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# Continuing and Changing Group Identities: The Effects of Merging on Social Identification and Ingroup Bias

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*A social identity approach to the investigation of group-based reactions to a merger is outlined, in which a merger is analyzed in terms of the continuation or change of the pre-merger group identity. In two experiments, the relationship between pre-merger identification, post-merger identification, and ingroup bias was investigated using a minimal group paradigm. Results from both studies showed that the perceived continuation of the pre-merger group identity in the post-merger group strengthened the positive relationship between pre-merger identification and identification with the superordinate post-merger group. Moreover, perceived continuation strengthened, rather than reduced, ingroup bias at the subordinate level of the merged groups. Some theoretical and practical implications are discussed.*

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**Keywords:** *changing group identity; merger; social identification; ingroup bias*

Corporate mergers, and their effects on the personnel involved, have been described quite extensively in psychological and organizational literature (e.g., Hogan & Overmyer-Day, 1994; Marks & Mirvis, 1986). Other groups such as families, churches, unions, and even countries frequently undergo the same transformation, albeit under different labels. These merging groups often hold a special importance to their members, particularly in their capacity to form a basis for self-definition (Brewer & Miller, 1996; Deaux, 1996; Hogg & Abrams, 1988; Tajfel & Turner, 1986). In previous research on mergers, it has therefore been suggested that negative reactions to a merger may stem from the fact that mergers force group members to forfeit their pre-merger group identity and adopt a new one (e.g., Haunschild, Moreland, & Murrell, 1994). However, no

empirical study to date has directly investigated how reactions to a merger are rooted in the pre-merger group identity. This article offers an analysis of group identification and ingroup bias following a merger, as a reaction to the continuation or change of the pre-merger group identity. Two experiments are reported, investigating how pre-merger identification is related to post-merger identification and ingroup bias under varying levels of continuation or change.

Fashionable terms such as *merger mania* reveal that in the corporate world alone, mergers are taking place at an astounding rate. But mergers, or the combining of two groups into one, are not limited to organizations. The unifications of former East and West Germany in 1990 and the current European unification are recent examples of how countries are combined. The increasing rate of divorces and second marriages make for a growing number of combined families. Schools are combined as a result of changes in educational systems, and nations combine their armies to create international peace forces. Yet, despite the widespread prevalence of such mergers, they cannot be considered as generally successful. Reviews of organizational mergers, for example, reveal that these are often associated with a drop in psychological attachment to, or identification with, the organization (Schweiger & Walsh, 1990; Terry, Carey, &

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Callan, 2001; van Knippenberg, van Knippenberg, Monden, & de Lima, 2002; van Leeuwen & van Knippenberg, 2003), intergroup hostility and bias among the members of the merged organizations (Skevington, 1980; Terry & Callan, 1998), and a general resistance to the merger (Haunschild et al., 1994).

#### *Changing Group Identities*

One frequently offered cause for these negative reactions to mergers is that they force people to change or abandon a valued group identity (Terry et al., 2001). Because a group provides a basis for self-definition (cf. social identity theory: Tajfel, 1978; Tajfel & Turner, 1986, and self-categorization theory: Turner, 1985; Turner, Hogg, Oakes, Reicher, & Wetherell, 1987), group members are usually motivated to preserve their group and its distinctiveness from other groups. A merger could force group members to change the way they define themselves in relationship to the partner to the merger. Group members who previously saw themselves in terms of attributes that distinguished their group from the merger partner often are required to change this self-perception to include characteristics that are shared with this merger partner. This kind of threat to the distinctiveness of the pre-merger group identity can evoke an array of reactions aimed at restoring this identity, including ingroup bias (Branscombe, Ellemers, Spears, & Doosje, 1999). Moreover, group members relatively high in identification with their pre-merger group are more likely than low identifiers to feel threatened (Branscombe et al., 1999).

#### *Continuing Group Identities*

Previous social identity analyses of mergers have offered the changing of the pre-merger group identities as a cause for ingroup bias and resistance to the merger (e.g., Terry & Callan, 1998). However, a merger does not always require group members to forfeit their old identity completely. Some mergers could be construed (at least to the members of the dominant party) as a continuation of the pre-merger group. Two recent studies conducted by van Knippenberg et al. (2002) investigated the relationship between pre- and post-merger identification in two organizational mergers. In both studies, one of the merged organizations clearly dominated the other because it was larger (Study 1) or because it was needed by the other party who could not survive without the merger (Study 2). In both studies, identification with the pre-merger organization was positively related to identification with the post-merger, combined organization, but only for members of the dominant party. For members of the nondominant party, no significant relationship existed between pre- and post-merger identification. A similar finding was obtained by Terry et al.

(2001), who investigated reactions to the merger of two airline companies. One of these, a domestic carrier of relatively low status, was acquired by the other, an international carrier of high status. Employees of the high-status company identified more strongly with the combined post-merger organization than did employees of the low-status company. Although none of these studies directly measured perceived continuation or change of the pre-merger group identity, all of these results are in line with the suggestion that members of a dominant party may construe a merger as a partial continuation of their pre-merger organization and continue to identify with what they still perceive as "their" organization after the merger. In contrast, members of a nondominant party may find themselves in a situation where they were required to adopt a new group identity one.

An additional finding of the Terry et al. study (2001; see also Terry & Callan, 1998) was that employees of the high-status company showed more ingroup bias than did employees of the low-status company on dimensions related to the status difference (i.e., technical expertise and professional attitudes). A similar finding was obtained in a laboratory study by Haunschild et al. (1994), who found that more successful groups showed more resistance to a merger and displayed stronger ingroup biases than less successful groups. If members of the dominant or more successful group experience the merger more as a continuation of their pre-merger group identity than members of the nondominant group (as demonstrated by Terry et al., 2001; van Knippenberg et al., 2002), then why would members of the dominant group show *more* ingroup bias than members of the nondominant group?

