United we run, divided we fail?
Effects of cognitive merger representations and performance feedbacks on merging groups

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1 Introduction

Mergers between groups are an everyday occurrence in our society. For instance, many schools are merging in Germany because of the demographical changes in the society, East- and West- Germany are still merging to form a united Germany, and Daimler and Chrysler merged to become one of the biggest companies of the world. From these different types of mergers, organizational mergers have received the most research attention (see Hogan & Overmyer-Day, 1994, for an overview). There are different reasons of why organizations merge. For instance, companies want to grow, the involved groups want to take advantage of synergies, they want to save money or they want to become more competitive against other companies. Although it is commonly assumed that mergers are potentially beneficial business practise, about two-thirds of them fail to achieve their expectations (McCann & Gilkey, 1988) and can be regarded as financial failures (Buono & Bowditch, 1989; Cartwright & Cooper, 1992; Marks & Mirvis, 1986). Hence, organizational mergers experience often negative experiences regarding their intended goals. Most of the research in the organizational merger field has looked at the reasons leading to the failure of the merger (Hogan & Overmyer-Day, 1994). Beside the economical, financial, and strategic factors, the ‘human’ side of mergers has been cited as a central explanation for many of their failures (Cartwright & Cooper, 1992). However, the perceived performance of the merger in reaching its intended goals could have itself detrimental consequences for the relations between the two merging groups. In other words, the question arises how employees of the merging organizations do cope if they experience a success or a failure of the merger. Given the prevalence of group mergers and the frequent failures in reaching their goals, it would be useful to understand what consequences follow for the relations between the merging organizations or groups.

Until relatively recently, research on mergers has neglected the intergroup nature of a merger situation (Bachman, 1993; Haunschild, Moreland, & Murrell, 1994; Mottola, Bachman, Gaertner, & Dovidio, 1997; Terry & Callan, 1998; van Knippenberg & van Leeuwen, 2001). A merger between two groups means that a new group identity is imposed on the group members (Haunschild et al., 1994). There is a substantial body of research on intergroup relations dealing with contact between groups and suggesting how problems associated with intergroup mergers might best be overcome (see Brewer
& Brown, 1998, for an overview). This research has also shown its applicability to organizational mergers (Haunschild et al., 1994; Terry, 2001; van Knippenberg & van Leeuwen, 2001). The current research on group mergers takes such an intergroup relations perspective, because such a perspective may help to understand how the perceived performance of the merger impact on the intergroup relations.

A merger reflects an intergroup situation where the members of two groups have to deal with three different group memberships (i.e. categories): (a) their old group membership, (b) the other merging group, and finally (c) the newly merged group. The cognitive representations of these categories have been a central research focus of the intergroup relation literature (Brewer & Brown, 1998; Brewer & Gaertner, 2001). Based on the Contact Hypothesis (Allport, 1954) and the Social Identity Approach (Tajfel & Turner, 1986; Turner, Hogg, Oakes, Reicher, & Wetherell, 1987), different theoretical models were put forward predicting the cognitive representations that may improve intergroup relations during intergroup contact (Brewer & Miller, 1984; Gaertner, Dovidio, Anastasio, Bachman, & Rust, 1993; Hewstone & Brown, 1986). These approaches are mainly dealing with the cognitive representation of the merged groups and research has already shown that such representations of mergers have an impact on the intergroup evaluations during a merger (Gaertner et al., 2001; Haunschild et al., 1994; Mottola, Bachman, Gaertner, & Dovidio, 1997). However, the research based on these cognitive models has not focused on one of the most important aspects of merging groups – the influence of perceived performance of the merged groups on the intergroup evaluations (but see Haunschild et al., 1994).

However, early intergroup research on cooperation and competition between groups indicated that the perceived performance of a group merger can have a strong impact on the intergroup relations (Worchel, Andreaoli & Folger, 1977; Worchel, Ferris, Smaha, Axsom, & Schweizer, 1978; Worchel & Norvell, 1980). Although cooperation between two groups towards a common goal leads to more harmonious intergroup relations compared to a competition between two groups (Brown & Abrams,

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1 Group performance itself has been a central topic in small group research for over a century (Kerr & Park, 2001; McGrath, Arrow, Berdahl, 2000). The focus of the current research is, however, on the influence of the perceptions of group performance on intergroup relations. Therefore, I only outlined the research literature which I perceived as most relevant for the current research. I do not deny that there is already a lot of research looking at group performance.
1986; Sherif, Harvey, White, Hood, & Sherif, 1961), the outcome of the cooperation is critical for the intergroup relations between the merging groups. More precisely, it has been shown that a failure of a cooperation between two groups can lead to negative intergroup relations (Worchel et al., 1977, 1978). This research indicates that a failure or success of the merger in reaching its goals has an impact on the tensions between the merging groups.

In sum, research on mergers can be enriched by applying theoretical accounts from intergroup relations research. Recent applications have shown to be fruitful in understanding processes involved in mergers. Therefore, an intergroup perspective on merging groups was applied in the current research. The focus of the current research was on how two intergroup aspects of merging group influence the intergroup evaluations during a merger. First, research has shown that group members’ cognitive representations of mergers influence the intergroup relations (e.g., Gaertner, Bachman, Dovidio, & Banker, 2001; Haunschild et al., 1994). Second, early research indicated that feedback about the merger performance has an impact on the intergroup relations (Worchel et al., 1977, 1978; Worchel & Norvell, 1980). However, how cognitive merger representations interact with perceptions about the merger performance on intergroup evaluations has been neglected in the research so far. Does the group split after a common failure? Do they unite after a success? How do cognitive representations influence the handling of performance feedback of the merger? It is the aim of this research to answer these questions and to focus on the effects of cognitive merger representation and performance feedback of the merger on the evaluations of the pre-merger groups.

The following chapters will try to find out how cognitive merger representation and the perceived performance of the merger influence intergroup evaluations. The dissertation is divided in eight chapters. Chapter 2 outlines the theoretical background, which forms an important basis of the current research. Chapter 3 will summarize the hypotheses of the research and will give an overview of the present research. In chapter 4, 5, 6 and 7, four studies are presented which tested these assumptions. Finally, chapter 8 will summarize and discuss the results of the four studies. In addition the results will be discussed in relation to the theoretical framework of chapter 2 and implications for merging groups will be outlined.
2 Contact, cooperation, and performance of groups – Intergroup research and the application to merging groups

2.1 Merger between groups

The notion of merger is often related to the organizational field and there are various kinds and defining attributes of such organizational mergers (see Hogan & Overmyer-Day, 1994, for an overview). In addition, dictionaries define mergers mainly in relation to the organizational context. For example, the online Oxford English Dictionary (2004) defines a merger as the “combination or amalgamation of a commercial company, institution, etc., with another, or the consolidation of two or more companies, etc., into one” (definition, 2). The Merriam-Webster-Online-Dictionary (2004) defines mergers as “any of various methods of combining two or more organizations” (definition, 2b). For the current research, however, group mergers are understood as a basic group process, not only limited to the organizational field. This implies that the basic process of a group merger can be found in various contexts, as the examples given in the introduction have shown. Therefore, I was interested in the basic social-psychological processes influencing mergers. The above definitions of merger indicate that two organizations are involved and combined into one organization. For the current research, group mergers are defined as follows: The combination or amalgamation of a group with another into one group.

Research on organizational merger indicates that different kinds of such combination or amalgamations between two groups exist (Marks & Mirvis, 2001; Schoennauer, 1967; Uder & Kramarsch, 2001). These kinds of mergers are largely determined by the degree of integration anticipated for the merged organization (Marks & Mirvis, 2001). There are for instance cases of mergers which do not need a change in both organizations. The companies work cooperatively together, but the boundaries of the organizations are fully maintained. This kind of merger is called “preservation” (Marks & Mirvis, 2001) or “holding model” (Uder & Kramarsch, 2001). In other cases the merger creates a totally new identity not related to the former identities. This “transformation” (Marks & Mirvis, 2001) or “combine pattern” (Schoennauer, 1967) is the most complicated one, because it requires the most investment and creative management (Marks & Mirvis, 2001). One of the most often used kind of merger is an
“absorption” (Marks & Mirvis, 2001) or an “assimilation“ (Mottola et al., 1997; Schoennauer, 1967) of one organization into the other one². One organization is actually taking the lead in this kind of merger and the identity of the other organizations disappears. Finally, there are also cases of mergers where the “best of both” (Marks & Mirvis, 2001) organizations is put into the merger. In other words, the previous organizations are integrated into one organization while not forsaking their pre-merger identities. This model is also sometimes termed as “merger of equals” (e.g., Uder & Kramarsch, 2001) or “blend pattern” (Schoennauer, 1967). These examples of merger patterns indicate that identities of the organizations or groups play a central role in the planning and implementation of mergers. An intergroup perspective on mergers should therefore by important to understand why mergers may sometimes create harmful behavioral and psychological reactions for the employees (Cartwright & Cooper, 1992; Hogan & Overmyer-Day, 1994; Terry, Callan, Sartori, 1996).

2.2 An intergroup perspective on group mergers

Mergers are characterised by a certain structural condition – two groups merge to become one group. The literature in the organizational merger field often mention “us versus them” - dynamics (Blake & Mouton, 1985; Buono & Bowditch, 1989) which refers to a heighten salience of the pre-merger group identities. These identifications with the pre-merger companies seem to create unintended problems for the merger. An example of these intergroup dynamics is offered by the case study of Buono, Bowditch and Lewis (1985) who investigated the perception and attitudes of the employees in two medium sized banks before and 12 - months after a merger. Different methodological techniques were used, such as interviews, observations, questionnaires and archive files. The results of the study revealed that the differences in the organizational culture resulted immediately in competition between the employees of both companies despite the rather good pre-conditions for the merger (i.e. both companies had equal status and looked forward to the merger). The employees perceived the members of the other company as the “invading enemy” (Buono et al., 1985, p.492) and emerging problems during the merger were attributed to the other company. Further, there was nostalgia about the pre-merger companies and the pre-merger membership perceptions remained

² Often the term acquisition is used for such kind of a merger (Hogan & Overmyer-Day, 1994).
for a long period of time. In sum, this study yielded strong support for the influences of perceived group membership on organisational behaviour during the merger process.

The insights from this field research have been replicated in experimental laboratory research. Haunschild et al. (1994) showed that dyads who worked first in subgroups and then merged to a common group favoured their own subgroup more compared to merged groups which consisted of individuals who had not worked together before. Hence, the pre-merger group membership reinforced the resistance of the participants to a merger, as it was the case in the real context above. Group-memberships and intergroup relations seem therefore to be important variables in the process of group mergers. The intergroup nature of group mergers has been shown, for instance, in organizational mergers (Gaertner et al., 2001; Terry, 2001; van Knippenberg & van Leeuwen, 2001), in national mergers (Mummendey, Klink, Mielke, Wenzel, & Blanz, 1999), and in stepfamily mergers (Banker & Gaertner, 1998).

Fortunately, the intergroup relations research has a long tradition (see Brewer & Brown, 1998) and has, therefore, much to offer in explaining processes during group mergers. A short overview of relevant intergroup relations research will follow. The starting point is the research on contact between groups. This research is very important, because it examines conditions which lead to improved intergroup relations in the case of contact between two groups; and a group merger does actually represent a contact situation between two groups.

2.3 The Contact Hypothesis – From contact to intergroup harmony

Intergroup research during the past decades revealed that perceived group memberships determine our attitudes, stereotypes and behavior in intergroup encounters (see Brewer & Brown 1998, for an overview). Categorization of people into distinct groups appears to be sufficient to elicit intergroup bias (Hogg & Abrams, 1988; Tajfel, Billig, Bundy, & Flament, 1971) and hence, to arouse intergroup conflict (Brewer & Brown, 1998). Therefore, the change of stereotypes and prejudice and the reduction of intergroup conflict has been an important area of research. Especially after World War II, social scientists started to theorize about how intergroup contact could reduce tensions between groups (Watson, 1947; Williams, 1947). One of the most influential pieces of work in this respect was put forward by Gordon W. Allport in 1954, in his book “The nature of prejudice” and has become known as the “Contact Hypothesis”.
Allport specified the necessary situational conditions for intergroup contact to reduce prejudice and to foster intergroup harmony instead of creating intergroup conflict. His work has received broad attention because of its theoretical and practical implications (Pettigrew, 1971). For example, the basic ideas have been applied in settings examining racial desegregation (Schofield & Eurich-Fulcer, 2001), organizational merger research (Bachman, 1993; Mottola et al., 1997; Terry & O’Brien, 2001), and in intergroup dialogues (Stephan & Stephan, 2001).

The Contact Hypothesis asserts that contact between members of different groups, under certain preconditions, will reduce ethnic prejudice and intergroup conflict (Allport, 1954). The four most important conditions are the following: 1) equal status between the groups within the situation, 2) cooperation between the groups, 3) common goals, and 4) authority sanctions for the contact. All four conditions must be met to facilitate improved intergroup relations and to reduce prejudice.

Allport’s Contact Hypothesis has inspired extensive research since its formulation. Numerous studies have demonstrated the effectiveness of intergroup encounters in reducing prejudice and social discrimination, providing that these conditions are in place (for overviews see Amir, 1976; Pettigrew & Tropp, 2000, 2002). In their meta-analysis, Pettigrew and Tropp (2002) included over 500 studies comprising of over 700 independent samples that were tested in different target groups (e.g., people with AIDS, elderly, physically disabled, ethnic groups) with different research methods (e.g., archival research, field studies, laboratory experiments). The results of this extensive analysis showed that intergroup contact alone could slightly reduce prejudice. Hence, the four conditions put forward by Allport are not necessary conditions for the reduction of prejudice. Nevertheless, the meta-analysis supported the positive facilitating function of all four conditions. An interesting observation by Pettigrew and Tropp is that sometimes prejudice was increased if negative conditions were prevalent during intergroup contact. This finding is relevant to the current research and suggests a research approach that focuses on conditions that might increase intergroup tensions. These ‘negative’ conditions might be, for instance, anxiety, threat, or negative experiences (i.e. a performance failure) of the intergroup situation.
2.4 Superordinate goals and cooperative interdependence

The definition of a group merger (see chapter 2.1) implies the fact that the two groups are combined and now have to work towards a common goal. Hence, the conditions of cooperation and superordinate goals as put forward in the Contact Hypothesis are highly relevant for mergers. Moreover, these conditions of contact have received most of the research attention (Brewer & Gaertner, 2001). The focus on these aspects is mostly due to the famous summer camp study of Sherif and his colleagues (Sherif et al., 1961). Based on a functional theory of intergroup relations, Sherif et al. hypothesized that cooperative interdependence (i.e. cooperation towards a superordinate goal) between groups should lead to harmonious intergroup relations whereas competitive interdependence (i.e. competition towards a superordinate goal) should lead to intergroup hostility. In a natural setting the researchers split twenty-two boys randomly into two separate teams. In the first stage of the study, the teams were kept apart from each other and different activities for group formation were introduced. Subsequently, in the second stage of the study, intergroup competition (i.e. competitive interdependence) was introduced. Finally, in the third stage of the study, the researchers introduced cooperative tasks with a superordinate goal (i.e. cooperative interdependence) for the two formerly competitive groups. Intergroup behavior and ingroup bias was measured throughout the study. The results confirmed the hypotheses that tensions between the teams were stronger in the competitive interdependence phase of the study. In contrast, cooperative interdependence led to improved intergroup relations. Furthermore, contact between the groups without the introduction of superordinate goals was not effective in reducing intergroup tension. Hence, these results again confirmed the general assumption of the Contact Hypothesis that contact will reduce tension between groups much more effectively if some preconditions are in place. Furthermore, Sherif et al. assumed that this is explained by the interdependence structure of the intergroup encounter. Several experiments have confirmed the role of

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3 Some mergers (especially in the organizational field) are characterized by competitive and sometimes antagonistic relations (Buono & Bowditch, 1989; Haunschild et al., 1994). However, the merger situation implies cooperation between the merged groups towards common goals. The reasons for tension before and during the merger are multifaceted (see Hogan & Overmyer-Day, 1994). The current research focused on two factors which might influence such intergroup tensions: cognitive merger representations and performance of the merger.
cooperation toward a common goal in reducing intergroup hostility and bias (Brown & Abrams, 1986; Gaertner, Mann, Dovidio, Murrell, & Pomare, 1990; Ryen & Kahn, 1975; Salvin, 1983).

A lot of the research based on the Contact Hypothesis has concentrated on extending the list of facilitating factors that promote positive intergroup encounters (Amir, 1969; Cook, 1978). This, however, has been criticized as rendering the Contact Hypothesis meaningless in its application (Pettigrew, 1986). Furthermore, researchers started to become more interested in the underlying psychological processes that could explain the reduction of prejudice and the generalization of these effects (Brewer & Miller, 1984; Gaertner et al., 1993; Hewstone & Brown, 1986). These considerations are mainly cognitive and deal with categorization and identity processes based on Social Identity Theory (Tajfel & Turner, 1986) and Self-Categorization Theory (Turner et al., 1987). In the following sections I will first summarize the Social Identity Approach. Afterwards the cognitive categorization models based on this theoretical thinking are outlined in more detail. Finally, it will be shown that these cognitive representations during group contact can be applied to a group merger context.

### 2.5 The Social Identity Approach

The research on the Contact Hypothesis and on intergroup cooperation was strongly enriched by the Social Identity Approach that arose from European research on social categorization and social identification at the end of the 70s. This approach is grounded in Social Identity Theory (SIT) (Hogg & Abrams, 1988; Tajfel & Turner, 1986) and Self-Categorization Theory (SCT) (Turner et al., 1987) and represents a convergence of ideas on social categorization (Doise, 1978, Rosch, 1978, Tajfel, 1969) and social comparison (Festinger, 1954).

