bourhis, Turner, & Gagnon, 1997; Gaertner & Insko, 2000). The present findings are not consistent with this quest for a single explanatory theory or principle. Consider the “minimal” condition of Study 2.2, which in the present research is closest to the truly minimal group. If perceived interdependence and reciprocal expectations of rewards among group members in this condition were sufficient to explain in-group bias, this would not explain why in-group bias was lower in the adjacent conditions and then rose again in the most “instrumental” condition. For this reason we think that a combination of these two theoretical traditions (social identity and interdependence) provides the most complete account of our data.

To conclude, what can the dodo offer the study of inter-group relations? Of course it is not our stance that all theories are essentially correct. However, when there is substantial evidence for two seemingly conflicting approaches, as is the case with the social identity and interdependence traditions, we think that both must have prizes. If this makes it sound like our dodo is sitting on the fence we hope that this provides it with a vantage point viewing the two sides of the debate and thereby enables it (quite literally) to fulfill a moderating role. The revised dodo verdict should therefore be “Both have won, both must have prizes, but in different contexts.”