Perceived continuation of the pre-merger group identity implies that the pre-merger group is continued as the post-merger, more inclusive, group identity. When a post-merger group is perceived as essentially a continuation of the dominant pre-merger group, the post-merger group will be perceived as more similar to this dominant group. Consequently, the nondominant merger partner will be perceived as more dissimilar or deviant from the shared post-merger group. This argument is in line with the "ingroup projection model" (Mummendey & Wenzel, 1999), which has received accumulating support since its introduction (Waldzus, Mummendey, Wenzel, & Boettcher, 2002; Waldzus, Mummendey, Wenzel, & Weber, 2003; Wenzel, Mummendey, Weber, & Waldzus, 1999). Central to this research is the tendency for group members to perceive their ingroup, relative to an outgroup, as more prototypical of an inclusive category. Because shared categories not only provide the dimensions for group comparison but also the norms and values that determine the outcome of this comparison process, perceived relative

ingroup prototypicality is associated with more negative attitudes toward the outgroup (Waldzus et al., 2003; Wenzel et al., 1999). Thus, higher levels of perceived similarity between the participants' own subgroup and the inclusive category, relative to the similarity between the other subgroup and the inclusive category, were related to more ingroup bias. Moreover, because this comparison process involves both the subgroup identity and the superordinate group identity, the ingroup projection effect is intensified under conditions of high subgroup identification and high superordinate group identification (Waldzus et al., 2003).

The evidence presented above builds up to the prediction that there should be a stronger and more positive relationship between pre-merger identification (with the original group) and post-merger identification (with the superordinate group) because the merger is increasingly perceived as a continuation of the pre-merger ingroup. With respect to post-merger ingroup bias, our analysis suggests that both under conditions of continuation and under conditions of change, pre-merger identification could be positively related to bias, albeit for different reasons. When a merger is experienced as a change to the pre-merger group, higher levels of pre-merger identification may be associated with more bias in favor of the pre-merger ingroup as an expression of a threatened identity and resistance to change. When a merger is experienced as a stronger continuation of the pre-merger ingroup relative to the continuation of the merger partner, higher levels of pre-merger identification may be associated with more bias favoring the pre-merger ingroup as a reaction to the merger partner's perceived deviance from the post-merger superordinate group. In the following, two studies are reported investigating how post-merger identification and post-merger ingroup bias are affected by concerns for the pre-merger group identity as raised by a merger.

#### STUDY 1

To date, no experimental research has been conducted to investigate the effects of a merger per se, that is, by comparing a merger to a non-merger condition. Yet, this kind of controlled comparison is important for a correct interpretation of empirical findings in merger research. For example, one may find relatively high levels of ingroup bias following a merger, but this outcome loses much of its meaning if similar levels of bias are found in a non-merger situation. To attribute these outcomes to the act of merging, it is essential to make a comparison with a non-merger condition. This was the design of the present study.

The main objective of this first study was to investigate the extent to which reactions to a merger can be attributed to concerns about the pre-merger group identity. A

reduction in post-merger superordinate identification may reflect an individual mobility strategy aimed at acquiring membership in another (higher status) group rather than a threatened pre-merger group identity (Matteson & Ivancevich, 1990). Moreover, a positive evaluation of one's group in comparison to the merger partner could be related to a real status difference between the merged groups rather than an ingroup-favoring bias resulting from a threatened identity (Terry & Callan, 1998). The correlation with pre-merger identification reflects the extent to which post-merger bias and identification are grounded in concerns about the pre-merger group identity. By comparing these relationships to those occurring in a non-merger condition, we can investigate to what extent these concerns, and their effects on post-merger identification and ingroup bias, can be attributed to a merger.

In this study, the merger was constructed as a "merger of equals." That is, both groups were represented in the post-merger group but no group dominated the other in determining the nature of the post-merger group. Thus, the merger would constitute a partial continuation of the pre-merger group identities. By comparison, the non-merger condition would imply a full continuation of the original group identities. It was therefore predicted that pre-merger identification would hold a positive relationship with post-merger identification in both conditions but that this relationship would be weaker in the merger condition compared to the non-merger condition (Hypothesis 1). With respect to ingroup bias, it was expected that a merger would strengthen the relationship between pre-merger identification and post-merger bias for the reasons outlined in the general introduction (Hypothesis 2). Because we argued that the strengthened relationship between pre-merger identification and ingroup bias could be due to a perceived continuity but also to a perceived discontinuity (i.e., change) of the pre-merger group identity, we included measures of perceived continuation and perceived change to explore the nature of this relationship.

#### METHOD

##### *Participants and Design*

One hundred and forty-one undergraduate students from various disciplines participated in this study, for which they received 4.5 Euros (approximately U.S.\$4). These participants (57 men, 85 women<sup>1</sup>) were randomly assigned to one of two experimental conditions: merger or non-merger.

##### *Procedure*

The experiment was conducted using a modified version of the Minimal Group Paradigm (Tajfel, 1970).

After arriving at the laboratory, participants were seated in separate cubicles in front of a computer, which was used to provide all instructions as well as to ask questions and register the answers. The study was introduced as a study on group productivity in brainstorming. Participants were told that the first brainstorming assignment required that two four-person groups would be created. One group was referred to as the blue group and the other as the red group. Assignment to one of these groups occurred on an ostensibly random basis (in reality, however, each participant was assigned to the blue group). Each group was represented by a symbol displayed at the top of participants' computer screens.