The important assumption of this approach is that individuals perceive the social world in terms of social categories. On the basis of categories, people reduce continuous information into discrete classes (e.g., a group of persons into 2 separate groups). At the same time, individuals minimize perceived differences within the categories and maximize perceived differences between the categories. The perceived membership in social categories can also contribute to the self-definition of the individuals. In other words, people define themselves not only on the basis of their individual characteristics
and their interpersonal relations (i.e. personal identity or personal self), but also in terms of characteristics of an ingroup to which they belong (i.e. social identity or collective self) in comparison to another outgroup. Hence, group membership can shape people’s cognitions, feelings, and behavior (Tajfel & Turner, 1986).

The first theory utilizing the above approach, the SIT (Tajfel & Turner, 1986) assumed that individuals strive to achieve or maintain a positive self-concept. According to SIT, the evaluation of whether the social identity is positive or negative is derived from membership in social groups or categories and their value connotations in comparison to relevant reference groups. Thus, people strive for a positive social identity primarily through the motivation for positive intergroup distinctiveness. It is assumed that this is motivated by the need for positive self-esteem (Abrams & Hogg, 1988). Furthermore, social identity processes are also assumed to be motivated by a need to reduce subjective uncertainty about one’s self-concept (Hogg & Abrams, 1988; Hogg & Mullin, 1999). It is argued that group members will perceptually accentuate the differences between the ingroup and outgroup, and similarities among ingroup members.

Self-categorization theory (Turner et al., 1987) is a complementary theory to SIT (Turner & Reynolds, 2001), which addresses more detailed questions of the relation between the individual and the group and aspects of group formation. SCT starts from the same central assumption as SIT, that persons derive part of their self-concept from their membership in social categories, hence, from ‘self-categorization’. They consider themselves equal to or interchangeable (i.e. indistinguishable) with other members of their own-category, as opposed to members of other categories. Self-categories are hypothesized to vary in their level of inclusiveness and to be hierarchically structured. People may categorize themselves at different levels of abstraction, depending on the social context. According to SCT, higher-order categories furnish the relevant dimensions for comparisons between the included subcategories. Thus, the categories (or groups) of a given level of abstraction are compared in terms of a superordinate category that includes both subcategories (i.e. concept of inclusion). The evaluation of ingroup and outgroup depends upon their perceived relative prototypicality⁴ in terms of

⁴ Prototypicality is defined as the extent to which a given stimulus (i.e. group or group member) is representative of the category as a whole. This is partly determined by principles of normative and comparative fit (see next paragraph).
the superordinate category. Subsequently, intergroup evaluations are based on shared inclusion in a joint category at a higher level.

A core notion of SCT is the clarification of when and how social categories (i.e. group memberships) become salient. SCT predicts that a category becomes salient if it is cognitively accessible and if the perceived reality fits the category’s specifications. Fit can be differentiated in terms of comparative fit and normative fit. The former one is defined as the degree to which intra-group similarities and intergroup differences correlate with the accessible category (i.e. also termed principle of meta-contrast). The latter kind of fit refers to a normative component of the defining categories. Hence, the behavior of the individuals should be in accordance to the stereotypical norms of the accessible categories. In turn, if a category becomes salient, it will lead to more perceived intra-class similarity and inter-class differences. In sum, SCT explains the underlying cognitive processes of category activation, which were not explicitly defined in SIT.

In contrast to the theoretical assumptions of the functional theory of intergroup relations (Sherif et al., 1961), the Social Identity Approach assumes that a highly salient categorical distinction between an ingroup and outgroup is sufficient for ingroup bias (i.e. more positive evaluations of ingroup members compared to outgroup members). Subsequently, perceived group membership is enough to facilitate intergroup competition. This assumption has been confirmed in experimental research using the minimal group paradigm (Brewer, 1979; Diehl, 1990; Tajfel et al., 1971). Hence, the intergroup context does not need a negative interdependence structure between the groups to elicit ingroup bias. Interestingly, Sherif et al. (1961) observed this fact in their summer camp studies in the first phase, where no competition was introduced into the setting. The observations at this stage indicated that there were already occasional rivalries between the two teams.

### 2.6 Categorization models of mergers

The Social Identify Approach (Tajfel & Turner, 1986; Turner et al., 1987) has provided a new perspective on intergroup relations research and has also strongly influenced further research on intergroup contact. Different theoretical frameworks have been developed in order to understand the mechanisms through which contact
conditions may alter cooperative intergroup encounters. Although based on the same theoretical background, these models make somewhat different predictions of the optimal conditions to improve intergroup relations.

The first model, the De-categorization Model (DM), is based on the idea that intergroup contact will be most effective if category saliency is low (Brewer & Miller, 1984). Because categorization is a sufficient condition for intergroup bias (Tajfel et al., 1971), the reduction of a salient categorization should reduce intergroup bias (Turner, 1981). Following this theory, Brewer and Miller (1984) placed much emphasis on developing interpersonal relationships across group boundaries. An abundance of research supported this approach (e.g., Brewer & Miller, 1984; Miller, Brewer, & Edwards, 1985). However, it is not always clear whether the experiments designed to test this approach really have successfully created a personalized identity condition (Vivian, Hewstone, & Brown, 1997). Furthermore, in the current research the main interest was on mergers between two groups. The DM, however, aims at reducing the category salience. Hence, this perspective aims to improve the relations between the groups on interpersonal level and not at an intergroup level (Hewstone & Brown, 1986). Such a personalized form of contact would not really represent a long term combination of two groups into one (see merger definition in chapter 2.1). Therefore, this model was not a primary focus of the current research and, hence, it is not included in the experiments.

Gaertner and colleagues (Gaertner et al., 1993; Gaertner, Mann, Murell, & Dovidio, 1989) assert another model for an intergroup contact situation that should lead to intergroup harmony. They emphasized in their Common Ingroup Identity Model (CIIM) that a re-categorization process during contact (or the merger) would lead to optimal results. The model proposes that transforming members’ cognitive representation of the group membership from two groups to one more inclusive social identity (i.e. one-group representation) can reduce intergroup prejudice and social discrimination, because the original ingroup-outgroup distinction, which accompanies intergroup differentiation and ingroup favoritism (Tajfel et al., 1971), becomes less salient. In this situation, the former outgroup members become members of a new

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5 In this research I treated the words inclusive category (or group or identity), common ingroup and superordinate category (or group or identity) as interchangeable terms.
inclusive category and will be, therefore, ingroup members on a superordinate level and profit from the ingroup bias at this level.

An impressive amount of experimental and field research has supported the CIIM (Gaertner, Dovidio, & Bachman, 1996; Gaertner et al., 1989; Gaertner, Rust, Dovidio, Bachman, & Anastasio, 1994). Moreover, the basic idea of the model has similarities to many real world contexts. For instance, the assimilation idea in the acculturation literature (Berry, 1984; Bourhis, Moise, Perrault, & Senecal, 1997) revealed some parallels to this model. This is because immigrants are meant to become members of the host nation. Thus, immigrants are fostered to identify with the inclusive category of the host nation. Although in this case the immigrants fully conform to the host nation’s identity, the final presentation is a one-group representation. Similarly, the German reunification process has a clear goal to create one united Germany. Although this aim has not yet been reached, the final goal of the reunification is a common group identity and research confirms that a common ingroup representation increases liking between East- and West-Germans (Kessler & Mummendey, 2001). Finally, the CIIM is equivalent to different models of organizational mergers. For instance the transformation strategy (Marks & Mirvis, 2001; Uder & Kramarsch, 2001) or the combine pattern (Mottola et al., 1997; Schoennauer, 1967) represents a new identity for the companies, which is not (directly) related to the former identities. It is thought that synergies between two companies could lead to such a kind of new identity or new corporate culture. Also, an assimilation or absorb strategy is presented in the organizational merger literature (e.g., Marks & Mirvis, 2001; Schoennauer, 1967; Uder & Kramarsch, 2001) which also reflects a ‘one-group’ representation.

Although the model has received strong experimental support, there is one major criticism on its applicability. The model may not be feasible in many ‘real-world’ contexts, because the merging groups may not want to forsake their group identities (Vivian et al., 1997). This fact is quite obvious by looking again at the real-world examples given above. For instance, assimilation in an acculturation context is often not favored by the immigrants, because they want to keep their former group identities (Berry, 1984; Bourhis et al., 1997). Similarly, Germany is even more than before the reunification marked by strong identifications with the former separate German states (Mummendey et al., 1999). Hence, there are examples where it may sometimes be quite hard to foster a single group representation.
Hewstone and Brown (1986; see also Vivian et al., 1997) argued for another approach to intergroup contact in their Mutual Intergroup Differentiation Model (MIDM). The researcher criticized the former models for the lack of generalization associated with the intergroup contact. They theorized that contact-effects generalize to outgroup members only when group memberships are salient within the contact situation (i.e. *two-groups representation*). This model is based on the assumption that the need for positive social identity should be exploited in the intergroup contact situation. It allows maintenance of the group membership and positive distinctiveness. Hence, the MIDM aims not to change the basic category structure of the contact situation. The main idea of the model is to change the negative intergroup perceptions to positive interdependence and evaluations. The salience of the categories is seen as a means for the generalization of these effects.

The MIDM has received empirical support (Brown, Vivian, & Hewstone, 1999; van Oudenhoven, Groenewoud, & Hewstone, 1996; Wilder, 1984). The advantage of the model is its good applicability in natural settings and the possibility for the generalization of positive contact experiences. The model has some parallels to a segregation pattern in the acculturation literature (Berry, 1984; Dovidio, Kawakami, & Gaertner, 2000). In this model the cultural identities of the immigrants and the host nations are retained and the immigrants do not take on the identity of the host nation. Furthermore, this model is also prevalent in the organizational merger context. Uder and Kramarsch (2001) refer to such an organizational merger model as a “holding model”, where no integration between the two involved companies happens. Marks and Mirvis (2001) postulated a similar model. They refer to “preservation combination” – whereby both companies retain their full independence.

However, there are also potential risks associated with such category-based forms of contact. Such contact intensifies the perception that the two groups are distinctly different and thus perpetuates ingroup-outgroup categorization and generalization of positive and negative beliefs are possible (Brown et al., 1999; 6 There are different kinds of possible generalization of the contact experiences. For instance, the experiences can be generalized to all other members of the outgroup which are not present in the contact situation. Or the experiences can be generalized to other situations or even to other outgroups. The interested reader can read a good summary of the different kinds of generalizations in Vivian et al. (1997).
Greenland & Brown, 1999). Hence, the model requires conditions, which foster only positive intergroup experience. The presence of any negative experience would risk a negative generalization of intergroup contact.

Recent research based on these categorization approaches has shown that a common ingroup identification with subgroup differentiation (CISD) offers the most positive condition for generalized positive intergroup contact (e.g., Dovidio, Gaertner, Validzic, 1998; Gonzalez & Brown, 2003; Hornsey & Hogg, 1999, 2000; Huo, Smith, Tyler, & Lind, 1996). As already noted, SIT argues that groups strive for positive distinctiveness (Tajfel & Turner, 1986). Whereas the creation of a common ingroup identity between different groups may produce a threat to the former subgroup identity, a condition leaving the subgroups salient (i.e. distinctive) should enhance liking of the members of the other group (Brown & Wade, 1987; Deschamps & Brown, 1983). This model is a combination of the MIDM and the CIIM and has the advantage of maintaining both a subgroup identity and the benefit of a common, more inclusive, identity (i.e. one-group with subgroup differentiation representation).

Research testing this model has shown that these positive effects seem to work (Dovidio et al., 1998, Gonzalez & Brown, 2003; Huo et al., 1996). Also, the CISD is relevant in different merger contexts. For instance, the model seems to have similarities with an integration pattern as described in the acculturation literature (Berry, 1984; Dovidio et al., 2000). The general idea of the integration pattern is the simultaneous maintenance of the cultural identity of the host nation and the cultural identity of the immigrants’ origin. Furthermore, the CISD has similarities to the organizational merger strategy “best of both” (Marks & Mirvis, 2001) or “merger of equals” (Uder & Kramarsch, 2001), in which the best of both companies is combined to form the new company. Although the final goal of this strategy is to create one new company (i.e. one-group representation), the old companies may still be very strongly recognizable, because many features of both companies are still highly salient. Research in the field of organizational mergers showed already that such a representation has an impact on the intergroup evaluations of the employees involved (Bachman, 1993).
In sum, different models of cognitive representation have been put forward which aim at reducing intergroup tensions during an intergroup contact situation. Although they are based on the same theoretical foundations, they make different predictions for the most useful cognitive representation during intergroup contact. Furthermore, they reveal parallels to real mergers and have also already shown their applicability in merger situations (Gaertner et al., 2001). Because, the current research was mainly interested in the effects of category salience and merger performance on the intergroup evaluations, the focus was on three of these cognitive representations: a one-group representation, a two-group representation, and a one-group with subgroup differentiation representation (see Figure 1). The following chapter deals with the fact that a merger of two groups may by itself influence the cognitive representation of the merger, because the groups become cooperatively interdependent.

2.7 Cooperative interdependence and common ingroup representation

The merger situation itself, however, does also foster a one-group perception (Gaertner et al., 1990). Looking at my definition of a group merger, it is even a goal of the merger. Furthermore, a study by Gaertner et al. provided evidence that cooperation with another group towards a common goal did actually increase a one-group
representation. This, in turn, led to less ingroup bias towards the members of the pre-merger group. In their study, the cognitive representation (one-group vs. two-groups) and the interdependence structure (cooperative vs. no competitive) were manipulated in an experimental laboratory design. The dependent measures of the study were evaluations of the ingroup and the outgroup from which an ingroup bias measure was created (i.e. ingroup evaluation - outgroup evaluation). In line with the findings of Sherif et al. (1961), cooperative interdependence led to less ingroup bias in this study. Furthermore, this effect was explained by a stronger perception of being one common group. Nevertheless, there was still a main effect of the manipulated cognitive representation. The participants in the two-groups condition revealed more ingroup bias compared to the participants in the one-group condition. Hence, even in a cooperative interdependence situation, the perception of the cognitive representation of the merger mattered. Consequently, positive effects of intergroup contact require a cooperative interdependence structure and a common ingroup perception (see also Brewer, 2000). Without such a common ingroup perception, cooperative interdependence “may set the stage for conflict rather than cooperation” (Brewer, 2000, p. 130).

In sum, although a merging situation of two groups may automatically activate a perception of a common group, there could be still different degrees of cognitive merger representations possible. This, in turn, has an impact on the intergroup evaluations of the merging groups.

2.8 Group failure and group success

Although research on cognitive representations has shown its broad applicability in various contexts and in merger situations, the influence of performance perceptions on the intergroup relations seems to have been nearly neglected (but see Haunschild et al., 1994). A group merger has to be evaluated on whether the merged group succeeded or failed to reach its common goals at one point in time. This kind of performance perception itself may have consequences for the intergroup evaluations of the involved merged groups. Worchel and colleagues already pointed to this problem in a series of studies (Worchel et al., 1977, 1978; Worchel & Norvell, 1980; see also Blanchard, Adelman & Cook, 1975; Weber & Camerer, 2003).
Based on the intergroup contact literature and especially on the summer camp study described above (Sherif et al., 1961), Worchel et al. (1977) questioned the universal efficacy of common goals in an intergroup contact context. They suggested that the history of the intergroup relations and the performance outcome of the cooperation should be considered. Worchel et al. conducted a laboratory study with four hundred ninety-four students. In their study, the pre-merger interdependence (cooperative vs. competitive vs. no interdependence) and the feedback about the merger (success vs. failure) were manipulated in an experimental laboratory design. The participants were randomly assigned to a group. Afterwards they were led to believe that they were competing, cooperating, or having no interdependence with another group in the first phase. Afterwards, the two groups merged and worked on two subsequent tasks on which they got a random failure or success feedback. After both phases of the study, participants had to fill out a short questionnaire measuring ingroup bias (i.e. more positive evaluation of pre-merger ingroup members in comparison to pre-merger outgroup members). The results indicated a decrease in intergroup attraction in the condition in which participant group’s first competed and then experienced failure in the merger phase. Hence, a successful cooperation resulted in increased intergroup attraction irrespectively of previous group history. However, if the merger failed, previously competing groups revealed a decrease in intergroup attraction. Thus, both feedback about the merger performance and previous intergroup history influenced intergroup evaluations. These results indicate again that cooperative interdependence during the merger alone might not be enough to create harmonious intergroup relations. As Pettigrew and Tropp (2002) pointed out in their meta-analysis on the Contact Hypothesis, research should start to concentrate on identifying negative conditions, which create less harmonious intergroup encounters. Failure of a cooperative encounter (e.g., group merger) might be one of these conditions.

The first study of Worchel et al. (1977) indicated that the history of the groups played a role as well. Especially competing pre-merger groups yielded stronger ingroup bias after the failure of the merger. The competition of the pre-merger teams might have actually increased the subgroup salience of the involved groups. This, in turn, may explain why the failure of the merger led to stronger ingroup bias. This was confirmed in a second study in which the salience of the subgroups was also manipulated (Worchel et al., 1978). In this study, the pre-merger interdependence (cooperation vs.
competitive), the uniforms of the merging groups (similar dress vs. different dress) and the feedback about the merger (success vs. failure) were manipulated in an experimental laboratory design. Participants had to cooperate or to compete with the other group in the first phase of the experiment. The members of the groups also had to wear similar uniforms or different uniforms to distinguish between the groups. This manipulation was explicitly influencing the salience of subgroups. In a second phase, the two groups had to work cooperatively on two tasks. Participants had to fill out a short questionnaire measuring ingroup bias after both phases of the study. The results indicated that having the two pre-merger groups distinguished by wearing different uniforms increased ingroup bias following the merger of the groups, except in the condition of pre-merger cooperation and merger group success. Hence, wearing different dresses and experiencing a failure of the merger did also result in increased ingroup bias.