The first brainstorming assignment was then introduced. Each group had to generate more possible uses for a pencil than the other group. It was stressed that the quantity of the ideas was more important than their quality. All ideas generated by the members of a group would contribute to the group's total, even overlapping ideas. After these instructions, each participant was given 5 min to produce ideas, which could be entered into the computer and stored in a special file created for each group on the laboratory server. After completion of this task, pre-merger identification was measured on a 9-point scale using four items adapted from Doosje, Ellemers, and Spears (1995). These items were as follows: "I identify with the blue group," "I see myself as a typical member of the blue group," "I like being part of the blue group," and "I feel committed to the blue group" (1 = *not at all*, 9 = *very much*). These items were later averaged to create one scale of pre-merger identification ( $\alpha = .87$ ,  $M = 3.90$ ).

#### *Experimental Manipulation*

The second phase of the study consisted of another brainstorming assignment. In the non-merger condition, participants were requested to brainstorm about the second problem (to generate as many uses as possible for a knife) with their unchanged blue group and in competition with the red group. Each participant was again given 5 min to produce ideas, which would be collected in the blue group's file. In the merger condition, participants were told that the groups would be combined because the second brainstorming assignment required a larger group (for reasons not further explained in the instructions). This merger was simulated on participants' computer screens by combining their representative symbols and files, and the resulting group was thereafter referred to as the purple group. The subsequent brainstorming assignment was identical to that used in the non-merger condition (i.e., generate as many possible uses for a knife), although participants were now requested to try to produce more ideas with

the purple group than other groups that had participated in this research.

#### *Questionnaire*

All questions in the post-merger questionnaire were asked using 9-point scales (1 = *not at all*, 9 = *very much*). The effectiveness of the manipulation was checked by two items: "To what extent do you perceive the participants present as one group?" and "To what extent do you perceive the participants present as two groups?"

Post-merger identification was assessed by the same four items used to measure pre-merger identification ( $\alpha = .90$ ). In the merger condition, post-merger identification referred to the purple group. In the non-merger condition, post-merger identification referred to participants' unchanged blue group. Ingroup bias was assessed by measuring attitudes toward members of the (former) ingroup and the (former) outgroup on four items: "How *nice* do you think the members of the [blue/red] group are?" "How *sociable* do you think the members of the [blue/red] group are?" "How *intelligent* do you think the members of the [blue/red] group are?" and "How *bad* do you think the members of the [blue/red] group are in producing uses for various objects?" (reverse-coded). An overall measure of ingroup bias was computed by subtracting for each item the outgroup attitudes from the ingroup attitudes and averaging the resulting four bias measures into one scale ( $\alpha = .80$ ). The result is a measure on which higher (more positive) scores indicate more ingroup favoritism.

Perceived continuation of the pre-merger ingroup was measured with one item: "Within the purple group, the blue group can still clearly be recognized." Perceived change of the pre-merger ingroup was measured with two items, one referring to perceived continuation of the pre-merger outgroup ("Within the purple group, the red group can still clearly be recognized") and one referring to a lack of continuation of either group ("The purple group has really become a new group").

## RESULTS

#### *Manipulation Check*

The extent to which participants perceived the aggregate as one group and the extent to which they perceived it as two groups were submitted to an analysis of variance as the two levels of a within-subjects factor, with Merger as the between-subjects factor. The analysis yielded a main effect of the within-subjects factor,  $F(1, 139) = 4.57$ ,  $p < .05$ . Overall, participants viewed the aggregate somewhat more as one group ( $M = 4.19$ ) than as two groups ( $M = 3.67$ ). However, this effect was fully qualified by the manipulation of merger, as indicated by the interaction,  $F(1, 139) = 19.46$ ,  $p < .001$ . Pairwise *t* tests showed that in

the merger condition, participants held a stronger one-group perception ( $M = 4.53$ ) than a two-group perception ( $M = 2.97$ ),  $t(70) = 4.38$ ,  $p < .001$ , whereas this pattern was reversed in the non-merger condition ( $M_s = 3.84$  vs.  $4.39$ ),  $t(69) = -1.72$ ,  $p < .10$ . We can therefore conclude that our manipulation was successful by altering participants' perceptions of the aggregate in the merger condition from a distinctive two-group categorization to that of a more inclusive single group.

#### Post-Merger Identification

A hierarchical regression analysis was performed on post-merger identification. Pre-merger identification and experimental condition (dummy-coded as 0 for non-merger and 1 for merger) were entered in the first step and the resulting model explained 58% of the variance in post-merger identification,  $F(2, 140) = 59.05$ ,  $p < .001$ . Pre-merger identification was positively related to post-merger identification ( $\beta = .75$ ,  $t = 13.58$ ,  $p < .001$ ). In addition, there was a marginally significant negative relationship between the merger manipulation and post-merger identification ( $\beta = -.10$ ,  $t = -1.82$ ,  $p = .07$ ), indicating that post-merger identification was slightly lower in the merger condition ( $M = 3.63$ ) compared to the non-merger condition ( $M = 4.12$ ). More important, the merger manipulation moderated the relationship of pre-merger identification with post-merger identification, as indicated by the interaction that was entered in step 2,  $R^2_{\text{ch}} = .04$ ,  $F(1, 140) = 15.52$ ,  $p < .001$ . Following Aiken and West (1991), we determined the regression slopes for the merger and the non-merger conditions separately (see Figure 1). Although there was a significant positive relationship between pre- and post-merger identification in both experimental conditions, the significant interaction term shows that this relationship was stronger in the non-merger condition ( $\beta = .66$ ,  $t = 12.49$ ,  $p < .001$ ) than in the merger condition ( $\beta = .42$ ,  $t = 7.96$ ,  $p < .001$ ). In support of Hypothesis 1, the positive relationship between pre- and post-merger identification in the merger condition indicates a partial transference of pre-merger identification to the post-merger group. However, comparison with the non-merger condition also revealed a partial discontinuity of the pre-merger group identity.