Worchel et al. (1978; Worchel & Norvell, 1980) assumed that as members of the two pre-merger groups work cooperatively together, old group boundaries fade and the members see themselves belonging to one common group. However, the failure of the merger motivates the members to seek an explanation for the failure. Even a failure due to impersonal causes (e.g., economic conditions, social and political changes) may lead people to blame identifiable human agents (Allport, 1954). Because members of the outgroup may serve as a source of blame for the failure, scapegoating is likely to happen which will initiate outgroup de-evaluation if the former group boundaries are still subjectively salient (Worchel et al., 1978). Hence, subgroup salience of the former pre-merger group boundaries during the group merger is assumed to be a precursor of increased intergroup tensions (i.e. ingroup bias) if the merger fails. Subsequently, a two-groups representation and a one-group with subgroup differentiation representation of the merger should be especially vulnerable for ingroup bias if the merger undergoes a failure. In contrast, a successful cooperation should reduce intergroup tensions independently of the group representations.

Another prediction can be concluded from the research based on the categorization models of mergers (see chapter 2.6). More specifically, the CIIM and the CISD predicted that a common-ingroup representation (i.e. superordinate salience) should buffer against ingroup bias against members of the pre-merger outgroup, because the pre-merger outgroup is also a part of the common ingroup (Dovidio et al., 1998; Gaertner et al., 1993; Gonzalez & Brown, 2003). This prediction is also in line
with the argument made by Brewer (2000). She assumed that a cooperative interdependence structure needs a common group perception in order to set the stage for intergroup attraction. Hence, a one-group representation as suggested by the CIIM should not increase ingroup bias against the former pre-merger group in the case of a merger failure. Furthermore, also the CISD model that proposes both a salient common ingroup and salient subgroup (i.e. one-group with subgroup differentiation representation) would be assumed to ‘buffer’ against ingroup bias against the former pre-merger group after merger failure. In contrast, a two-groups representation, as suggested by the MIDM, should lead to ingroup bias in the case of negative intergroup experiences like a merger failure, because negative intergroup experiences should be generalized and attributed to the other group (Greenland & Brown, 1999; Vivian et al., 1997). The two-groups representation needs a positive intergroup experience (e.g., merger success) to result in less ingroup bias towards the pre-merger group. Hence, a successful cooperation should reduce the intergroup tensions in all conditions of cognitive representation.

In conclusion, research on the underlying cognitive representations during a group merger has so far not focused on the influence of feedback about the merger performance on the intergroup evaluations. However, research by Worchel et al. (1977, 1978; Worchel & Norvell, 1980) has indicated that performance feedback of a merger has important consequences on the intergroup evaluations of the pre-merger groups. Therefore, it is important to extend the research on the cognitive merger representation by looking at how these interact with feedback about the merger performance on intergroup evaluations. Two competing hypotheses were derived. The first was based on the research and ideas of Worchel et al. (1977, 1978). The second was based on the current literature on the categorization models of mergers (e.g., Dovidio et al., 1998; Gaertner et al., 1993; Gonzalez & Brown, 2003). The hypotheses are summarized in chapter 3.

Recently, it has been shown that the representation of a common inclusive group is also influenced by ingroup projection (Mummendey & Wenzel, 1999). It was an additional aim of this dissertation project to look at the impact of this process during a group merger. In the following section, the process of ingroup projection and its theoretical foundations will be outlined. Furthermore, it will be described why it is important to consider this process and how it could affect the predictions derived so far.
2.9 Ingroup projection and the meaning of the superordinate category

Recently, Mummendey and Wenzel (1999) developed a theoretical approach to explain social discrimination and to predict possibilities for tolerance and plurality. Their focus is not merely on the categorization of groups as described in the above cognitive models of group representations as the meaning of the categories is also taken into consideration. Based on SCT and, in particular, on the concepts of inclusion and prototypicality (Oakes, Haslam, & Turner, 1998), Mummendey and Wenzel (1999) suggest an Ingroup Projection Model (IPM), which assumes that an outgroup will be evaluated negatively if both ingroup and outgroup are perceived as belonging to a superordinate category and if the ingroup's attributes are perceived as more prototypical of this superordinate category than the outgroup’s attributes. The projection process describes the tendency to perceive the ingroup as more similar to or more prototypical of the inclusive category relative to some salient outgroup. It is important to note that ingroup projection describes a relative process – the ingroup is thought to overrate their relative prototypicality compared to the outgroup’s point of view. Thus, it is possible that the ingroup and outgroup agree about the ingroup’s or outgroup’s prototypicality for the inclusive category in an absolute sense. Because of the normative background of the prototype of the inclusive category, any deviation by the outgroup is judged as negative and this motivates and legitimizes outgroup derogation.

Following this line of thinking, the meaning of the superordinate category is an important variable to consider in intergroup relations. Because group members will perceive their ingroup as relatively more prototypical of the inclusive category, outgroup derogation should result from this process. This hypothesized relationship has already been supported in various studies (Waldzus, Mummendey, & Wenzel, 2003; Weber, Mummendey, & Waldzus, 2002; Wenzel, Mummendey, Weber, & Waldzus, 2003). In the case of a merger between two groups, ingroup projection should have an influence on the intergroup relations, because the subgroup categories and the superordinate category are very central and important in this situation. More precisely, the more subgroup members project subgroup attributes onto the inclusive category, the more they should perceive the former outgroup members as being deviant from the inclusive category and, hence, reveal more outgroup derogation.

However, there is at least one important pre-condition. The representation of the inclusive category could hinder ingroup projection. For instance, a complex
representation has been shown to inhibit ingroup projection (Waldzus et al., 2003). Furthermore, the representation of the inclusive category can be fixed, which would imply that projection is impossible. More precisely, the superordinate category can define the meaning of the subgroups in a way which clearly defines the prototypicality of the subgroups for the superordinate category. Laboratory research on cognitive representations of interacting groups did actually fix these superordinate categories in such a way (e.g. Gaertner et al., 1989, 1990; Gonzalez & Brown, 2003). Most of this kind of research uses artificial groups with no real meaning and the meaning of the inclusive categories was clearly defined. For instance, Gaertner and colleagues (Dovidio et al., 1998; Gaertner et al., 1989) manipulated the representation of the inclusive category directly by defining the merged group, by wearing specific kinds of T-shirts, having a special seating position, having a group name, and having complementary roles. The complementary roles, especially, define the new merged group as being nothing without the other group. In this vein, a cognitive representation of one-group, one-group with subgroup differentiation and two-groups represents a defined inclusive category where both pre-merger groups are clearly represented to a similar extend within the inclusive category. Hence, there is not much possibility for projection, because no other information is available in such contexts. Also the first three studies of the current research used such artificial group categories. In such a case it is hard to assume that participants could generalize any attributes of these nearly meaning-free groups onto an inclusive level which is clearly defined. In contrast, natural groups have much more meaning and it should much harder to fix a superordinate category in a way that does not allow any ingroup projection.

The studies of van Leeuwen, van Knippenberg, & Ellemers (2003; see also van Leeuwen, 2001) indirectly supported this reasoning. In their studies, the researcher varied the degrees of how strong the subgroups are represented within the merged group within a minimal group paradigm (i.e. artificial groups). In one condition the inclusive category was defined so that both subgroups were equally represented within the superordinate category. In another condition, one subgroup was fully defining the superordinate category (i.e. full representation). This manipulation can be seen as a manipulation of the degree of ingroup projection (van Leeuwen et al., 2003). And in line with the IPM, a full representation of the ingroup resulted in stronger ingroup bias at the subgroup level compared to a the equal representation condition. In other words,
more ingroup projection (i.e. representation of the subgroup within the superordinate category) resulted in more ingroup bias. Therefore, these findings support the assumption that it is possible to manipulate ingroup projection with artificial groups by fully defining the meaning of the inclusive category.

In sum, ingroup projection can have an important additional impact on intergroup evaluations during a merger. However, ingroup projection should only influence intergroup evaluations of the merger if the inclusive category allows for ingroup projection. If the subgroups have barely any content and the representation of the inclusive category is completely defining the meaning and content of the subgroups, there should be less influence of ingroup projection on the intergroup evaluations.

2.10 Summary

Research in the field on intergroup relations is inevitably relevant for merging groups, because a group merger represents an intergroup situation (Giessner, 2003; Terry, 2001). Allport (1954) already pointed out that it is not a simple case to merely bring together people from different groups without regard of their group membership. In his Contact Hypothesis, he summarized necessary pre-conditions to foster harmonious intergroup contact. The conditions of cooperation and common goals have received the strongest research attention from these pre-conditions. During the 1980s research on the Contact Hypothesis was enriched by the Social Identity Approach (Tajfel & Turner, 1986; Turner et al., 1987). This approach outlined the importance of perceived group membership on intergroup perceptions. More specifically, the perception of being member of a group (i.e. category) is sufficient to elicit ingroup bias (i.e. more positive evaluations of the ingroup compared to the evaluation of the outgroup). Based on this, research on contact between groups has concentrated on underlying perceived cognitive representations. Different models of cognitive representation were put forward (one-group, one-group with subgroup differentiation, two-groups) which aimed at explaining how the contact situation should be cognitively represented to guarantee less ingroup bias between the groups and a generalization of these experiences. Furthermore, it has been shown that these cognitive representations yielded also applicability on merging groups. However, the research on these cognitive merger representations has not looked on the impact of performance outcome of the
merger on the intergroup evaluations. Early research by Worobel et al. (1977, 1978; Worobel & Norvell, 1980) has indicated that feedback about the merger performance has an important influence on intergroup evaluations depending on the salience of group memberships. In addition, feedback about the merger performance is an important aspect in many natural groups, because most mergers are at one point in time evaluated in terms of their success and failure in reaching their goals. Hence, the current research focused on the interactive impact of cognitive merger representations and feedback about the merger performance on intergroup evaluations.

In addition, the current research was interested in how ingroup projection (Mummendey & Wenzel, 1999) might influence the intergroup evaluations during the group merger. Ingroup projection should influence intergroup evaluations in the context of natural groups. The focus was on how ingroup projection might be influenced by the cognitive merger representation and what consequences ingroup projection has on the intergroup evaluations after a feedback about the merger performance.

In the following chapter, which is based on the argumentation of this chapter, the main hypotheses will be summarized. Additionally, a short overview of the four studies will be given.
3 How do merging groups deal with performance feedback?

Hypotheses of the current research

3.1 Main Hypotheses

How do cognitive representations of the merged group and the perceived performance of the merger affect intergroup evaluations between the pre-merger groups? This was the main question of the current research. Based on the theoretical arguments given in chapter 2, different predictions were derived from the theoretical perspectives. These predictions will be now summarized in specific hypotheses. All of the following studies were based on these hypotheses.

Two competing hypotheses regarding the effect of cognitive merger representations and performance feedback of the merger on the intergroup relations between the pre-merger groups are put forward. The first hypothesis is based on research by Worchel et al. (Worchel et al., 1977, 1978; Worchel & Norvell, 1980). They predicted that subgroup salience should lead to stronger pre-merger ingroup bias (i.e. more positive evaluations of the pre-merger ingroup compared to the evaluation of the pre-merger outgroup) in the case of a group failure. This is because group members are looking for a scapegoat to explain the group failure. Subgroup salience provides the group members with a possible object for attributing the merger failure. In contrast, when the merged group succeeds, there should be increased attraction towards the former outgroup independently of the level of subgroup salience during the merger. Hence, the subgroup-salience-hypothesis predicted that the conditions supporting subgroup salience during a merger as proposed by the MIDM (Hewstone & Brown, 1986) and the CISD (Dovidio et al., 1998; Gonzalez & Brown, 2003) should produce more ingroup bias in the case of failure feedback. More specifically, the conditions fostering a two-groups representation or a one-group with subgroup differentiation representation should lead to a higher salience of the subgroups compared to a one-group representation. This, in turn, should lead to more pre-merger ingroup bias against the former pre-merger outgroup within the former two conditions compared to the one-group condition. On the other hand, if the merged groups experienced group success, it was expected that there would be less ingroup bias in all merger conditions.
The subgroup-salience-hypothesis: It is predicted that the strongest ingroup bias against the pre-merger outgroup should be present in the conditions fostering a two-groups representation or a one-group with subgroup differentiation representation and experiencing a merger failure. In contrast, the one-group condition and all merger success conditions should reveal less ingroup bias (see Table 1).

Table 1. The subgroup-salience-hypothesis for ingroup bias against the pre-merger outgroup depending on cognitive merger representation and merger performance.

<table>
<thead>
<tr>
<th>Merger Representation</th>
<th>Merger performance</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Success</td>
</tr>
<tr>
<td>One-group</td>
<td>low</td>
</tr>
<tr>
<td>One-group with subgroup differentiation</td>
<td>low</td>
</tr>
<tr>
<td>Two-groups</td>
<td>low</td>
</tr>
</tbody>
</table>

A competing hypothesis was drawn from the theoretical and empirical research based on the cognitive models of representation during intergroup contact (e.g., Dovidio et al., 1998; Gaertner et al., 1993; Gonzalez & Brown, 2003). In particular, the two-groups condition as described in the MIDM seems to foster the generalization of negative attitudes toward the pre-merger outgroup. The experience of a merger failure is a negative experience and should, therefore, lead to more ingroup bias against the pre-merger outgroup if the merger is represented as two-groups. In contrast, a one-group with subgroup differentiation representation and a one-group representation have a common ingroup representation (i.e. superordinate category) salient, which should foster less ingroup bias against the pre-merger outgroup, because the pre-merger outgroup also belongs to a common ingroup. This is in line with the assumption that a cooperative outcome interdependence structure needs a common group identity in order to set the stage for intergroup attraction (Brewer, 2000). Following this line of thinking, a competing superordinate-group-salience-hypothesis was put forward. It was predicted that the condition of one-group with subgroup differentiation and the one-group should “buffer” against group failure. Hence, there should be less ingroup bias compared to the
two-groups condition within the failure condition. On the other hand, if the merged
groups experience group success, less ingroup bias against the pre-merger outgroup is
expected (independently of the merger representation).

The superordinate-group-salience-hypothesis: It is predicted that the strongest
ingroup bias against the pre-merger outgroup should be present only in the condition
fostering a two-group representation and receiving a failure feedback about the merger
performance. All other conditions should yield less ingroup bias against the former pre-
merger group (see Table 2).

Table 2. The superordinate-group-salience-hypothesis for ingroup bias against the pre-
merger outgroup depending on cognitive merger representation and merger
performance.

<table>
<thead>
<tr>
<th>Merger Representation</th>
<th>Success</th>
<th>Failure</th>
</tr>
</thead>
<tbody>
<tr>
<td>One-group</td>
<td>low</td>
<td>low</td>
</tr>
<tr>
<td>One-group with subgroup differentiation</td>
<td>low</td>
<td>low</td>
</tr>
<tr>
<td>Two-groups</td>
<td>low</td>
<td>high</td>
</tr>
</tbody>
</table>

The main goal of the current research was to test these two competing
hypotheses. They were tested in all 4 studies. The dissertation project was additionally
interested in the role of ingroup projection (Mummendey & Wenzel, 1999) during the
merger process. As discussed in chapter 2, several preconditions need to be in place for
ingroup projection to have an influence on intergroup relations. The basic hypothesis of
the IPM is that projection is positively correlated with ingroup bias. In this vein,
ingroup projection should play a mediating role on the intergroup evaluations. However,
this process, could be reduced or inhibited if the inclusive category is completely
defined in a way which does not allow for ingroup projection. In other words, if the
superordinate category completely defines the meaning of the subgroups in terms of
their prototypicality, projection should be reduced and not influence the intergroup evaluations. Therefore the following hypothesis was put forward in very general terms.

**Ingroup-projection-hypothesis.** If the category memberships of the merging groups have barely any content and the superordinate merger category is completely defined (i.e. artificial groups), ingroup projection should be low and have a non-significant impact on the intergroup evaluations. In contrast, in the context of natural groups, ingroup projection should also predict intergroup evaluations of the pre-merger groups (mediating process).

### 3.2 Overview of the studies

Four studies, which tested the competing hypotheses and looked at the effects of ingroup projection, are presented in the following chapters. The studies are built up on one another. The first three studies used the same 3 (merger representation: one-group vs. one-group with subgroup differentiation vs. two-groups) x 2 (feedback: success vs. failure) between-subjects design in experimental laboratory paradigms. The last study was conducted with natural groups. Therefore, quasi-experimental factors were used in this study and the design had to be adapted to the reality constraints.

The first study presented in chapter 4 was conducted with an experimental paradigm adapted from studies of Worchel et al. (1977, 1978) and Gaertner et al. (1989, 1990). The study was conducted with undergraduate students at the Friedrich-Schiller-Universität, Jena, Germany. In the study, 6 participants were divided randomly into two 3-person groups. They got a group label as red or blue group and different means (e.g., coats, pencil, poster) were used foster this group perception. The two groups first worked on different tasks in competition to each other to foster the subgroup salience. Afterwards, the groups were merged and the merger representation was manipulated by using different means (e.g., coats, names, posters, seating positions). Subsequently, the merged groups worked on two tasks. At this stage, feedback was manipulated by giving a random feedback about the performance on the task. Participants had to fill out questionnaires before and after the feedback. In these questionnaires, ingroup bias and other constructs of interest were measured.
In chapter 5, a follow-up study was conducted. The study was conducted with undergraduate psychology students at the University of Kent at Canterbury, United Kingdom. I tried to replicate the results of the first study by using another experimental paradigm. The paradigm was an adapted minimal group paradigm (Tajfel et al., 1971) as used by van Leeuwen et al. (2003). Hence, no real face-to-face interaction between the participants was allowed. Participants arrived at the laboratory and were immediately guided to separate cubicles. All instructions were given via a computer and participants were led to believe that they were somehow connected to 5 other participants. The procedure followed the procedure of the first study. To foster group perceptions and the merger representation manipulation, graphical means on the computer screen were used (e.g., background color, color of words, pictures). In addition to the first study, I was also interested in looking for a mediating process. Therefore, the questionnaires included also measures of the mediating variable.