#### Ingroup Bias

A regression analysis was performed on ingroup bias, with pre-merger identification and merger entered in step 1 ( $R^2 = .12$ ),  $F(2, 140) = 9.36$ ,  $p < .001$ . This model revealed a significant positive relationship between pre-merger identification and ingroup bias ( $\beta = .33$ ,  $t = 4.07$ ,  $p < .001$ ). However, entering the interaction term in step 2 showed that this effect was qualified by the interaction with merger ( $R^2_{\text{ch}} = .03$ ),  $F(1, 140) = 4.61$ ,  $p < .05$ . Simple

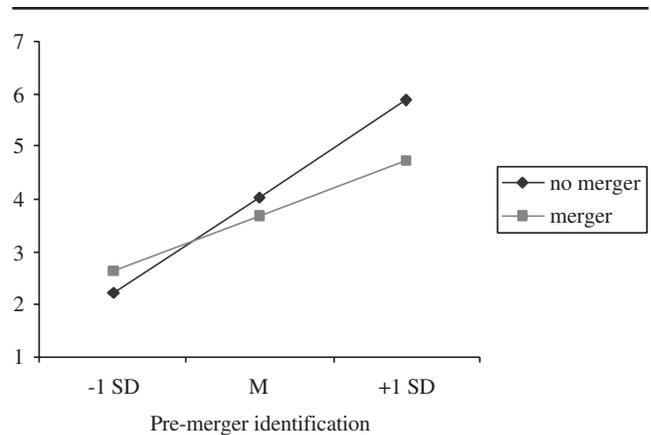
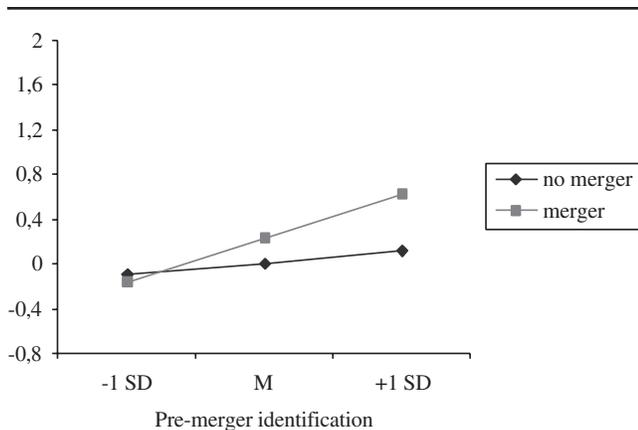


Figure 1 Regression slopes for pre- and post-merger identification, Study 1.

slope analyses revealed that pre-merger identification was only related to ingroup bias in the merger condition ( $\beta = .35$ ,  $t = 4.50$ ,  $p < .001$ ) but not in the non-merger condition ( $\beta = .09$ ,  $ns$ , see Figure 2). In line with Hypothesis 2, the merger strengthened the relationship between pre-merger identification and ingroup bias. Ingroup bias following the merger manipulation can thus be attributed to a concern for the pre-merger group identity as raised by the merger.

To investigate how this concern was related to the continuation or change of the pre-merger group identity, a selection was made of those participants in the merger condition only ( $N = 71$ ). Both perceived continuation of the pre-merger ingroup ( $r = .69$ ,  $p < .001$ ) and perceived continuation of the pre-merger outgroup ( $r = .31$ ,  $p < .01$ ) correlated positively with ingroup bias in this condition. The perception of the post-merger group as a new group was unrelated to bias ( $r = -.06$ ,  $ns$ ). However, because categorization scores are by definition contrasting, a parallel between perceived continuation of ingroup and outgroup was to be expected. To investigate the relative contributions of each of these measures of continuation and change to ingroup bias, they were simultaneously entered in a regression analysis, resulting in a highly significant model ( $R^2 = .66$ ),  $F(3, 70) = 42.84$ ,  $p < .001$ . Perceived continuation of the pre-merger ingroup was positively related to ingroup bias ( $\beta = 1.27$ ,  $t = 10.19$ ,  $p < .001$ ). Perceived continuation of the pre-merger outgroup was negatively related to bias ( $\beta = -.66$ ,  $t = -5.18$ ,  $p < .001$ ), as was the perception of the post-merger group as a new group ( $\beta = -.21$ ,  $t = -2.67$ ,  $p < .01$ ). Thus, the more the post-merger group was perceived as a continuation of pre-merger ingroup, and the less it was perceived as a change of the pre-merger ingroup (because it was seen as either a continuation of the merger partner or as an entirely new group), the more ingroup bias was displayed.



**Figure 2** Regression slopes for pre-merger identification and ingroup bias, Study 1.

## DISCUSSION

Previous investigations of mergers have offered concerns for the pre-merger group identity as a source of negative reactions following a merger (e.g., Haunschild et al., 1994; Skevington, 1980; Terry & Callan, 1998). However, few studies have provided explicit evidence for this relationship, thus failing to exclude alternative explanations. By directly investigating the relationship of ingroup bias and post-merger identification with pre-merger identification, the present study focused on how these phenomena were grounded in concerns for the pre-merger group identity. Moreover, the present study is the first to include a comparison with a non-merger condition and therefore the first to investigate to what extent these phenomena are a reaction to a merger or a mere reflection of relatively stable intergroup relations.

Perceived change to the pre-merger group identity can imply a discontinuity of the pre-merger ingroup identity at the expense of a continuation of the partner to the merger or it can imply a discontinuity of both group identities, resulting in a post-merger group that is essentially different from either pre-merger group. Regression analysis in the merger condition revealed that bias was positively related to the perceived continuation of one's pre-merger ingroup and negatively related to both measures of change. Thus, less perceived change, and more perceived continuation, were associated with more ingroup bias between the merged groups in this study. This finding is in line with results from studies on subgroup relations in non-merger contexts (Mummendey & Wenzel, 1999; Waldzus et al., 2003; Wenzel et al., 1999). However, because continuation was measured and not manipulated, it could reflect a motivation to justify intergroup discrimination by claiming superiority or continuity of the participants' own pre-

merger group within the post-merger group. Study 2 was therefore designed to provide an experimental test of the effects of continuation.

## STUDY 2

In the second study, we manipulated the extent to which participants' own group, relative to the merger partner, was represented in the post-merger group. Under conditions of low representation, participants' own group was essentially taken over by the other group, whereas the reverse occurred under conditions of high representation. Under conditions of equal representation, no group dominated the other, but both groups were merged in a fashion similar to that of the first study. It was predicted that the relationship between identification with the superordinate, post-merger group would become stronger (more positive) as representation increases (Hypothesis 1). With respect to ingroup bias, results from the previous study demonstrated that post-merger bias in favor of the pre-merger ingroup was linearly contingent on the perceived continuation of the pre-merger group identity. Thus, on the basis of these results as well as findings from research on the ingroup projection model (Waldzus et al., 2003), we predicted that pre-merger identification would hold a positive relationship with post-merger ingroup bias, which would increase with higher levels of representation (Hypothesis 2). Moreover, if ingroup bias is the result of a comparison process operating at the superordinate level of the post-merger group, and a reaction to the perceived deviance of the underrepresented group compared to the superordinate group, then the relationship between post-merger identification with the superordinate group and ingroup bias should range from positive under conditions of high representation to negative under conditions of low representation (Hypothesis 3).

## METHOD

### *Participants and Design*

One hundred and fourteen undergraduate psychology students participated in the experiment, for which they received 4.5 Euros (approximately U.S.\$4). These participants (26 men, 88 women<sup>2</sup>) were randomly assigned to one of three experimental conditions: low representation ( $N = 37$ ), equal representation ( $N = 39$ ), and high representation ( $N = 38$ ).

### *Procedure and Experimental Manipulation*

The procedure used during the pre-merger phase of the experiment was comparable to that of the first study. Two four-person groups were created: a red group and a

blue group. Participants were always assigned to the blue group. Each group was represented by a symbol on the computer screens and was given a file on the laboratory server. Contrary to the first study, the pre-merger phase consisted of two, rather than one, brainstorming sessions. The respective assignments were to generate uses for a box (session 1) and uses for a pencil (session 2). By prolonging the existence of the pre-merger group, it was expected that this group would gain in meaningfulness to participants. After the second brainstorming session, pre-merger identification was measured with three items: "I feel strong ties with the blue group," "I see myself as a typical member of the blue group," and "I like being part of the blue group" (1 = *not at all*, 9 = *very much*;  $\alpha = .76$ ,  $M = 4.71$ ).

In the second phase of the study, participants were told that the third brainstorming session required a larger group, for which reason both groups would be combined. In the low representation condition, a random decision as simulated on the computer screen had selected the red group as the one to continue and be expanded by the members of the blue group (participants' ingroup). The symbols representing both pre-merger groups were now replaced by one symbol, representing the post-merger red group, and participants were given access to the red group's file on the laboratory server. In the equal representation condition, the red and blue group were combined in a "merger of equals," resulting in a merging of files and a purple symbol representing the post-merger purple group. In the high representation condition, participants' own blue group was continued and expanded with the members of the red group, who were given access to the blue group's file on the server. The symbol representing the post-merger blue group was similar to that representing the pre-merger blue group. In all conditions, it was stressed that the combining of the groups (or the selection of the group that would be continued) was unrelated to characteristics of the groups themselves, such as their previous performance. After the subsequent brainstorming task, which required participants to generate more possible uses for a knife within their group than other groups in this study, a questionnaire was administered.

### Questionnaire

Unless otherwise indicated, all questions were asked using 9-point scales (1 = *not at all*, 9 = *very much*). The effectiveness of the manipulation was checked in two ways. First, participants were asked to indicate a position on a colored beam that, in their perception, best represented their post-merger group. This beam ran from 1 (red) via purple (5) to blue (9). Second, perceived continuation of their own group and of the other pre-

merger group in the post-merger group were measured, each with two items ("The current group is in fact a continuation of the original [blue, red] group," "The original [blue, red] group is strongly represented within the current group"). One measure was computed from these questions by subtracting perceived continuation of the other group from perceived continuation of the participants' own group. The result is a measure of relative perceived continuation on which higher (more positive) scores indicate a stronger perceived continuation of the participants' own pre-merger group, relative to the other pre-merger group, in the post-merger group.

Post-merger identification was assessed with the same three items used to measure pre-merger identification, now referring to the post-merger, superordinate group ( $\alpha = .86$ ). Ingroup bias was assessed by measuring attitudes toward members of the original ingroup and the original outgroup on four items: "How *nice* do you think the members of the original [blue/red] group are?" "How *creative* do you think the members of the original [blue/red] group are?" "How *smart* do you think the members of the original [blue/red] group are?" and "How *good* do you think the members of the original [blue/red] group are at brainstorming?" A total measure of ingroup bias was computed by subtracting the outgroup attitudes from the ingroup attitudes on each item and averaging the resulting four bias measures into one scale ( $\alpha = .92$ ). The result is a measure on which higher (more positive) scores indicate more ingroup favoritism.

## RESULTS

### Manipulation Checks

One-way analysis of variance revealed an effect of representation on the item assessing perceived representation,  $F(2, 113) = 28.16$ ,  $p < .001$ . Post hoc analyses (Tukey,  $p < .05$ ) showed that participants in the low representation condition perceived their blue group as significantly less strongly represented in the merger group ( $M = 4.53$ ) compared to participants in the equal representation condition ( $M = 5.64$ ) and participants in the high representation condition ( $M = 6.53$ ). The latter two groups also differed significantly from each other.