Because study 2 yielded some unexpected methodological problems, I conducted this study again with some improvements. In chapter 6, the improved study is presented. This study was conducted with undergraduate psychology students at the Friedrich-Schiller-Universität, Jena, Germany. The procedure of this study was exactly the same as the second study. However, the measures used in this study were slightly changed compared to the second study. It was possible to test for the mediating process in this study.

The first three studies yielded a consistent pattern of results. Moreover, a mediating process could be found. Therefore, the aim of the last study was to test the competing hypotheses in a setting with natural groups. Chapter 7 presents this study. The study was conducted in the context of the German reunification, because it represents a real merger of East- and West- Germany. The study was conducted via Internet and a heterogeneous sample of Germans took part. Because natural groups were involved in the study, I had to adapt the experimental design. A 2 (participants’ origin: East German vs. West German) by 2 (merger representation: one-group with subgroup differentiation vs. two groups) by 2 (feedback: success vs. failure) between-subjects design was used. The first two factors were quasi-experimental and the last factor was manipulated. The general findings of all four studies will be summarized and discussed in chapter 8.
4 The role of cognitive representation and feedback during a group merger in a small group encounter (Study 1)

4.1 Introduction

The main goal of the first study was to examine the predictions put forward by the two competing hypotheses: *subgroup-saliency-hypothesis* vs. *superordinate-group-salience-hypothesis*. The experimental paradigms used by Worchel et al. (1977, 1978) and Gaertner et al. (1989, 1990) were adapted for this study. Hence, six participants took part in each session and were divided into two artificial subgroups in which they solved some tasks in competition with each other. In the second intergroup encounter phase, the groups merged and the manipulation of cognitive representation was implemented. Finally, the merged groups got a random feedback of their joint endeavor. Only a success or failure feedback was given. A control group receiving no feedback was not included, because the dependent variables were measured before and after the feedback manipulation. Hence, it was possible to look at the changes due to the feedback.

In essence, this study involved realistic contact between groups. However, the groups were artificial and the representation of the inclusive category was manipulated in a way that did not leave much room for ingroup projection. Therefore, it was assumed that ingroup projection should be rather low in this study and should not have a major influence on the intergroup evaluations.

4.2 Method

*Participants and design*

Two hundred and forty three students (74 male, 167 female, 2 participants have not indicated their gender; age: $M = 21.80, SD = 2.51$) from the Friedrich-Schiller-Universität Jena were recruited individually to take part in an experiment on group decision-making, group creativity and group performance. Because of the difficulty of getting six people at the same time, it was necessary in some sessions to complete the number of participants with confederates to keep the group size constant. This procedure was necessary on 9 occasions. The confederates were blind to the
manipulations and preliminary analyses yielded no significant impact of the sessions with confederates on the major results. Therefore, these sessions were included in the analyses. Participants received 5 Euro for their participation. Furthermore, after the experimental session, participants were included in a price draw over 30, 20 and 10 Euro. This was because participants competed for a monetary reward in the studies, which was actually never paid to them. The design of the study was a 3 (merger representation: one-group, one-group with subgroup differentiation, two-groups) by 2 (feedback: failure, success) between-subjects design. In all conditions, the subgroups were of equal size and status and the interdependence structure were held constant between the conditions.

**Procedure**

Each experimental session consisted of six participants and took about 45 minutes. Upon arrival, the participants were guided into an experimental room. The participants were informed that each task must be completed within a certain time period, and if the product of the task met specific standards, they would receive a financial reward for their work. Participants were also told to expect to complete some questionnaires concerning the tasks throughout the study and that video cameras would be used to tape their decision-making.

*Subgroup formation.* Subsequently the experimenter stated that for the upcoming tasks it would be necessary to divide the group into two small ones. Participants were randomly allocated to one of the two groups by a lottery using red and blue slips. The groups were also referred to as blue or red group to ostensibly maintain the anonymity of the participants. Afterwards, the groups were led by the experimenters to separate rooms equipped with a visible video-camera, a poster with the group name and pencils in the team color on a table. The participants were told that they should wear coats, which had the color of their groups for reasons of analyzing the video material. These coats had also a visible number, which was later used by the

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7 Because of financial constraints it was not possible to pay the participants money promised in the tasks of the study (but each participant got the promised 5 Euro). This may seem especially problematic regarding ethical concerns. However, the participants were detailed informed of why they did not get money after the study. Further, in pilot studies and throughout the study itself, it was ensured that nobody of the participants was disappointed of this procedure. Furthermore, the participation in the price raffle represented a fair compensation to all participants.
participants to evaluate each participant except himself or herself (see measures).
Furthermore, the experimenter took a photograph of the subgroups explaining that it
was necessary for the documentation of the study. Next, the participants had to work
together on a brainstorming task. Their task was to look for as many different and
creative uses of a vase as possible. They had three minutes of time and the
experimenter stated that their results (in quantity and creativity) would be compared
with the results of the other subgroup. The better group would earn a monetary prize of
3 Euro. After three minutes had elapsed the experimenter collected the results and
introduced a second brainstorming task. The participants had to look for as many
different creative uses of a photo-camera as possible. Again the groups were informed
that they would be competing against each other for the reward of 3 Euro available for
the task. The groups again had three minutes to complete the task and the results would
be compared on the basis of their quantity and creativity. The experimenter ostensibly
used the video camera during both tasks. After three minutes the experimenter collected
the results and then explained that because the solution of both tasks would require
some time to analyze, the results would not be made available until the end of the
study. In reality, the participants were never informed of their outcomes.

Manipulation of merger representation. Following the completion of the
brainstorming task, participants were informed of the merger with the other group,
which would take place soon in a different room within the building. The experimenter
told the participants that the merger is necessary for solving the subsequent tasks. At
this point, the manipulation of the merger representation was implemented. Several
strategies were used (see Figure 2) to alter participants’ conceptual representations of
the aggregate as one-group (high superordinate category salience), one-group with
subgroup differentiation (high superordinate and subgroup category salience) and, two-
groups (high subgroup salience).

In the one-group condition, the participants were told that they would have to
work on further tasks together as one group. Therefore, they had to remove the blue and
red coats. The experimenter referred to the merged group as white group throughout the
rest of the study. Participants were instructed to wear a name badge of the white group.
A photograph of the whole team was taken whilst all members were holding onto a
poster with the label “white working group” which was then hung visibly in the middle
of a wall in the room. They were seated in an integrated seating pattern around a square
table (see Gaertner et al., 1989). Again, a video camera was used to ostensibly tape the decision process of the group. Finally, the team’s solutions of the tasks were registered on a response sheet titled “White working group” and the group used white pencils.

In the one-group with subgroup differentiation condition, the participants were told that they would have to work on further tasks together and remain as the red and the blue group and at the same time form a common “white group”. Thus, the participants had to retain their original group colored coats and to wear a name badge of the white group. The experimenter referred to them as blue group and red group forming the common white group throughout the rest of the study. A photograph of all holding posters of their subgroups and the common white group was taken (i.e. three posters all together). The posters were then hung visibly in the middle of the room’s wall, with each group poster on the corresponding group side. Further, the members of each subgroup were seated in a segregated seating order on either side of a single square table. As in the one-group condition, one video camera was used to ostensibly tape the decision making process. At last, the team’s solutions of the tasks were registered on a response sheet titled “White group: Blue group / Red group” and the group used white pencils.

Finally, in the two-groups condition, the participants were told that they would have to work on further tasks together but remain as the red and the blue group. Consequently, they had to retain their original group colored coats and the experimenter referred to the two groups as red and blue group throughout the rest of the study. Photographs of the blue and the red group were taken whilst the subgroup members were holding onto a poster with the name of their subgroups. Each poster was later hung on the wall behind their own group. They were seated in a segregated seating pattern (blue group versus red group) on two opposite square tables with a gap of about one meter. Two video cameras were used for the two-groups condition to ostensibly tape the decision process of the subgroups. Finally, the team’s solutions for the tasks were registered on a response sheet titled “Blue group / Red group” and the group used pencils in their respective team colors.
Manipulation of feedback. After the manipulation of merger representation, the first cooperative task began. It was a modified version of the Desert Survival Situation (Lafferty & Pond, 1974). It consisted of reaching consensus on the importance ranking from a list of 10 utensils after a plane crashed somewhere in a desert. Participants were told that the result of the whole group would be compared to groups who already have taken part on this study (relative to an expert solution). The experimenter also informed the participants that they would have only five minutes time to come to one solution and they could earn again a monetary award of 6 Euro (in the two-groups condition: 3 Euro for each group) if they were better than the average groups solutions so far, and even 12 Euro (in the two-groups condition: 6 Euro for each group) if they belonged to the best 20 per cent of the groups solutions so far. After 5 minutes had elapsed, the solution was collected and the first questionnaire (before the feedback) was handed out. The experimenter ostensibly analyzed the groups’ solution with faked solution matrices while the participants were filling out the questionnaire. Afterwards, the experimenter
announced the group result of the first cooperative task. In the *success condition*, the participants received feedback that they did a very good job and their solution even belonged to the best 20 per cent of the solutions so far. In contrast, the participants in the *failure condition* were informed that their result was worse than the average and they would not get any monetary award. The feedback was given randomly to the participating groups.

Following the first feedback, the merged groups had to work on a further cooperative task – the NASA survival task (Hall, 1989), which was very similar to the first task. Again the participants had 5 minutes of time to provide one solution of the task and the groups could again earn a monetary award as described for the first task. Upon completion of the second task, the experimenter ostensibly analyzed the group’s solution immediately and provided the participants with feedback. All groups were given the same feedback they had received on the first task in this series. Thus, each group was informed that they either succeeded or failed at both tasks. After the experimenter announced that a further task would follow (which never took place), the second questionnaire (*after the feedback*) was handed out to the participants. Finally, participants were thoroughly debriefed and put in the price-draw.

**Measures**

*Before the feedback.* All items in the questionnaire used 7-point scales ranging from 1 (*not at all*) to 7 (*very much*). The questionnaire consisted first of an attraction measure of ingroup and outgroup members actually present in the interaction (Gaertner et al., 1989). The participants had to rate on four items each participant (except for themselves) regarding how co-operative, friendly, effective and likable they found each other (e.g., “During the last task I liked this person.”). Participants had to fill in the number of each participant except himself or herself into the questionnaire before they indicated the respective evaluation. The overall internal consistency of the scales was sufficient (α = .71). A general index of *ingroup bias* was constructed by subtracting each participant’s mean rating of the two ingroup members from that of the three outgroup members. The scale ranged from -6 to +6, with higher scores indicating more ingroup bias.

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8 It was said the group would receive the money at the end of the study.
The next items examined the cognitive representation of the aggregate during the cooperative task (see Gaertner et al., 1989, 1990). Respondents had to choose to what extent they felt like one-group, two-groups, or two-groups within one-group on three separate questions (e.g., “During the last task it felt like being one group.”) These measures served as manipulation checks for merger representation.

The intergroup anxiety scale adapted from Stephan and Stephan (1985) was included. Participants had to assess the extent to which the intergroup interaction activated negative feelings (“How did you feel during the last task”: awkward, confident [-], careful [-], tense, frustrated, nervous). The scale had a sufficient internal consistency ($\alpha = .72$) and ranged from 1 (= low anxiety) to 7 (= high anxiety). This measure was to ensure that the manipulation of merger representation did not influence the intergroup anxiety level before the feedback manipulation. Finally, a measure to determine ingroup projection was included. The measure used two pictorial items to tap the construct of ingroup projection (see Waldzus et al., 2003). The participants had to rate how similar the red group/blue group was for the merged group. The 7-point pictorial scale was representing the merged group with a big circle and the subgroups with a small circle approaching each other. An index of ingroup projection was constructed by subtracting the perceived typicality of the ingroup from the perceived typicality of the outgroup. The scale ranged from -6 to +6 with higher scores indicating more ingroup projection.

After the feedback. The post-feedback questionnaire consisted of the same measures as the first questionnaire: ingroup bias ($\alpha = .77$), intergroup anxiety ($\alpha = .81$), and ingroup projection. Additionally, the second questionnaire contained some further measures. A single item asking for the overall attitude towards the merged group was included (“My general attitude toward the whole group is… “; 1 = strong antipathy to 7 = strong sympathy). This measure and the intergroup anxiety measure served as a manipulation check for feedback. Finally, some demographic questions were included asking for gender and age.

4.3 Results

Because the experiment involved interacting groups and hence there was a interdependence among the 6 participants per session, I tested first whether these dependencies influenced the dependent variables (see Anderson & Ager, 1978). The
analyses yielded dependencies for most of the dependent variables. Therefore, the unit of analysis throughout all statistical analyses was the group mean for each 6-person group (N = 42) rather than each individual rating.

Table 3. Effects of the merger representation on cognitive representations

<table>
<thead>
<tr>
<th>Merger representation</th>
<th>One-group</th>
<th>One-group with subgroup differentiation</th>
<th>Two-groups</th>
</tr>
</thead>
<tbody>
<tr>
<td>One-group</td>
<td>5.8 \text{a}</td>
<td>5.9 \text{a}</td>
<td>4.4 \text{b}</td>
</tr>
<tr>
<td>Two-groups in one-group</td>
<td>3.1 \text{a}</td>
<td>4.1 \text{b}</td>
<td>5.2 \text{c}</td>
</tr>
<tr>
<td>Two-groups</td>
<td>1.6 \text{a}</td>
<td>1.9 \text{a}</td>
<td>4.1 \text{b}</td>
</tr>
</tbody>
</table>

Note. Means with different subscripts within a row are reliably (p < .05) different from one another according to simple main effects with Bonferroni adjustment.

Before the feedback

Manipulation check of merger representation. One experimental manipulation was designed to affect people’s cognitive representations of the merged group during the interaction. The efficacy of the representation manipulation was tested with a 3 (merger representation) x 3 (measures of cognitive representation) repeated-measures ANOVA, with the first factor as between-subject factor and the last factor as within-subject factor, was conducted (see Table 3). The ANOVA revealed a reliable interaction\(^9\), \(F(4, 78) = 24.63, p < .01, \eta^2_p = .56\). Participant groups in the one-group and in the one-group with subgroup differentiation conditions perceived the aggregate more as one-group, and less as two-groups, than participant groups in the two-groups condition. Furthermore, the participant groups in the two-groups condition perceived the aggregate more as two-groups within one-group compared to the one-group with

\(^9\) \(\eta^2_p\) denotes squared partial \(\eta^2\) as computed by SPSS 11/12.
subgroup differentiation condition. Participant groups in the one-group condition perceived the aggregate less as two-groups in one-group in comparison to the other two conditions. Hence, the manipulation of the merger representation had the expected effects on the participant groups.

*Ingroup bias, intergroup anxiety, and ingroup projection.* Before testing the hypothesis, the influence of the merger representation manipulation on *ingroup bias, intergroup anxiety,* and *ingroup projection* before the feedback manipulation was explored. Separate 3 (merger representation) x 2 (feedback) between-subjects ANOVAs were performed. There was no main effect of feedback on any of the measures. Furthermore, there was no main effect of merger representation on intergroup anxiety and ingroup projection. The average level of intergroup anxiety was low ($M = 1.76$, $SD = .52$). The average level of projection ($M = .06$, $SD = .30$) did not differ significantly from zero, $t(41) = 1.32, p = .19$, indicating that levels of projection were rather low. However, ingroup bias was influenced by merger representation, $F(2, 39) = 4.59, p = .02, \eta^2_p = .19$. The participant groups in the two-groups condition revealed the strongest ingroup bias compared to participant groups in the one-group condition and in the one-group with subgroup differentiation condition (see Table 4). This result is in line with previous research in this area (e.g., Gaertner et al, 1990; Gonzalez & Brown, 2003). There were no interaction effects on any of the measures.

*After the feedback*

*Manipulation check of feedback.* A 3 (merger representation) x 2 (feedback) between-subjects MANOVA with intergroup anxiety and overall attitude toward the merged group as dependent variables yielded only a multivariate main effect of feedback, $F(2, 35) = 6.45, p < .01, \eta^2_p = .27$. This main effect was explained by univariate effects on intergroup anxiety, $F(1, 36) = 10.68, p < .01, \eta^2_p = .23$, and on the overall attitude toward the merged group, $F(1, 36) = 6.70, p = .01, \eta^2_p = .16$. Participant groups in the failure condition revealed a higher level of intergroup anxiety ($M = 1.65$, $SD = .52$) and a less positive evaluation of the merged group ($M = 5.27$, $SD = .39$) compared to the participant groups in the success condition (anxiety: $M = 1.17$, $SD = .42$; evaluation: $M = 5.69$, $SD = .60$). These results confirmed the successful feedback manipulation.
Ingroup bias. Two analyses were conducted on the main dependent variable to evaluate the combined influence of feedback and merger representation. First, a 3 (merger representations) x 2 (feedback) between-subjects ANOVA was performed on the ingroup bias measure of the second measurement point (see Table 4). The results revealed a main effect of the merger representation, $F(2, 36) = 4.01, p = .03, \eta^2_p = .18$. Similar to the first measurement point, the participant groups in the two-groups condition revealed the strongest bias compared to the participant groups in the one-group condition and the one-group with subgroup differentiation condition. However, this main effect was qualified by an almost significant interaction, $F(2, 36) = 3.15, p = .05, \eta^2_p = .15$. Participant groups in the two-groups / failure condition yielded the strongest ingroup bias compared to all other conditions (see Figure 3).

Second, and in line with the two competing hypotheses, two a priori contrast analyses were conducted. The first one tested the *subgroup-salience-hypothesis*, assuming that the two conditions with subgroup salience within the failure condition should lead to stronger ingroup bias compared to a one-group perception within failure condition and all success conditions (-2, -2, 1, 1, 1, 1). The second contrast tested the *superordinate-group-salience-hypothesis*, predicting that stronger ingroup bias should
only be present within the two-group / failure condition compared to the other five conditions (-5, 1, 1, 1, 1, 1). After testing each a-priori contrast, the significance of between-condition effects not captured by the a priori contrast was tested (see Abelson & Prentice, 1997). The contrast for the subgroup-salience-hypothesis was not significant, $F(1, 36) = 1.53, p = .22, R^2 = .03$. However, there was strong support for the superordinate-group-salience-hypothesis $^{10}$, $F(1, 36) = 13.36, p < .01, R^2 = .26$. The analysis of residuals, testing the significance of between-condition effects not captured by the a priori contrast, yielded a non-significant result $F(4, 36) = 0.51, p = .73$, and thus did not explain much variance over and above the captured by the focal contrast, $R^2_{change} = .04$. The results indicated that the participant groups in the two-groups / failure condition revealed the highest degree of ingroup bias compared to all other conditions.

Change of ingroup bias. A 3 (merger representation) x 2 (feedback) x 2 (measurement point: before and after feedback) repeated-measure ANOVA with ingroup bias as the dependent variable was conducted. The first two factors were between-subjects factors and the last a within-subjects factor. The aim of this analysis was to clarify the changes of ingroup bias in the different experimental conditions. The analyses revealed a significant main effect of measurement point, $F(1, 36) = 7.11, p = .01, \eta_p^2 = .17$, indicating that across the manipulated conditions ingroup bias was higher at the first measurement point ($M = .33, SD = .34$) compared to the second one ($M = .20, SD = .34$). Furthermore, there was a main effect of the merger representations, $F(2, 36) = 5.42, p < .01, \eta_p^2 = .23$. Overall ingroup bias was higher in the two-groups condition ($M = .46, SD = .33$) compared to the one-group condition ($M = .21, SD = .25$) and the one-group with subgroup differentiation condition ($M = .13, SD = .35$). However, these effects were qualified by a significant three-way interaction, $F(2, 36) = 3.27, p < .05, \eta_p^2 = .15$ (see Table 4). A simple main effect analysis$^{11}$ revealed that this interaction is mainly due to a decrease in the level of ingroup bias in the two-groups / success condition, $F(1, 36) = 7.69, p < .01, \eta_p^2 = .18$, and a decrease in ingroup bias in the one-

$^{10}$ The significant contrast on ingroup bias was mainly explained by a devaluation of the outgroup.
Separate contrast analyses for ingroup evaluation and outgroup evaluation revealed that only the contrast on outgroup evaluation was significant, $F(1, 36) = 8.15, p = .07 R^2 = .15$. The residual variance of was non-significant, $F(4, 36) = 2.15, p = .09$. Hence, ingroup bias was mainly explained by an outgroup devaluation in the two-groups/failure condition.

$^{11}$ The p-values were Bonferroni adjusted.
group with subgroup differentiation / failure condition, $F(1, 36) = 5.24, p = .03, \eta^2_p = .13$. Hence, the low bias in the success condition at the second measurement point is explained by the constant low levels of bias in the one-group and one-group with subgroup differentiation conditions and a reliable decrease in bias in the two-groups condition. In contrast, the bias level of the two-groups condition stayed at the same high level at the second measurement point compared to the first measurement point within the failure feedback condition.

Table 4. Means (standard deviations) of ingroup bias.

<table>
<thead>
<tr>
<th>Merger representation</th>
<th>One-group</th>
<th>One-group with subgroup differentiation</th>
<th>Two-groups</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Pre-feedback</td>
<td>Post-feedback</td>
<td>Pre-feedback</td>
</tr>
<tr>
<td>Success</td>
<td>.31 (.23)</td>
<td>.15 (.23)</td>
<td>.16 (.32)</td>
</tr>
<tr>
<td>Failure</td>
<td>.19 (.30)</td>
<td>.18 (.27)</td>
<td>.25 (.32)</td>
</tr>
<tr>
<td>Total</td>
<td>.25 (.27)</td>
<td>.16 (.24)</td>
<td>.20 (.31)</td>
</tr>
</tbody>
</table>

Projection. A 3 (merger representation) x 2 (feedback) between-subjects ANOVA was performed on the projection measure from the second measurement point. Again, projection was not influenced by the experimental manipulations and the mean level of projection was again low ($M = .14, SD = .49$). However, as predicted by the Ingroup Projection Model, projection was correlated with ingroup bias, $r(40) = .37, p = .01$. Hence, the more the participant groups perceived their subgroup as typical for the inclusive category, the more they revealed ingroup bias. Further analyses with this measure, however, did not indicate that ingroup projection influenced the findings on ingroup bias regarding the experimental manipulations.
4.4 Discussion

The first study was designed to test how different merger representations and feedback of the merger performance influence the intergroup evaluation of the pre-merger groups. The results of Study 1 were congruent with the superordinate-group-salience-hypothesis and did not support the subgroup-salience hypothesis. Only participant groups within a two-groups merger representation experiencing failure expressed stronger ingroup bias compared to the other conditions. Hence, a success feedback had a positive influence on the intergroup relations between the pre-merger groups. Success led to less ingroup bias in all conditions of the cognitive merger representations. Especially the two-groups condition, which yielded high ingroup bias before the feedback, revealed a reliable decrease in the level of bias. The other conditions remained on the low level of ingroup bias after the success feedback. Hence, success is capable of improving intergroup evaluations – a finding which is in line with previous research (Sherif et al., 1961; Worchel et al., 1977). In contrast to the success feedback, failure feedback led to strong ingroup bias only in the two-groups condition. Hence, only in the condition where the superordinate category had not been made explicitly salient, ingroup bias remained on a high level after the failure of the merger. The one-group with subgroup differentiation condition revealed even a decrease in the level of ingroup bias in the failure condition. Although I had not explicitly predicted this result, it is in line with the study of Gonzalez and Brown (2003), in which this condition led to the lowest levels of ingroup bias.

After the manipulation of the cognitive merger representation, only the two-groups condition yielded ingroup bias. This result is in line with recent research (Gaertner et al., 1990; Gonzalez & Brown, 2003). The condition with subgroup salience can result in stronger ingroup bias, because negative intergroup experiences can be generalized to the other group (e.g., Greenland & Brown, 1999). Hence, the stronger bias in this condition even before the feedback manipulation indicates that the intergroup contact situation itself may have elicited negative experiences (i.e. the face-to-face interaction during the contact situation).

The manipulation of the cognitive merger representation yielded the expected effects on the manipulation check. As already discussed in the chapter 2.7, the cooperative work towards a common goal led in all conditions to a perception of a common group. In line with the intended merger representation manipulation and
previous research by Gaertner et al. (1990), there was a stronger one-group perception within the one-group condition and within the one-group with subgroup differentiation condition compared to the two-groups condition. Moreover, the two-groups perception was highest in the two-group condition and the two-groups within one-group perception was strongest in the one-group with subgroup differentiation condition and the two-groups condition. The study by Gaertner et al. yielded similar results on the manipulation checks in the cooperation condition (see also Gonzalez & Brown, 2003). Nevertheless, the manipulation of the cognitive representations had an impact on ingroup bias in the study of Gaertner et al. (1990). This is similar to the findings in the present study. In sum, I argue that it is a reality constraint that in the condition where a two-groups perception is fostered, a slight perception of a common ingroup may be present as well.

As predicted, ingroup projection did not play a central role in this experimental design. The degree of projection was not influenced by the manipulated condition, the general means of projection and the variance were rather low, and projection was only correlated with ingroup bias after the failure of the merged group encounter. The participant groups could not project much onto the superordinate category, because the experimental paradigm used artificial groups. There was barely content of the subgroups category and the content of the inclusive category was directly fixed by the different means to manipulate the cognitive representations (i.e. coats, seating position, pencils, group name, and so on). Hence, no room was left for projection. Furthermore, projection might only play a role if a history of intergroup relations exists. Projection was correlated with ingroup bias after the feedback manipulation. Hence, this situation could have triggered a re-evaluation of the intergroup situation and projection became a predictor of ingroup bias. In sum, the paradigm used did control for ingroup projection. However, for natural groups, projection should be an important variable to look at.

Two competing hypotheses were tested in the first study. I found support for the superordinate-group-salience-hypothesis. The second study should confirm these results using another experimental paradigm. I used an adapted minimal group paradigm (see van Leeuwen et al., 2003). This kind of paradigm implies no real contact between the group members. A replication of the results of Study 1 by using another experimental paradigm would strengthen the findings.
5 A replication with a minimal group paradigm and outgroup trust as a mediating process (Study 2)

5.1 Introduction

Two competing hypotheses were tested in the first study. I found support for the superordinate-group-salience-hypothesis. The second study should confirm these results using an adapted minimal group paradigm (Tajfel, 1970; Tajfel et al., 1971; van Leeuwen et al., 2003). This kind of paradigm implies no real face-to-face contact between the group members and has been proved to be useful in testing effects of cognitive merger patterns (van Leeuwen et al., 2003). It was not perceived as problematic that participants had no real face-to-face contact in this study, because effects of perceived group membership are not conditional on such real forms of contact (Tajfel & Turner, 1986).

5.2 Outgroup trust as mediator

Furthermore, I was interested in exploring mediating processes. Why do group members evaluate the pre-merger outgroup members as less or more positive? As outlined already, the merger situation implies a form of cooperative interdependence between the pre-merger groups. However, cooperative interdependence alone is not sufficient to buffer against ingroup bias during a merger as the results of Study 1 indicated. Brewer (2000) argued that any form of cooperative interdependence engenders a need for trust in the other partner. Apart from cooperative interdependence, a common ingroup perception is necessary to create this perception of trust in the other group. And it has been shown that a common ingroup perception creates a feeling of category-based trust in the other group (Kramer, Brewer, & Hanna, 1996; see also Williams, 2001). Although the concept of trust has mainly been applied in the organizational literature (Dirks & Ferrin, 2001; Jones & George, 1998; Kramer, 1999), there has also been some attention on the category based-trust construct in intergroup encounter situations (Brewer, 2000; Kramer & Carnevale, 2001).

Trust is a multifaceted concept (Corazzini, 1977; Dirks & Ferrin, 2001; Kramer, 1999) that has been studied from different research perspectives. Despite the various
definitions of trust, there are a number of common criteria unifying the different applications of this construct. More specifically, there is widespread agreement that trust is a psychological state which indicates one’s willingness to rely on another’s intentions of behavior in a situation involving the risk to be vulnerable (Dirks & Ferrin, 2001; Mayer, Davis & Schoorman, 1995; Williams, 2001). Hence, trust is a relational construct. This fact can be affirmed by looking at more general definitions. For instance, the Merriam-Webster-Online-Dictionary (2004) defines trust as “condition of some relationship” (definition, 5a). Therefore, trust in another person or another group is different from an evaluation of this group or person.

In the context of the current research, outgroup trust (i.e. a category-based form of trust) can be defined as an understanding of the relationship towards another group in situations that involve risks or vulnerability (Dirks & Ferrin, 2001; Kramer, 1999). Interdependence of the involved groups is a necessary pre-condition for trust to arise (Dirks & Ferrin, 2001; Mayer et al., 1995; McEvily, Weber, Bicchieri & Ho, 2002). Because the merger creates a situation of cooperative interdependence, trust concerns should become important. Research on organizational mergers has already shown that trust in the merging group is a key mediating variable during the integration process (Stahl & Sitkin, 2002).

Trust in the other group can have many different bases (Kramer, 1999). The most important bases in the current research are history or intergroup experience (i.e. performance of the merger) and category perceptions (i.e. a common ingroup perception). Positive experiences, such as a successful merger, should lead to more trust in the other group, because the positive history provides the basis for trust in the other group (Jones & George, 1998; Kramer, 1999). In contrast, a merger failure increases the perception of uncertainty. Therefore, the group history does not provide a sufficient base for outgroup trust. However, the trustworthiness of the other group can be based on the category perceptions. Following the argument of Brewer (2000), a common ingroup perception is a necessary pre-condition for trust development towards the other group. Common ingroup perceptions have been shown to produce strong perceptions of outgroup trust (Kramer et al., 1996). Therefore, the superordinate category salience (as

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12 It can be assumed that the common ingroup perception as a base for trust development is also activated after a merger success, because the perceptions of the groups could change to a one-group perception in all conditions. This would be an additional base for trust if the merger succeeds.
activated in the cognitive merger representations as one-group and as one-group with subgroup differentiation) should set the stage for outgroup trust in the case of a merger failure.

Trust has critical importance for cooperation and evaluation of members of other groups (Brewer, 2000; Jones & George, 1998; Kramer, 1999; Dirks & Ferrin, 2001; Williams, 2001). It is assumed that trust can trigger two processes (Dirks & Ferrin, 2001). First, it affects how the future behavior of another group will be assessed. Second, trust influences interpretations of the other group’s past behavior. Hence, outgroup trust should be an important pre-cursor of attitudes towards the other group. Therefore, it was hypothesized that trust in the outgroup (as a relational perception) should mediate the effects on ingroup bias.

**Outgroup trust hypothesis:** Outgroup trust mediates the effects of merger representation and performance feedback on ingroup bias.

In sum, Study 2 aimed at replicating the results of Study 1 and testing whether outgroup trust mediates the effects on ingroup bias. In addition, the influence of ingroup projection was again tested. Similarly to Study 1, it was expected that ingroup projection should have again no strong impact on the intergroup relations, because the meaning of the subgroups and the inclusive category was again manipulated in a similar way to Study 1.

### 5.3 Method

**Participants and design**

Seventy undergraduate psychology students (12 male, 58 female; age: \( M = 20.23, \ SD = 3.51 \)) from the University of Kent at Canterbury were recruited individually to take part in an experiment on group decision-making, group creativity and group performance. They received participation-credits. Furthermore, at the end of the study each participant received 2 British Pounds. This was done because money was promised during the tasks of the study, which was never paid to the participants. The money represented a fair compensation for each participant. The design of the
study was a 3 (merger representation: one-group, one-group with subgroup differentiation, two-groups) x 2 (feedback: failure, success) between-subjects design. In all conditions, the subgroups were described as being of equal size and status and the interdependence structure were held constant between the conditions.

Procedure

Upon arrival, participants were guided to separate cubicles. The entire study was conducted on a computer and took about 45 minutes. The participants never had “real” contact with any other participant of the study. However, they were led to believe that they would participate along with 5 other participants in this study. In fact, the study was conducted with 1 to 3 participants per session. Nevertheless, signs were put on six doors on the floor where the study was conducted to let the participants believe that there were really 6 participants altogether.

Afterwards, participants sat down in front of the computer and the computer program gave all further instructions. The subjects were told that each task must be completed within a certain time period, and if the product of the task would meet specific standards, they would receive a financial reward for their work. Furthermore, participants were told to expect to answer some questions concerning the tasks throughout the study and that the computer would track all activities of the participant only for research purposes. Afterwards, the participants were provided with a graphical visualization of an online connection between all computers of the 6 participants.

Subgroup formation. Participants were informed that it would be necessary to divide the group into two equal-sized small ones (Team A and B) for the upcoming tasks. Participants could choose themselves to which of the groups they want to belong. It was explained, however, that in the case of an uneven division into the subgroups, the participants would be randomly assigned to a group. In fact, the groups were divided even in all cases. The groups were also referred to as the blue or the red group to make the group membership in Team A or B visually more salient. Afterwards, the participants were supposedly newly connected to their team members and then provided with a new background screen in the color of their group.

The first task of the group was to create their own group name. This task was introduced to foster the salience of the group membership. One group member was said to be randomly chosen to create a name whereas the other two participants had to give
feedback on this name. In fact, all participants created a name for their group and the feedback of the other (non-existent) participants were every time positive. Subsequently the name of the other team (which was always “Pro-team”) was shown together with the name of their own team. Furthermore, the name of their own team appeared now on top of the screen throughout the following subgroup tasks. Next, the participants had to work in their subgroup on a brainstorming task. It was explained that the participants would work as a marketing team and have to find different slogans for a new toothbrush named “Fresh and Clean”. Although the participants would not see the other group members, the group results would consist of the unique slogans of all group members. They had three minutes of time and their results (in terms of quantity) would afterwards be compared with the results of the other subgroup. The better group would earn a monetary prize of 1 pound\(^{13}\). After three minutes time, the data of all 3 participants were ostensibly transferred to a common subgroup server. Furthermore, it was stated that a second brainstorming task would follow. The participants had to look for as many different slogans for a new beverage called “Fruity Fizz”. Again the groups were informed that they would be competing against each other for the reward of 1 pound available for the task. Furthermore, the groups had again three minutes time and the results would be compared on the basis of their quantity. Again, after three minutes time, the data of the participants were ostensibly transferred to a common server. Next, it was explained that because the solution of both tasks would require some time to analyze, the results would not be made available until the end of the study. In reality, the participants never received feedback on these tasks. After the participants solved the two brainstorming task, they were asked to answer some short questions (before the manipulations).

**Manipulation of merger representation.** Following the completion of the brainstorming tasks, the participants were informed that they now have to merge with the other group to work on some other tasks. Subsequently, the manipulation of the merger representations was implemented. Similar to the Study 1, several graphical and linguistic means were used to alter participants’ conceptual representation of the aggregate as one-group, one-group with subgroup differentiation and two-groups.

\(^{13}\) All monetary rewards reported to the participants were never paid to them. However, after a detailed debriefing, all participants received 2 pounds. (see also footnote 7)
In the **one-group condition**, the subjects were told that they would have to work on subsequent tasks together as one common group. Therefore, the computer connection between the participants was visually reconfigured. To make the changes visually more clear for the participants, the team color changed from red or blue to yellow. Furthermore, the new team name was “TEAM C”. All 6 participants were welcomed in the new working area of Team C (with a yellow background color) and the new team name was displayed on the upper part of the screen throughout the rest of the study. In addition, the instructions on the computer referred to the merged group as the yellow Team C throughout the rest of the study. Finally, after the following tasks, the results of all participants were ostensibly transferred from all six computers to a common server of the yellow Team C.