One-way analysis of variance on perceived relative continuation also revealed an effect of representation,  $F(2, 113) = 4.63$ ,  $p < .05$ . The post-merger group was more strongly perceived as a continuation of the participants' own pre-merger group under conditions of high representation ( $M = .64$ ) compared to low representation ( $M = -.05$ ), with equal representation occupying an intermediate level ( $M = .26$ ). Tukey tests ( $p < .05$ ) showed that the high and low representation conditions differed significantly from each other (although neither was sig-

nificantly different from the equal representation condition). Taken together, we can conclude that the manipulation of representation was successful in varying participants' perceptions of the extent to which their own pre-merger group was continued in the post-merger group.

#### Testing the Hypotheses

To test for the overall effect of the manipulation of representation, two contrasts were computed and used in all subsequent analyses (see Aiken & West, 1991). The first contrast was used to test for linear effects and was coded  $-1$  for low representation,  $0$  for equal representation, and  $1$  for high representation. The second contrast tested for quadratic effects and was coded  $-.5$  for low representation,  $1$  for equal representation, and  $-.5$  for high representation. The overall effect of representation was tested by entering both contrasts simultaneously in the analysis.<sup>3</sup> Significant tests involving this manipulation are further investigated by inspecting the separate contrasts.

#### Post-Merger Identification

A hierarchical regression analysis was performed on post-merger, superordinate identification. After entering pre-merger identification and representation in step 1, the model explained 44% of the variance in post-merger identification ( $R^2 = .44$ ),  $F(3, 113) = 29.02$ ,  $p < .001$ . There was no main effect of representation ( $t < 1$ ), although overall levels of post-merger identification did rise somewhat as representation increased (low representation:  $M = 4.01$ , equal representation:  $M = 4.27$ , high representation:  $M = 4.82$ ). Post-merger identification was positively related to pre-merger identification ( $\beta = .66$ ,  $t = 8.97$ ,  $p < .001$ ), but this effect was qualified by the interaction with representation, which was entered in step 2 ( $R^2_{\text{ch}} = .03$ ),  $F(2, 113) = 3.53$ ,  $p < .05$ ). Inspection of the contrasts revealed this interaction to be related to a linear pattern for representation ( $\beta = .19$ ,  $t = 2.61$ ,  $p < .05$ ). Thus, the positive relationship between pre- and post-merger identification became stronger as representation increased. The regression slopes for the linear effect of representation were determined separately for low, equal, and high representation and are presented in Figure 3. In each condition, pre-merger identification was positively related to post-merger identification, but the strength of this relationship increased with rising levels of representation (for low representation:  $\beta = .19$ ,  $t = 2.77$ ,  $p < .01$ ; for equal representation:  $\beta = .41$ ,  $t = 5.91$ ,  $p < .001$ ; for high representation:  $\beta = .49$ ,  $t = 6.76$ ,  $p < .001$ ). Further testing revealed that the relationship between pre- and post-merger identification in the low representation condition was marginally significantly different from that in the equal representation condition ( $t = 1.89$ ,

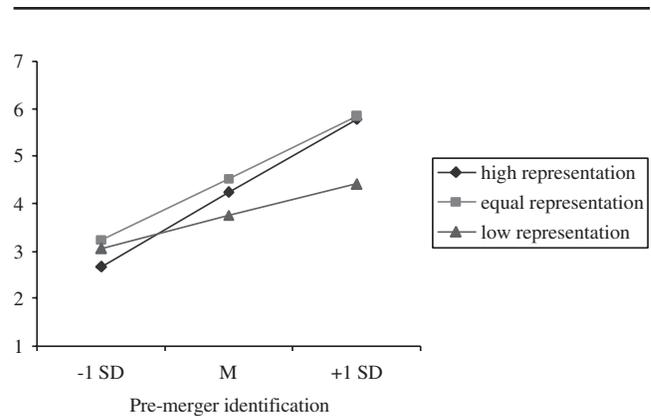


Figure 3 Regression slopes for pre- and post-merger identification, Study 2.

$p = .06$ ), whereas the equal and high representation conditions did not differ from each other ( $t = .84$ ,  $ns$ ). In support of Hypothesis 1, the more clearly participants' own pre-merger group was represented in the post-merger group, the stronger the relationship was between pre- and post-merger identification.

#### Ingroup Bias

Ingroup bias was also analyzed in a regression analysis, in which pre-merger identification and representation were entered in the first step ( $R^2 = .15$ ),  $F(3, 113) = 6.64$ ,  $p < .001$ . This model revealed that ingroup bias was positively related to pre-merger identification ( $\beta = .37$ ,  $t = 4.03$ ,  $p < .001$ ). Again, this effect was qualified by the interaction with representation, which was entered in step 2 ( $R^2_{\text{ch}} = .06$ ),  $F(2, 113) = 4.30$ ,  $p < .05$ . Inspection of the contrasts revealed the interaction to be significantly related to a linear effect of representation ( $\beta = .19$ ,  $t = 2.13$ ,  $p < .05$ ). In support of Hypothesis 2, the positive relationship between pre-merger identification and ingroup bias increased as representation increased. Simple slope analyses (see Figure 4) showed that whereas pre-merger identification appeared to hold a positive relationship with ingroup bias in all conditions, this relationship was in fact only significant when representation was high ( $\beta = .42$ ,  $t = 4.75$ ,  $p < .001$ ) but not when representation was equal ( $\beta = .08$ ,  $t = .88$ ,  $ns$ ) or low ( $\beta = .13$ ,  $t = 1.49$ ,  $ns$ ). Moreover, this relationship did not differ in strength between the low and equal representation conditions ( $t = -.46$ ,  $ns$ ) but it was significantly stronger in the high representation condition compared with the equal representation condition ( $t = 2.80$ ,  $p < .01$ ).

#### The Relationship Between Post-Merger Identification and Ingroup Bias

Overall, ingroup bias at the subordinate level of the merged groups was not related to identification with the

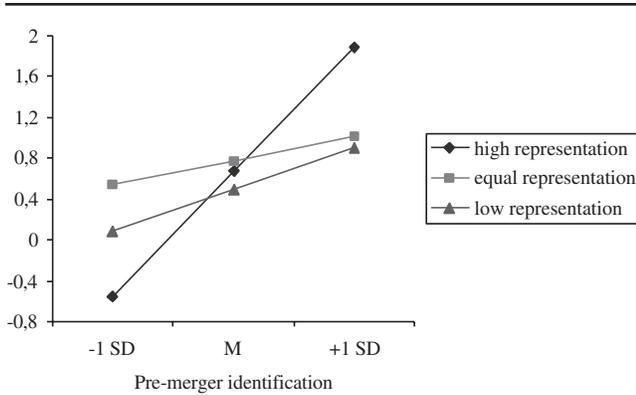


Figure 4 Regression slopes for pre-merger identification and ingroup bias, Study 2.

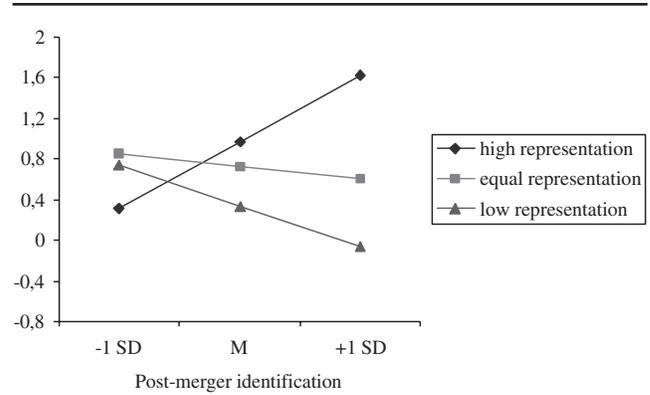


Figure 5 Regression slopes for post-merger identification and ingroup bias, Study 2.

post-merger, superordinate group,  $r(114) = .13$ . To investigate the prediction that the relationship between ingroup bias and post-merger identification would vary depending on the level of representation, we conducted a regression analysis on ingroup bias in which post-merger identification and representation were entered in the first step and the interaction term in the second step. The model as built in step 1 did not explain a significant amount of variance in ingroup bias ( $R^2 = .04$ ),  $F(3, 113) = 1.46$ . However, after entering the interaction term in the second step, the model became significant ( $R^2_{ch} = .10$ ),  $F(2, 113) = 1.26$ ,  $p < .01$ . The interaction was related to the linear effect of representation ( $\beta = .30$ ,  $t = 3.26$ ,  $p < .01$ ). Simple slope analyses (see Figure 5) showed that the relationship between post-merger identification and ingroup bias ranged from negative when representation was low ( $\beta = -.12$ ) through about zero under conditions of equal representation ( $\beta = -.05$ ) to positive when representation was high ( $\beta = .32$ ), although only the latter pattern deviated significantly from zero ( $t = 3.51$ ,  $p < .001$ ). Further testing showed that the relationship between pre- and post-merger identification did not differ in strength between the low and equal representation conditions ( $t = .70$ , *ns*), whereas the difference between the equal and the high representation conditions was significant ( $t = 2.92$ ,  $p < .01$ ). In support of Hypothesis 3, the relationship between superordinate identification and subordinate ingroup bias was contingent on the extent to which this superordinate post-merger group identity was in fact a reflection of the pre-merger group identity.

## DISCUSSION

The first study demonstrated that a merger can weaken the relationship between pre- and post-merger identification. This second study showed that the strength of this relationship is contingent on the extent

to which the post-merger group comprises a continuation of the pre-merger group. Moreover, it was previously argued that such continuation may transform the psychological experience of a merger from a combining of two groups to the acquisition of a subgroup. In an asymmetric merger, one pre-merger group identity is more strongly continued, and thus more similar to, the post-merger superordinate group than the other pre-merger group identity. Mummendey and Wenzel (1999) argued that discrimination between subgroups is contingent on this relative similarity to their superordinate category. The data from the present study support this argument. Moreover, they show how bias was grounded in a concern for the continued pre-merger group identity: As their own pre-merger group was more strongly represented within the superordinate, post-merger group, pre-merger identification became more strongly related to post-merger bias between the merged groups.

The introduction of a shared superordinate identity has been offered as a useful tool for reducing intergroup discrimination at the subordinate level (e.g., Gaertner, Dovidio, Anastasio, Bachman, & Rust, 1993). However, the results from the current study demonstrate that a crucial factor concerns the representation of this superordinate identity. Only under conditions of low representation did the introduction of a superordinate category evoke a trend toward a negative relationship between identification with the superordinate post-merger group and ingroup bias at the subordinate level. By contrast, conditions of high representation created a positive association, which is in line with findings from research on ingroup projection (e.g., Waldzus et al., in press; Wenzel et al., 1999). Thus, when the superordinate identity is perceived as similar to or a continuation of one's own pre-merger identity, social identification with the superordinate category may be associ-

ated with an increase rather than a decrease in subordinate ingroup bias.