In the **one-group condition with subgroup differentiation**, the subjects were informed that they would now work on the subsequent tasks together and remain as the red team A/B and the blue team B/A and, at the same time, form a common yellow team C. Thus, the computer connection between the participants was re-configured in the following way: All computers were connected with each other and all computers were connected to the same common server. However, presenting one team on the right side and one team on the left side of the screen still visually segregated the subgroups. Further, to make the changes visually more clear for the participants, the background screen was split into a red and a blue half with a yellow boarder around the two halves. The names of the subgroups were displayed in the corresponding half of the screen and the common team name was displayed on top of both in the area of the yellow border. In addition, the results of the following task were transferred from each computer to the server. At the same time, however, the subgroups were visually recognizable. Finally, the instructions referred to the subgroups within the common team throughout the rest of the study.

Finally, in the **two-groups condition**, the subjects were told that they would have to work on the subsequent tasks together but remain as red team A/B and the blue team B/A. Consequently, the computer connection between the participants was not re-configured. Instead, the computer connection was again presented. However, both teams were connected now to a common server, because the teams had to work cooperatively together. Furthermore, to make clear to the participants that they work together in separate teams, the background of the computer screen was split in a red
and a blue color and it was said that the teams would work in the separate areas of the screen. The names of the two teams were also displayed on the upper part of the screen in the separate areas throughout the rest of the study. In addition, the instructions never referred to a common group, but referred to the separate teams. Finally, after the following tasks, the results of each team were ostensibly transferred to a common server.

**Manipulation of feedback.** Participants randomly received a failure or success feedback of the common group task. The feedback manipulation was exactly the same as in the first study. The tasks the participants had to solve, however, were different ones. The first cooperative task of the merged group was another brainstorming task. This time the task was framed as another marketing task where it was necessary to find as many uses for a new pair of trousers as possible for an advertisement campaign. Again each participant worked alone on the task and it was said that only the unique uses (from all participants) would count in the end. Participants were told that the result of the whole group (two-groups condition: the two subgroups together) would be compared to groups who already had participated in this study. Furthermore, the instructions informed the subjects that they would have only 4 minutes time to come up with uses for a pair of trousers. Again participant groups could earn a monetary award of 3 pounds (in the two-groups condition: 1 ½ pound for each group) if they are better than the average groups solutions so far, and even 6 pounds (in the two groups condition: 3 pounds for each group) if they belong to the best 20 per cent of the groups solutions so far. After 4 minutes had elapsed, the solutions were ostensibly transferred to the common server. Before the participants got access to the results of this task, a question-block (before the feedback) was provided via computer. Afterwards, the participants got access to the results of the last brainstorming task. A bar chart with the average solution, the best 20 percent solution and the common team solution was provided. The subjects were randomly informed that their result was worse than the average (failure condition) or belonged to the best 20 percent (success condition).¹⁴

Subsequently, the merged teams had to work on a further brainstorming task (i.e. associations with a sport car) which was again framed as a marketing campaign task. The participants had again 4 minutes time to solve the task and the groups could

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¹⁴ It was said that the group would receive the money at the end of the study.
again earn a monetary award as described for the first task. Upon completion of the second merger task, the participants got access to the results immediately. All participants got the same feedback that they had received on the first merger task. Thus, each participant was informed that his or her team had either succeeded or failed at both tasks. Afterwards, the last question block (after the feedback) was administered via computer and a short debriefing was provided on the screen. Finally, a more detailed debriefing was given to the participants on a sheet of paper.

Measures

Participants had to answer different items throughout the study. If not otherwise stated, 7-point items were used to measure the different constructs ranging from 1 (totally disagree) to 7 (totally agree).

Before the manipulations. Before the two independent variables were manipulated, identification with the subgroup was measured by including a 3-item scale (e.g., “I identify with the red/blue Team A/B.”; \( \alpha = .89 \)). This measure was intended to see how strong the identification could be increased with the used computer program.

Before the feedback. After the first merger task and before the first feedback a second question block was included. This question block included an ingroup bias measure, which was adapted from the studies of van Leeuwen et al. (2003). It measured attitudes toward the pre-merger ingroup and outgroup on six items for each group (e.g., “My/The other red/blue Team ‘[group name]’ is very social.”; “My/The other blue/red Team B/A ‘[group name]’ is very nice.”). A general index of ingroup bias was constructed by subtracting the outgroup evaluations from the ingroup evaluations on each item and averaging the resulting two bias measures into one scale (\( \alpha = .85 \)). The scale ranged from -6 to +6 and higher values represented stronger ingroup bias. Afterwards, outgroup trust was measured with two items (“Our Team A/B ‘group name’ can absolutely trust the other Team B/A ‘PRO-TEAM’.”; “For the last task our Team A/B ‘group name’ could rely 100 percent on the other Team B/A ‘PRO-TEAM’.”) The items correlated strongly, \( r(68) = .76, p < .01 \) and were averaged into one measure of outgroup trust.

The next questions concerned the cognitive representation of the aggregate during the cooperative task (see Gaertner et al., 1989, 1994). Similarly to the first study, three items of perceived cognitive representation were included. Respondents had to
choose to what extent they felt like one-group, two-groups, or two-groups within one-
group on three separate items (e.g., “During the last task we were one single group
working cooperatively.”). In addition to this, perceived subgroup differentiation was
measured (see van Leeuwen, 2001). This measure consisted of three items (e.g., “To
what extent do you perceive your original Team A/B ‘group name’ to be a separate unit
within the entire team”). The scale had good reliability ($\alpha = .80$) and the items were
averaged. These measures served as manipulation checks.

Finally, a measure to determine ingroup projection was included. Similarly to
Study 1, the measure consisted of two pictorial items to tap the construct of ingroup
prototypicality (see Waldzus et al., 2003). The subjects had to rate how similar the red
group/blue group is for the merged group. The 7-point pictorial scale was representing
the merged group with a big circle and the subgroups with a small circle approaching
each other. An index of ingroup projection was constructed by subtracting the
perceived prototypicality of the ingroup from the perceived prototypicality of the
outgroup as done for the first measure. The scale ranged from -6 to +6 and higher
values represented more ingroup projection.

After the feedback. This question block contained some measures of the
previous measures: ingroup bias ($\alpha = .89$), outgroup trust, $r(68) = .78$, $p < .01$, and
ingroup projection. Additionally, a few more measures were included. First, a one-item
question asking for the overall attitude towards the merged group was included (“My
overall attitude toward the merged group is marked by…”; 1 = strong antipathy, 7 =
strong sympathy). Second, an item asking for perceived performance (“The result of
the last task was…”; 1 = a failure, 7 = a success). Third, one item asking for the
participants’ confidence during the solving of the last task. This item was taken from
the intergroup anxiety scale (Stephan & Stephan, 1985). Finally, some demographic
questions were included asking for gender and age.

5.4 Results

Before the manipulations

Subgroup identification. The identification with the subgroup was on average
significantly above the midpoint of the scale ($M = 4.44$, $SD = 1.40$; $t(69) = 2.65$, $p =
.01$). Furthermore, a 3 (merger representation) x 2 (feedback) between-subjects
ANOVA on the identification measure was conducted. The analyses revealed an unexpected main effect of feedback, $F(1, 64) = 3.98, p < .05, \eta^2_p = .06$. The participants in the success condition revealed a higher identification with their group than the participants in the failure condition ($M = 4.76, SD = 1.48$, and $M = 4.12, SD = 1.26$, respectively). This result was unexpected, because the participants had been randomized to the conditions and up to this measurement point there were no differences between the conditions. Therefore, the subgroup identification measure was used as a covariate in the further analyses to adjust for differences between the participants in the feedback conditions. If the covariate did not significantly adjust the means of the dependent variables, the analysis without the covariate is reported.

**Before the feedback**

*Manipulation check of merger representation.* One experimental manipulation was designed to affect participant’s cognitive representations of the merged group during the interaction. The efficacy of the representation manipulation was tested with a 3 (merger representation) x 3 (measures of cognitive representation) repeated-measures ANOVA, with the former being a between-subjects factor and the latter being a within-subjects factor, was conducted (see Table 5). The ANOVA yielded a reliable interaction, $F(4, 132) = 2.90, p = .02, \eta^2_p = .08$. Participants in the one-group condition perceived the one-group representation as the best fitting representation. In contrast, participants in the one-group with subgroup differentiation condition showed a strong perception as one-group and as two-groups within one-group. Finally, participants in the two-groups condition revealed a stronger perception as two-groups compared to the other two perceptions. Hence, overall the results were in line with the intended manipulation.

Subgroup differentiation was included in this study as a further measure of cognitive representation. It was assumed that subgroup differentiation should be present in the one-group with subgroup differentiation and in the two-groups condition (one-group: $M = 3.18, SD = 1.20$; one-group with subgroup differentiation: $M = 3.82, SD = 1.23$; two-groups: $M = 3.99, SD = 1.42$). To test this, a contrast analysis was conducted comparing the one-group condition against the other two conditions (2, -1, -1). A regression analysis including subgroup identification (i.e. as covariate), the focal contrast, and an orthogonal contrast testing the two-groups condition against the one-group with subgroup differentiation condition (0, 1, -1) was performed. Subgroup
identification was significant adjusting the means, $F(1, 66) = 9.19, p < .01, R^2 = .11$. The focal contrast was also significant, $F(1, 66) = 7.98, p = .02, R^2 = .07$. Finally, the orthogonal contrast was not significant, $F(1, 66) = .99, p = .41, R^2_{change} = .01$. This indicated that the residual variance of the focal contrast could not explain further differences between the conditions (see Abelson & Prentice, 1997). Hence, this analysis yielded also support that the manipulation of merger representation actually created two conditions with subgroup differentiation: the two-groups condition and the one-group with subgroup differentiation condition.

Table 5. Effects of the merger representation on cognitive representations

<table>
<thead>
<tr>
<th>Merger representation</th>
<th>One-group</th>
<th>subgroup differentiation</th>
<th>Two-groups</th>
</tr>
</thead>
<tbody>
<tr>
<td>One-group</td>
<td>4.79</td>
<td>5.21</td>
<td>4.27</td>
</tr>
<tr>
<td>Two-groups in one-group</td>
<td>3.83</td>
<td>4.96</td>
<td>4.59</td>
</tr>
<tr>
<td>Two-groups</td>
<td>3.50</td>
<td>4.21</td>
<td>4.64</td>
</tr>
</tbody>
</table>

Note. Means with different subscripts within a row are reliably ($p < .05$) different than one another according to simple main effects with Bonferroni adjustment.

Ingroup bias and outgroup trust. Separate 3 (merger representation) x 2 (feedback) between-subjects ANCOVAs were conducted on the measures of ingroup bias and outgroup trust with subgroup identification as a covariate. The covariate significantly adjusted effects on ingroup bias, $F(1, 63) = 14.61, p < .01, \eta^2_p = .19$, but not on outgroup trust, $F(1, 63) = .01, p = .98, \eta^2_p < .01$. No main or interaction effects emerged from both analyses. Although not significant, the pattern of means of the outgroup trust measure at this measurement point mirrored the results of the ingroup bias measure of Study 1 (see Table 6). There was less outgroup trust in the two-groups condition compared to the one-group condition and the one-group with subgroup differentiation condition.
Ingroup projection. As predicted by the projection model, the ingroup projection measure was positively correlated with ingroup bias, $r(68) = .51, p < .01$, and negatively with outgroup trust, $r(68) = -.36, p < .01$. A 3 (merger representation) by 2 (feedback) between-subject ANOVA on the ingroup projection measure yielded neither main effects nor an interaction effect. Similar to the first study, the overall mean of projection and its standard deviation were rather small ($M = .21, SD = .76$).

After the feedback

Manipulation checks of feedback. A 3 (merger representation) x 2 (feedback) between-subjects MANCOVA with subgroup identification as a covariate was conducted on the measures overall attitude towards the merged group, perceived performance and confidence. The analysis yielded a multivariate effect of the covariate $F(3, 61) = 3.72, p = .02, \eta_p^2 = .16$ and a multivariate main effect of feedback, $F(3, 61) = 49.36, p < .01, \eta_p^2 = .71$. The univariate effects indicated that the covariate mainly adjusted the cell means for overall attitude, $F(1, 63) = 6.59, p = .01, \eta_p^2 = .10$ and for confidence, $F(1, 63) = 5.45, p = .02, \eta_p^2 = .08$. All univariate effects of feedback were significant: overall attitude, $F(1, 63) = 12.77, p < .01, \eta_p^2 = .17$, perceived performance, $F(1, 63) = 128.13, p < .01, \eta_p^2 = .67$, and confidence, $F(1, 63) = 4.56, p = .04, \eta_p^2 = .07$. Participants in the success condition perceived the merged group as more positive compared to the participants in the failure condition ($M = 5.23, SD = .94$, and $M = 4.20, SD = 1.28$, respectively). Furthermore, the participants in the success condition perceived their result as a success ($M = 6.11, SD = .99$) and were relatively confident ($M = 5.23, SD = 1.33$) whereas participants in the failure condition perceived their results more as a failure ($M = 3.03, SD = 1.12$) and were less confident ($M = 4.34, SD = 1.35$). Hence, the manipulation of success and failure had the expected effect on the participants.

Ingroup bias and outgroup trust. Separate univariate 3 (merger representation) x 2 (feedback) between-subjects ANCOVAs on ingroup bias and outgroup trust with subgroup identification as covariate were conducted. The analysis of ingroup bias yielded only a significant effect of the covariate, $F(1, 63) = 9.44, p < .01, \eta_p^2 = .13$. No other effects emerged. The pattern of means indicated that there were no noteworthy differences between the conditions after adjusting the means. The analysis on outgroup trust yielded also only a significant effect of the covariate, $F(1, 63) = 3.76, p = .06, \eta_p^2$
No other significant effects emerged from the analysis. However, the pattern of means on outgroup trust were in line with the superordinate-group-salience-hypothesis (see Figure 4).

According to the two competing hypotheses, two a-priori contrast analyses were conducted. The first one tested the subgroup-salience-hypothesis, assuming that the two conditions with subgroup salience within the failure condition should lead to stronger ingroup bias compared to a one-group perception within failure condition and all success conditions (-2, -2, 1, 1, 1, 1). The second contrast tested the superordinate-group-salience-hypothesis, predicting that stronger ingroup bias should only be present within the two-groups / failure condition compared to the other five conditions (-5, 1, 1, 1, 1, 1). After testing each a-priori contrast, the significance of between-condition effects not captured by the a priori contrast was tested (see Abelson & Prentice, 1997).

In contrast to Study 1, subgroup identification was included into the analysis to adjust the means of the dependent variables. Both focal contrasts were not significant for the ingroup bias measure. However, there was strong support for the superordinate-group-salience-hypothesis on the outgroup trust measure, $F(1, 63) = 5.79, p = .02, R^2 = .08$.

The analysis of residuals, testing the significance of between-condition effects not
captured by the a-priori contrast, yielded a non-significant result $F(4, 63) = 0.24, p = .92$, and thus did not explain much variance over and above the captured by the focal contrast, $R^2_{\text{change}} = .01$. The focal contrast for the subgroup-salience-hypothesis was not significant on the outgroup trust measure. Hence, the results of the outgroup trust measure replicated the findings of Study 1 (see Figure 4).

*Change of ingroup bias and outgroup trust.* A 3 (merger representation) x 2 (feedback) x 2 (measurement point) repeated-measures ANCOVA with subgroup identification as a covariate was conducted on ingroup bias. The first two factors were between-subjects factors and the last factor was a within-subjects factor. The analysis on ingroup bias yielded only a significant effect of the covariate, $F(1, 63) = 14.90, p < .01, \eta^2_p = .19$. No other significant effects emerged and the pattern of means indicated barely any change.

\[\text{Table 6. Means (standard deviations) of outgroup trust.}\]

<table>
<thead>
<tr>
<th>Merger representations</th>
<th>One-group</th>
<th>One-group with subgroup differentiation</th>
<th>Two-groups</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Pre-feedback</td>
<td>Post-feedback</td>
<td>Pre-feedback</td>
</tr>
<tr>
<td>Success</td>
<td>4.13 (.83)</td>
<td>4.63 (1.13)</td>
<td>3.79 (1.32)</td>
</tr>
<tr>
<td>Failure</td>
<td>4.25 (.89)</td>
<td>4.29 (.72)</td>
<td>4.41 (1.04)</td>
</tr>
<tr>
<td>Total</td>
<td>4.19 (.84)</td>
<td>4.46 (1.94)</td>
<td>4.10 (1.21)</td>
</tr>
</tbody>
</table>

A 3 (merger representation) x 2 (feedback) x 2 (measurement point) repeated-measures ANOVA was conducted on the measure of outgroup trust\(^{15}\). The analysis yielded a significant two-way interaction (measurement point x feedback), $F(1, 64) = 8.15, p < .01, \eta^2_p = .11$. Outgroup trust increased after a success feedback (before: $M = \ldots$)

\(^{15}\) A covariance analysis indicated that the covariate ‘subgroup identification’ had no significant impact on the results. Furthermore, the results did not significantly differ between both analyses. Therefore, the ANOVA is reported here.
3.86, SD = 1.29; after: M = 4.59, SD = 1.09). In contrast, outgroup trust stayed at a similar level after a failure feedback (before: M = 4.24, SD = 1.13; after: M = 4.23, SD = 1.26). Although the three-way interaction did not reach the conventional levels of significance, F(1, 63) = 2.61, p = .08, η² = .08, the pattern of change is similar to the ingroup bias measure of Study 1 (see Table 6). There was an increase of outgroup trust in all success conditions. However, outgroup trust decreased in the two-groups condition and increased in the one-group and one-group with subgroup differentiation conditions after a failure feedback.

Ingroup Projection. The pictorial measure of ingroup projection measure was not correlated with bias, r(68) = -.05, p < .67, and with outgroup trust, r(68) = -.04, p = .74. Furthermore, a 3 (merger representation) x 2 (feedback) ANOVA yielded no significant effects. The overall level of projection was again quite low (M = -.03, SD = .51). Further analyses did not show any impact of projection on the main findings of the studies.

5.5 Discussion

The second study was conducted to fulfill two main goals: (1) A replication of the results of Study 1, and (2) to test whether outgroup trust mediates the effects on ingroup bias. The design of the Study 2 was again a 3 (merger representation) by 2 (feedback) between-subjects design. In contrast to Study 1, an adapted minimal group paradigm was used (see van Leeuwen et al., 2003). In the pursuit of these goals, Study 2 yielded an unexpected confounding of the feedback manipulation. The feedback conditions yielded differences in subgroup identification before any experimental manipulation was undertaken. This unexpected effect cannot be explained, because participants were randomly assigned to the experimental conditions. To control for this unexpected effect, the measure of subgroup identification was used as a covariate throughout the analyses. Despite the confounding, it was possible to manipulate the cognitive representation and the perceived performance of the merger in the adapted minimal group paradigm. The study yielded no effects on the used ingroup bias measures. Therefore, the mediation hypotheses could not be tested. However, the results on the outgroup trust measure yielded again support for the superordinate-group-salience-hypothesis and not for the subgroup-salience-hypothesis. Because this measure
was expected to mediate the effects on ingroup bias, the findings on this measure perfectly fit with the findings on ingroup bias in Study 1. Finally, ingroup projection was again quite low and did not yield a significant impact on the main results.

Similar to Study 1, the manipulation of cognitive merger representation had the expected effects on the participants. Participants in the two-groups conditions yielded again the strongest perception as two-groups and the lowest perception as one-group. Similar to Study 1, a one-group perception was somehow also activated in this condition because of the cooperative encounter. Nevertheless, this one-group representation was much weaker compared to the other two conditions. In contrast, participants within the one-group with subgroup differentiation condition indicated a strong one-group perception and a strong two-groups in one-group perception. Finally, the participants in the one-group condition indicated a strong one-group perception and low perceptions as being two-groups or two groups within one-group. Further support of the intended manipulations was provided by the measure of perceived group differentiation. Subgroup differentiation was perceived in the two-groups and in the one-group with subgroup differentiation condition and less in the one-group condition. Hence, overall these results are in line with the intended manipulation and the results of Study 1.

In contrast to Study 1, there were no significant differences in ingroup bias and outgroup trust between the merger representation conditions before the feedback manipulations. As discussed after Study 1, this might be because there was no real face-to-face contact between the groups in this paradigm. Furthermore, the pattern of means of the outgroup trust measure were similar to the findings in Study 1. Hence, the results in this paradigm seemed to be weaker with regard to the mere manipulation of merger representation. However, the main interest of the research was in how these merger representations interacted with feedback about the merger performance. Therefore, it was not perceived as problematic that strong differences between the merger representation conditions did not emerge at this stage.

Unfortunately, the ingroup bias measure used in this study did not replicate the results of Study 1. Therefore, the hypothesized mediation of outgroup trust on ingroup bias could not be tested. There are two possible reasons of why the used ingroup bias measure did not have the expected effects. First, whereas in Study 1 the ingroup bias measure was more implicitly asking for the evaluation of each participant, the questions
in Study 2 were explicitly asking for the evaluations of the other groups. Hence, social desirability might have influenced this measure. Second, there was no real face-to-face contact between participants in Study 2. The dimensions of the items used to measure ingroup bias were, however, strongly related to face-to-face impressions and rather concrete (e.g., nice, friendly). Therefore, the dimensions might have been too difficult to answer for the participants. In Study 3, different measures of ingroup bias were used to improve this measurement problem. In addition, more abstract dimensions of intergroup evaluations were used in Study 3 to leave the participants more possible room of interpretation.

Nevertheless, the results on outgroup trust were promising and supported the superordinate-group-salience-hypothesis. The pattern of results was similar to the pattern of results of ingroup bias in Study 1. This was the case for the post-feedback results as well as for the change of outgroup trust between before and after the feedback manipulation. Hence, these results gave support to the assumption that outgroup trust is an important mediator of the effects on ingroup bias. Therefore, it was the main aim of Study 3 to show this relationship.

Finally, ingroup projection was again overall quite low. Furthermore, there were again no influences of the experimental manipulations on these measures and additional analyses found also no indication that ingroup projection had a significant impact on the resulting intergroup evaluations. In contrast to Study 1, ingroup projection was correlated with ingroup bias and outgroup trust before the feedback manipulation but not afterwards. This may indicate that ingroup projection might be indeed not a reliable predictor of intergroup evaluations in the context of artificial groups where the superordinate category is completely defined.

In conclusion, the adapted minimal group paradigm used in Study 2 yielded some promising results. More specifically, it was possible to manipulate participants’ merger representation and perceived outcome of the merger. Further, and in line with the findings from Study 1, the results on outgroup trust supported again the superordinate-group-salience-hypothesis. However, the mediation hypothesis could not be tested. Furthermore, the unexpected confounding of subgroup identification with the feedback manipulation made the overall interpretation of the results quite difficult. Therefore, it was the aim of Study 3 to improve this research paradigm and to clarify the still unanswered questions.
6 The role of outgroup trust on future and past evaluations of intergroup cooperation (Study 3)

6.1 Introduction

Study 1 and Study 2 supported the superordinate-group-salience-hypothesis. Only the condition with a two-groups merger representation experiencing failure yielded stronger ingroup bias and less outgroup trust compared to the other conditions. Although Study 2 contained a confounding of subgroup identification and feedback manipulation, most of the results replicated the findings of Study 1. Hence, the adapted minimal group paradigm (Tajfel, 1970; Tajfel et al., 1971; van Leeuwen et al., 2003) proved to be useful in testing the hypotheses put forward in this dissertation project. Nevertheless, Study 2 had some methodological problems (i.e. confounding; ingroup bias). Therefore, the main goal of Study 3 was to re-run this minimal group paradigm with some alterations.

The main improvements in this study concerned the bias measure. Two bias measures were included in this study. The first measure was in an improvement of the ingroup bias measure used in Study 2. I used more abstract dimensions to measure ingroup bias. The second ingroup bias measure tapped the future intentions of the participants to cooperate with members of the other group. More specifically, participants had to choose with whom they want to cooperate in a forthcoming task. The inclusion of the second ingroup bias measure was not only to improve the measurement of ingroup bias. Rather, it was also the aim to test an additional prediction of the mediation hypotheses of outgroup trust. Dirks and Ferrin (2001) defined trust as being predictive of past intergroup evaluations and future intergroup cooperation (see chapter 5.2). Hence, outgroup trust should mediate the effects on future intentions and on past evaluations (as measured by the first ingroup bias measure). In addition, the influence of ingroup projection was again tested. Similar to Study 1 and 2, it was expected that ingroup projection should have again no strong impact on the intergroup relations.

In sum, Study 3 was mainly an improved replication of Study 2. The goal was again to test the competing hypotheses (subgroup-salience-hypothesis vs. superordinate-group-salience-hypothesis), the ingroup projection hypothesis, and the
mediation hypothesis of outgroup trust (see chapter 5.2). The design of the study was the same as for Study 1 and 2 and the procedure followed exactly the procedure of Study 2. Therefore, the procedure of Study 3 is only summarized in this chapter. The interested reader is referred to chapter 5.3 to get the detailed description of the procedure.

6.2 Method

Participants and design

Ninety-nine undergraduate students (14 male, 85 female; age: \( M = 20.97, SD = 3.08 \)) from the Friedrich-Schiller-Universität Jena were recruited individually to take part in an experiment on group decision-making, group creativity and group performance. They received participation-credits and were included in a price-raffle of 30 Euro afterwards. The raffle was again included because participants competed for a monetary reward in the studies, which was actually never paid to them (see Footnote 6 for a discussion of ethical concerns). Following Study 1 and 2, the design of the study was again a 3 (merger representation: one-group, one-group with subgroup differentiation, two-groups) x 2 (feedback: failure, success) between-subjects design. The subgroups were of equal size and status and the interdependence structure were held constant between the conditions. The cell sizes varied\(^{16} \) from 12 to 21.

Procedure

The procedure of this study followed the procedure of Study 2 (for details see chapter 5.3). In short, the participants were welcomed and placed in separate cubicles. There was no contact between the participants. All instructions and tasks were given via computer. The ostensible 6 participants were divided into two three-person subgroups and had to work on different tasks in the competition. These tasks were supposed to make the subgroups become more salient. Furthermore, different graphical means were included to increase the salience of the subgroup categories. Afterwards, the groups were ostensibly merged. At this stage the manipulation of merger

\(^{16}\) The variation in cell-sizes is explained by the unequal assignment to the failure condition (\( n = 61 \)) and to the success (\( n = 38 \)) condition. This was done to get more statistical power within the failure conditions for statistical analyses. However, the separate analyses within the failure condition yielded no additional information. Therefore, it is not reported here.
representation was implemented. Again, different graphical and linguistic means were used to alter the merger representation as one-group, one-group with subgroup differentiation, or two-groups. Subsequently, the merged group had to work on two tasks on which they received a random feedback of success or failure. At the end of the study, the participants were debriefed and dismissed.

Throughout the study three question-blocks were integrated. The first question block was administered after the subgroup stage and before the manipulations (i.e. before the manipulations). Participants had to answer the second one after the manipulation of merger representation and before the feedback (i.e. before the feedback). Finally, the third question block followed after the feedback manipulation (i.e. after the feedback).

There were only two differences in the procedure compared to Study 2. First, the monetary incentives were different, because this study was conducted in Germany. In the subgroup formation tasks, the teams competed for 2 Euros in each task. In the merger tasks, it was announced that the merged team could win 3 Euro (in the two-groups condition: 1.50 Euro for each group) if they are better than the average groups solutions so far, and even 6 Euro (in the two-groups condition: 3 Euro for each group) if they belong to the best 20 per cent of the groups solutions so far. The second difference was that the number of participants per sessions varied from one to three. Again, however, the participants believed that there were 6 participants, because they were seated in different cubicles without seeing the others.

Measures

Before the manipulations. Before the two independent variables were manipulated, identification with the subgroup was measured by including 2 items (“I see myself being a member of the red/blue Team A/B.”; “I would like to continue work with the red/blue Team A/B.”). The items ranged from 1 (= totally disagree) to 7 (= totally agree). The average of these two items, $r(97) = .50, p < .01$, was used in the further analyses. This measure was intended to see how strong group membership could be raised within the used paradigm and to ensure that no confounding of subgroup identification with any of the manipulated variables took place.

Before the feedback. A second question block was included after the first merger task and before the first feedback. All items in this question block used 7-point scales.
This question block included an *ingroup bias* measure, which was adapted from the studies of van Leeuwen and colleagues (2003). It measured attitudes toward the pre-merger ingroup and outgroup on two items for each group (e.g., “How cooperative is your/the other red/blue Team [group name]?”; 1 = *not at all* cooperative, 7 = *very* cooperative). A general index of *ingroup bias* was constructed by subtracting the outgroup evaluations from the ingroup evaluations on each item and averaging the resulting two bias measures into one scale, $r(97) = .40, p < .01$. The scale ranged from -6 to +6. Higher values represented stronger ingroup bias. Furthermore, two items were included assessing *outgroup trust* (“Our Team A/B ‘group name’ can absolutely trust the other Team B/A ‘PRO-TEAM’.”; “For the last task our Team A/B ‘group name’ could rely 100 percent on the other Team B/A ‘PRO-TEAM’.”; 1 = *not at all*; 7 = *very much*). The two items correlated strongly, $r(97) = .71, p < .01$ and were therefore averaged to one measure of *outgroup trust*.

As in Study 1 and 2, three items were included to measure the *cognitive representation* during the work on the cooperative tasks (see Gaertner et al., 1989, 1994). Respondents had to choose to what extent they felt like one-group, two-groups, or two-groups within one-group on three separate items (e.g., “During the last task we were one single group working cooperatively.”; 1 = *totally disagree*, 7 = *totally agree*). These items served again as a manipulation check of the merger representation manipulation. Afterwards, the pictorial measure of *ingroup projection* was included. The participants had to rate how similar the red group/blue group is for the merged group (see Waldzus et al., 2003). The 7-point pictorial scale was representing the merged group with a big circle and the subgroups with a small circle approaching each other. An index of ingroup projection was constructed by subtracting the perceived prototypicality of the ingroup from the perceived prototypicality of the outgroup as done for the first measure. The measure ranged from –6 to +6, with higher values indicating stronger ingroup projection.

*After the feedback.* The post-feedback question block contained some measures of the pre-feedback question block: *ingroup bias*, $r(97) = .60, p < .01$, *outgroup trust*, $r(97) = .85, p < .01$, and *ingroup projection*. Additionally, the following measures were included. First, a one-item question asking for the *overall attitude towards the merged group* was included (“My overall attitude toward the merged group is marked by…”; 1 = *strong antipathy*, 7 = *strong sympathy*). Second, an item asking for perceived
performance (“The result of the last task was…”; 1 = a failure, 7 = a success). Third, a mood measure (i.e. “After the last task I felt…”) consisting of two items was included (adapted from Forgas & Fiedler, 1996). Participants were asked how they felt during the last task (1 = very sad to 7 = glad; 1 = very angry to 7 = happy). The items were collapsed into one measure, $r(97) = .78$, $p < .01$. All three measures served as a manipulation check of feedback. Fourth, an additional measure of bias tapping the future intention was included. Pictures of the five computers of the other participants were presented and participants could choose two players with whom they would like to work in the next task. It was described which participants belonged to which pre-merger group. This future intention bias measure had three values: 0 = two pre-merger outgroup members chosen, 1 = one pre-merger ingroup and one pre-merger outgroup member chosen, 2 = two pre-merger ingroup members chosen. Finally, demographic questions were included asking for gender and age.

6.3 Results

Before the manipulations

Subgroup identification. The identification with the subgroup ($M = 5.85$, $SD = 1.20$) was significantly above the midpoint of the scale, $t(98) = 15.42$, $p < .01$. Hence, the participants revealed a relatively strong identification with their subgroups before they were confronted with the manipulations. In contrast to Study 2, a 3 (merger representation) x 2 (feedback) ANOVA yielded no effects on this measure.

Before the feedback

Manipulation check of merger representation. One experimental manipulation was designed to affect people’s cognitive representations of the merged group during the interaction. The efficacy of the manipulation of merger representation was tested with a 3 (merger representation) x 3 (measures of cognitive representation: one-group, two-groups, two-groups in one-group) repeated-measures ANOVA. The first factor was a between-subjects factor and the last factor a within-subjects factor (see Table 7). The ANOVA yielded a reliable main effect of merger representation, $F(2, 95) = 13.26$, $p < .01$, $\eta_p^2 = .22$, and a significant interaction, $F(4, 190) = 5.80$, $p < .01$, $\eta_p^2 = .11$. The patterns of results were in line with the intended manipulation. Participants in the one-group condition perceived the one-group representation as the best fitting
representation. In contrast, participants in the one-group with subgroup differentiation condition showed a strong perception as one-group and as two-groups within one-group. Finally, participants in the two-groups condition revealed also a stronger perception as two-groups compared to the other two perceptions.

Table 7. Effects of the merger representation on cognitive representations

<table>
<thead>
<tr>
<th>Merger representation</th>
<th>One-group</th>
<th>One-group with subgroup differentiation</th>
<th>Two-groups</th>
</tr>
</thead>
<tbody>
<tr>
<td>Participant’s representations</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean rating (1-7)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>One-group</td>
<td>5.56&lt;sub&gt;a&lt;/sub&gt;</td>
<td>5.52&lt;sub&gt;a&lt;/sub&gt;</td>
<td>5.03&lt;sub&gt;a&lt;/sub&gt;</td>
</tr>
<tr>
<td>Two-groups in one-group</td>
<td>4.03&lt;sub&gt;a&lt;/sub&gt;</td>
<td>5.21&lt;sub&gt;b&lt;/sub&gt;</td>
<td>4.78&lt;sub&gt;ab&lt;/sub&gt;</td>
</tr>
<tr>
<td>Two-groups</td>
<td>3.50&lt;sub&gt;a&lt;/sub&gt;</td>
<td>4.58&lt;sub&gt;b&lt;/sub&gt;</td>
<td>4.81&lt;sub&gt;b&lt;/sub&gt;</td>
</tr>
</tbody>
</table>

Note. Means with different subscripts within a row are reliably (p < .05) different than one another according to simple main effects with Bonferroni adjustment.

Ingroup bias and outgroup trust. A 3 (merger representation) x 2 (feedback) between-subjects MANOVA was conducted on the measures of ingroup bias and outgroup trust. There were neither multivariate nor univariate effects on the dependent variables. Hence, there was no difference in ingroup bias and outgroup trust after the manipulation of merger representation (see Table 8).

Ingroup projection. The measure of ingroup projection was positively correlated with ingroup bias, \( r(97) = .30, p < .01 \), and negatively with outgroup, \( r(97) = -.22, p = .03 \), as predicted by the Ingroup Projection Model. A 3 (merger representation) x 2 (feedback) ANOVA on the measure yielded again no effects. Similar to the first two studies, the overall degree of ingroup projection was rather small (\( M = .08, SD = .40 \)).
After the feedback

**Manipulation check of feedback.** A 3 (merger representation) x 2 (feedback) between-subjects MANOVA was conducted on the measures of perceived performance, overall attitude of the merged group and mood. The analysis yielded only a multivariate main effect of feedback, $F(3, 91) = 57.49, p < .01, \eta_p^2 = .66$. The univariate analyses indicated a univariate effect of feedback on perceived performance, $F(1, 93) = 166.35, p < .01, \eta_p^2 = .64$, on mood, $F(1, 93) = 69.90, p < .01, \eta^2 = .43$, and on overall attitude, $F(1, 93) = 5.25, p = .02, \eta_p^2 = .05$. The participants in the success condition perceived their result as a success ($M = 6.45, SD = .86$) whereas participants in the failure condition perceived their result as a failure ($M = 3.31, SD = 1.32$). Moreover, participants in the success condition revealed more positive mood ($M = 5.59, SD = .97$) compared to the participants in the failure condition ($M = 4.03, SD = .86$). Finally, participants in the success condition perceived the merged group as more positive compared to the participants in the failure condition ($M = 5.75, SD = .97$, and $M = 4.75, SD = 1.02$, respectively). Hence, the feedback manipulation was successful.