#### GENERAL DISCUSSION

Previous research on mergers, using a social categorization perspective, has demonstrated how the anticipation or experience of a merger can evoke feelings of threat, resistance, intergroup hostility, and ingroup bias (Haunschild et al., 1994; Skevington, 1980; Terry & Callan, 1998). It has been argued that some of these reactions stem from the fact that a merger forces group members to abandon their pre-merger group identity and to adopt a new one. Yet, no study so far has explicitly investigated in what way such reactions can actually be explained by concerns for the pre-merger group identity. Thus, the extent to which they are the result of the presumed change or the continuation of the pre-merger group identities in the post-merger group has been left unexamined. As the present studies demonstrate, the continuation of the pre-merger group identity in the post-merger group may be just as likely a cause for ingroup bias as the change of that identity. Feelings of threat, resistance, and intergroup discrimination may be triggered not only by the prospect of losing one's pre-merger group identity in the merger process but also by the prospect of having to incorporate a subgroup that was previously defined by its distinctiveness from one's own group.

The importance of a sense of continuity in the midst of change has been stressed before by other researchers (e.g., Ethier & Deaux, 1994; Rousseau, 1998). Rather than breaking down group members' attachment to their old group and requiring them to form a bond with a new group, a sense of continuity can preserve the pre-merger group identity and transfer it onto the post-merger group. But what is it that people identify with when a sense of continuity leads them to identify with the superordinate post-merger group? Theoretically, identification with a group implies the embracement of its constituent subgroups (Turner et al., 1987). Yet, there are numerous examples that indicate this is not always the case. For instance, a person may identify strongly with his or her gender category in general but still be biased against certain subtypes within this category. Alternatively, people may have a strong national identity but some national subgroups may not be included in this identity, such as immigrant groups or native minority groups. When a sense of continuity leads people to embrace the post-merger group, the merger partner need not automatically be adopted as an integral part of this identity. Instead, group members can identify with a common superordinate group and simultaneously discriminate against other subgroups that are nested within this common group.

In terms of its consequences, perceived ingroup continuation strongly resembles ingroup projection. Ingroup projection is frequently investigated in realistic intergroup contexts. For example, Weber, Mummendey, and Waldzus (2002) found that both university business students and polytechnic business students perceived themselves more prototypical for the inclusive category of business administration students (Study 1). Waldzus et al. (2002) found the same disagreement about the relative prototypicality of participants' own subgroup for the common categories of motor bikers (chopper bikers vs. sport bikers, Study 1), school teachers (primary schoolteachers vs. high schoolteachers, Study 2), and Germans (West Germans vs. East Germans, Study 3). Perceived relative prototypicality is further demonstrated to be negatively related to positive attitudes toward the outgroup (Waldzus et al., 2003; Wenzel et al., 1999).

Despite their apparent similarities, perceived continuation of the pre-merger group differs from ingroup projection in the sense that it refers to a merger context. As opposed to relatively stable situations of subgroups nested within a common superordinate group, mergers are typically unstable situations characterized by a high degree of stress and uncertainty, in particular for members of the nondominant party. Stress and uncertainty can lead to a general resistance to the merger, ingroup bias, and a rejection of the imposed common group identity. Indeed, this is exactly what Terry and colleagues found in their investigations of real-world mergers (Terry & Callan, 1998; Terry et al., 2001; see also Terry, 2003). Factors such as finding one's group in an inferior position after the merger and fearing a loss of career opportunities or even one's job can all contribute to resistance and ingroup bias among members of the nondominant party. The aim of our research was not to simulate mergers as realistically as possible but rather to investigate reactions to the perceived continuation or change of group identity as an important part of a merger. Given that mergers are typically very rich events, in the sense that many changes and potential threats are present at different levels and different stages in the merging process, experimental research can contribute to a better understanding of the merger phenomenon by disentangling the various elements involved and investigating their separate and combined effects under controlled conditions.

For a smooth transition of the merging process, it seems important to preserve the pre-merger group identities. When a social identity is threatened, group members may react by strengthening their ties with the group and attempting to restore the original group boundaries (Branscombe et al., 1999). Ingroup bias, discrimination, and intergroup hostility at the level of the merged groups can be considered detrimental to the ultimate

success of a merger. The prevention of ingroup bias, however, does not suffice when the ultimate goal of the merger is to create a unit that functions successfully. Of equal importance for the success of the merger is that the post-merger group is incorporated in members' social identity. Because identification with a social category engenders a tendency to think in terms of that category membership, identification causes people to engage in activities that are congruent with that identity and that can benefit the group (Ouwerkerk, Ellemers, & de Gilder, 1999; van Knippenberg, 2000). The continuation of the pre-merger group identity in the present research, however, resulted in merger structures in which stronger superordinate identification was associated with more, instead of less, subordinate ingroup bias. Future research may therefore focus on finding alternative structures in which post-merger identification is enhanced while subordinate ingroup bias is reduced. One such alternative structure could involve the inclusion of the merged groups in the post-merger structure as distinctive subgroups. Recent developments show how preserving the distinctiveness of subgroups in the context of a binding superordinate category reduces ingroup bias (e.g., Gaertner et al., 1999; Hewstone & Brown, 1986; Hornsey & Hogg, 2000). Although the ultimate goal of a merger may be to abolish the pre-merger group boundaries in favor of the new post-merger group, it could thus be fruitful to preserve this distinction until the superordinate category has sufficiently been internalized.

#### NOTES

1. There were no differences between men and women in post-merger identification or ingroup bias.
2. There were no differences between men and women in post-merger identification or ingroup bias.
3. Dummy variable coding is the most frequently utilized procedure for representing categorical variables in regression analysis (Aiken & West, 1991). It also presents the most easily interpretable results. For variables with more than two categories, all possible sets of dummy variable codes need to be included in the regression equation to test for the overall effect of that variable. With three levels of representation,  $3 - 1 = 2$ , dummy variables are needed. The theoretical argument tested in this article calls for a test of the linear effect of representation (i.e., -1, 0, 1). For the second dummy variable, a quadratic contrast was chosen (i.e., -0.5, +1, -0.5) to investigate deviations from this linear pattern.

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