**Ingroup bias and outgroup trust.** A 3 (merger representation) x 2 (feedback) between-subjects MANOVA on the measures of outgroup trust, ingroup bias and future intention bias was conducted. The MANOVA yielded a significant main effect of performance $F(3, 91) = 3.51, p = .02, \eta_p^2 = .10$. Univariate analyses indicated that this effect is explained by the univariate effects of feedback on trust $F(1, 93) = 9.17, p < .01, \eta_p^2 = .09$, and on ingroup bias, $F(1, 93) = 4.52, p = .04, \eta_p^2 = .05$. Participants in the success condition revealed more trust ($M = 5.82, SD = 1.12$) and less bias ($M = .17, SD = .56$) than participants in the failure condition (trust: $M = 5.12, SD = 1.18$; ingroup bias: $M = .46, SD = .73$). The multivariate and univariate analyses yielded no further effects.

To test the competing hypotheses, a priori contrast analyses on the outgroup trust measure and the two ingroup bias measures were conducted. The contrast of the superordinate-group-salience-hypothesis tested the two-groups / failure condition against the other 5 conditions (-5, 1, 1, 1, 1, 1). The contrast for the subgroup-salience-hypotheses tested the two conditions with subgroup salience (i.e. two-groups, one-group with subgroup differentiation) within the failure condition against the other four conditions (-2, -2, 1, 1, 1, 1). After testing the focal contrast, the significance of between-condition effects not captured by the a priori contrast was tested (see Abelson
The focal contrast of the *subgroup-salience-hypotheses* was again non-significant on all three dependent measures. However, the contrast of the *superordinate-group-salience-hypothesis* was significant for ingroup bias\(^{17}\), \(F(1, 93) = 9.93, p < .01, R^2 = .10\), for outgroup trust, \(F(1, 93) = 15.86, p < .01, R^2 = .14\), and for future intention bias, \(F(1, 93) = 3.95, p < .05, R^2 = .04\). The analysis of residuals, testing the significance of between-condition effects not captured by the a priori contrast, yielded non-significant results for ingroup bias, \(F(4, 93) = .57, p = .68, R^2_{\text{change}} = .02\), for outgroup trust, \(F(4, 93) = 1.02, p = .40, R^2_{\text{change}} = .04\), and for future intention bias, \(F(4, 93) = .07, p = .99, R^2_{\text{change}} < .01\). Thus, the predicted pattern for *superordinate-group-salience-hypothesis* provided a good fit for all three measures (see Figure 5-7).

\[\text{Figure 5. Ingroup bias as a function of merger representation and feedback}\]

\(^{17}\) The significant contrast on ingroup bias was mainly explained by a devaluation of the outgroup. Separate contrast analyses for ingroup evaluation and outgroup evaluation revealed that both the ingroup and the outgroup were evaluated less positive in the two-groups / failure condition. However, the contrast for the ingroup was much smaller, \(F(1, 93) = 4.63, p = .03, R^2 = .05\), compared to the outgroup contrast, \(F(1, 93) = 12.58, p < .01, R^2 = .12\). The residual variances of both contrasts were non-significant.
Figure 6. Future interaction bias as a function of merger representation and feedback

Figure 7. Outgroup trust as a function of merger representation and feedback
*Change in ingroup bias and outgroup trust.* Because ingroup bias and outgroup trust were measured before and after the feedback manipulation, a 3 (merger representation) x 2 (feedback) x 2 (measurement point) repeated measures MANOVA on the measure ingroup bias and outgroup trust was conducted, with the last factor being a within subject factor. The MANOVA yielded a main effect of measurement point, $F(2, 92) = 6.85, p < .01, \eta^2_p = .13$, and a significant three-way interaction, $F(4, 184) = 2.82, p = .03, \eta^2_p = .06$. A closer look at the univariate effects revealed that the main effect of measurement point is explained by the univariate effect on the bias measure, $F(1, 93) = 8.01, p < .01, \eta^2_p = .08$, and on outgroup trust, $F(1, 93) = 8.57, p < .01, \eta^2_p = .08$. Participants had more trust ($M = 5.39, SD = 1.20$) and less bias ($M = .35, SD = .67$) after the feedback manipulation (trust before feedback: $M = 5.11, SD = 1.23$; ingroup bias before feedback: $M = .57, SD = .84$). More importantly, the significant three-way interaction revealed a similar pattern compared to Study 1. Although the univariate effects were only significant for the outgroup trust measure, $F(2, 93) = 5.04, p < .01, \eta^2_p = .10$, and not for the ingroup bias measure, $F(2, 93) = .90, p = .41, \eta^2_p = .02$, the patterns of both measures were quite similar (see Table 8). In the success condition there was an increase in trust and a decrease in bias. In contrast, a different picture evolved in the failure condition. There was a decrease in outgroup trust in the two groups / failure condition whereas in the other two failure conditions outgroup trust even increased. The effect was similar (although much weaker) with the ingroup bias measure. There was less decrease in ingroup bias in the two-groups / failure condition compared to the other two failure conditions.
Table 8. Means (standard deviations) of ingroup bias and outgroup trust.

<table>
<thead>
<tr>
<th>Merger representation</th>
<th>One-group</th>
<th>One-group with subgroup differentiation</th>
<th>Two-groups</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Pre-feedback</td>
<td>Post-feedback</td>
<td>Pre-feedback</td>
</tr>
<tr>
<td>Feedback</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Success</td>
<td>.15 (.62)</td>
<td>.08 (.53)</td>
<td>.69 (.88)</td>
</tr>
<tr>
<td>Failure</td>
<td>.62 (.70)</td>
<td>.40 (.70)</td>
<td>.53 (.64)</td>
</tr>
<tr>
<td>Total</td>
<td>.44 (.68)</td>
<td>.27 (.65)</td>
<td>.59 (.73)</td>
</tr>
</tbody>
</table>

**Ingroup Bias**

**Success**
- 5.31 (1.20)
- 6.04 (1.03)
- 5.38 (1.42)
- 5.62 (1.19)
- 4.92 (1.34)
- 5.79 (1.17)

**Failure**
- 5.24 (1.16)
- 5.29 (1.01)
- 4.88 (.93)
- 5.52 (1.29)
- 5.02 (1.45)
- 4.52 (1.01)

**Total**
- 5.26 (1.16)
- 5.57 (1.07)
- 5.08 (1.15)
- 5.56 (1.24)
- 4.98 (1.39)
- 5.00 (1.23)

**Outgroup Trust**

**Success**
- 5.31 (1.20)
- 6.04 (1.03)
- 5.38 (1.42)
- 5.62 (1.19)
- 4.92 (1.34)
- 5.79 (1.17)

**Failure**
- 5.24 (1.16)
- 5.29 (1.01)
- 4.88 (.93)
- 5.52 (1.29)
- 5.02 (1.45)
- 4.52 (1.01)

**Total**
- 5.26 (1.16)
- 5.57 (1.07)
- 5.08 (1.15)
- 5.56 (1.24)
- 4.98 (1.39)
- 5.00 (1.23)

**Mediation analyses.** In the next step, it was tested whether the effects on the two bias measures were explained by outgroup trust. Therefore a mediation analysis was conducted using regression analyses (see Baron & Kenny, 1986). The first regression predicted each bias measure from the focal contrast of the superordinate-group-salience-hypothesis. The second analysis predicted the mediator from the focal contrast of the superordinate-group-salience-hypothesis. Finally, the third regression analysis predicted the bias measure from both, the focal contrast of the superordinate-group-salience-hypothesis and the mediator (i.e. outgroup trust). The first two steps were already conducted in the contrast analyses on ingroup bias, future intention bias, and outgroup trust reported above. Hence, step one and two of the analyses yielded significant results. Therefore, in the third step outgroup trust and the focal contrast of the superordinate-group-salience-hypothesis were included in the regression analyses predicting the bias measures (see Figure 8). Outgroup trust was significantly explaining variance on the measure of ingroup bias, \(F(1, 92) = 9.44, p < .01, R^2 = .09\), and reduced
the contrast of the manipulated variables to non-significance, $F(1, 92) = 3.49, p = .07$, $R^2 = .03$. A Sobel test indicated a significant mediation, $z = 2.44, p = .01$. Outgroup trust was also a significant explaining variance on the measure of future interaction bias, $F(1, 92) = 6.48, p = .01, R^2 = .06$. The contrast on the measure of future interaction bias was reduced to non-significance, $F(1, 92) = .84, p = .36, R^2 = .01$, which was again a significant mediation, $z = 2.14, p = .03$. Hence, both analyses revealed that outgroup trust was mediating the effects on both bias measures.

![Diagram](image)

*Figure 8. Mediation analyses using Baron and Kenny (1986) multiple regression analyses. *$p < .05$. **$p < .01$. ***$p < .001$.*

**Ingroup Projection.** Ingroup projection was positively correlated with ingroup bias, $r(97) = .22, p = .03$. Although the correlations did not reach conventional levels of significance, ingroup projection was also positively correlated with future intention bias, $r(97) = .13, p = .21$. The correlation with outgroup trust was, however, nearly zero, $r(97) = -.01, p = .94$. The mean and variance of the measure was again quite low ($M = .04, SD = .58$). Further, additional analyses revealed that ingroup projection did not have any impact on the main findings of the studies. In sum, the results on ingroup projection are similar to the Study 1 and 2.
6.4 Discussion

Study 3 was designed to replicate and extent the results of the Study 1 and 2 using an adapted minimal group paradigm (Tajfel, 1970; Tajfel et al., 1971; van Leeuwen et al., 2003). Overall, Study 3 replicated the results of Study 1 and 2 and extended the findings of these studies. Strong support was again found for of the superordinate-group-salience-hypothesis but not for the subgroup-salience-hypothesis. Failure of a merger led only to ingroup bias in the two-groups condition while subgroup salience was high and superdordinate salience was low. In contrast, a success of the group merger led to less ingroup bias in all conditions. This pattern of results was found on ingroup bias against the pre-merger outgroup related to the past task experience and related to the future intention to cooperate with former pre-merger outgroup members. Furthermore, outgroup trust has been shown to mediate these effects on both ingroup bias measures. Hence, trust, as a relational construct, is an important mediating variable. This finding is in line with the assumptions of Brewer (2000) and the findings in the organizational literature (Dirks & Ferrin, 2001).

In comparison to Study 1 and similar to Study 2, there were no significant differences in ingroup bias and outgroup trust between the merger representation conditions before the feedback manipulation. As already discussed in Study 2, this might be because there was no real face-to-face contact between the groups in this study. Hence, the effects of the cognitive merger representations might have been weakened. This, however, was not perceived as problematic for the study, because the main goal of the current research was to investigate the interactive influence of cognitive merger representation and performance feedback on intergroup evaluations. The consistent findings on ingroup bias and outgroup trust in all three studies support this argument. Moreover, the changes of outgroup trust and ingroup bias was similar to Study 1 and Study 2. Again, success led to lower ingroup bias and more outgroup trust in all conditions. In contrast, failure led only to less ingroup bias and more outgroup trust if a common ingroup was salient.

The weaker effects on the ingroup bias measure might be again explained by the explicit kind of the items used (see chapter 5.5 for a thoroughly explanation). Although the dimensions of the ingroup bias measures were this time more abstract compared to Study 2, the participants still had to be asked explicitly to evaluate the outgroup and the ingroup. This may have elicited social desirability. In contrast, the outgroup trust
measure did yield the expected effects although participants also had to evaluate explicitly the relation between ingroup and outgroup. It might be that this measure is less influenced by thoughts of social desirability than the ingroup bias measure.

The manipulation of the merger representation yielded similar effects on the manipulation check items as in Study 1 and 2. In line with the assumption (see chapter 2.7) and previous research findings (Gaertner et al., 1990; Gonzalez & Brown, 2003) did the cooperative work towards a common goal elicited a one-group perception in all conditions. However, the manipulation of the merger representation affected the cognitive representation of the participants. Participants in the one-group and in the one-group with subgroup differentiation conditions did reveal the strongest perception as one-group. Moreover, participants in the latter condition had the strongest perception as being two-groups within one-group. Finally, participants in the two-groups condition indicated the lowest feelings as one-group and the highest feelings as being two-groups. In sum, the manipulation of merger representation had the expected effects on the participants’ perception.

Finally, ingroup projection was again overall quite low in means and variance. Furthermore, ingroup projection was again not influenced by the experimental manipulations and had again no significant impact on the main findings. Similar to Study 2, ingroup projection was significantly correlated with the measures of ingroup bias and outgroup trust before the manipulations and weaker after the manipulations. In sum, there was again support for the assumption that ingroup projection was not a reliable predictor of intergroup evaluations in the context of artificial group where the superordinate category has been completely defined.

In conclusion, all three studies yielded support for the superordinate-group-salience-hypothesis but not for the subgroup-salience-hypothesis. Outgroup trust has been shown to be a mediator of the effects of merger representation and feedback about the merger performance on ingroup bias. This was the case for ingroup bias related to past experience and future intention to cooperate. Finally, ingroup projection seemed to have not a strong impact on the intergroup evaluations, because artificial groups with barely any content were used and the inclusive category was relatively fixed leaving no room to project. Therefore, it was the aim of the Study 4 to explore the influence of ingroup projection in a context of natural groups. Furthermore, it should be tested whether the laboratory findings do find applicability within a natural context. Hence,
the aim of Study 4 was to test the main predictions in the context of the German re-
unification, which represents the merger of two former separate nations to one common
nation.
7 Influences of cognitive representation, performance and projection on intergroup evaluations in the context of the German Re-unification (Study 4)

7.1 Introduction

The first three studies yielded strong support for the superordinate-group-salience-hypothesis. All of these studies were conducted in the laboratory and used artificial groups. The advantage of doing such kind of research is the fact that it is possible to control for other effects, which are not the main focus of the research. Hence, Studies 1-3 revealed that cognitive merger representations and performance feedback of the merger have an interactive effect on the intergroup evaluations during a group merger. However, does this effect also hold for natural groups? What is the effect of ingroup projection (Mummendey & Wenzel, 1999) during the group merger? I predicted that ingroup projection should be an important intergroup variable in the case of natural groups, which has been shown already (Waldzus et al., 2003; Weber et al., 2002; Wenzel et al., 2003). More precisely, ingroup projection was assumed to mediate the effects of merger representation and perceived performance on intergroup evaluations. Therefore, another study was conducted in a natural group setting testing the two competing hypotheses (subgroup-salience-hypothesis vs. superordinate-group-salience-hypothesis; see chapter 3) and the effects of ingroup projection.

The context of the German re-unification was chosen for this study. The breakdown of the German Democratic Republic in 1989/1990 allowed for a reunification of East- and West-Germany. Although one of the goals of the reunification was that the East- and West-Germans do perceive themselves as belonging to the superordinate category of Germans, there is still a salient distinction between the merging groups at a psychological level (Mummendey et al., 1999). Hence, the context of the reunification provided a natural research field where it was possible to measure different cognitive merger representations and where evaluations about the past performance of the reunification can be given. Therefore, it was also possible to look at the impact of these variables on the intergroup evaluations (i.e. evaluations of East- and West-Germans)
Because this study was conducted with natural groups, some aspects of the intergroup situation need to be explained in more detail. The reunification is not a merger of equals. Rather, it is an assimilation of the East-Germans to West-Germany. East-Germans are consensually perceived as status inferior in this merger (Mummendey et al., 1999). Group status has been shown to be an important moderator of intergroup evaluations and behavior in various studies (Gonzalez, 2001; Ellemers, 1993; Mullen, Brown, & Smith, 1992). Experimental research by Gonzalez (2001) actually indicated that status did interact with cognitive representations on measures of generalized bias (i.e., ingroup bias against outgroup members who where not directly involved in the intergroup contact situation). Therefore, a quasi-experimental factor of participants’ origin was used to analyze whether status had an influence on the interactive effect of cognitive representation and performance perceptions on intergroup evaluations in the current study.

Furthermore, research based on the Ingroup Projection Model has shown that there is perspective divergence between East- and West-Germans regarding the prototypicality of the groups for the superordinate category (Waldzus, Mummendey, Wenzel, & Boettcher, in press). Waldzus et al. showed that both groups agree that West-Germans are more prototypical Germans than East-Germans. However, both groups overrated their relative prototypicality compared to the outgroup’s point of view. Hence, West-Germans perceived themselves as more prototypical for the superordinate category (i.e., Germans) than East-Germans perceived them to be. And East Germans perceived themselves as more prototypical for the superordinate category than West-Germans perceived them to be. This finding should be replicated in this study. In contrast to Studies 1, 2 and 3, I expected also that ingroup projection should play a more central role for the intergroup evaluations. More specifically, it was assumed that ingroup projection should play a mediating role in this study.

7.2 Method

Participants and design

A heterogeneous sample of 195 participants (96 male, 99 female; 86 East-Germans, 109 West-Germans) from Germany took part in this online study via Internet. The samples from East- and West-Germany were similar in age (East Germans age: M
The design of the study was a 2 (performance: success vs. failure of the reunification) x 2 (participant’s origin: East- vs. West- Germans) x 2 (merger representations: two-groups vs. one-group with subgroup differentiation) between subjects design. Performance of the reunification was directly manipulated. Additionally, two quasi-experimental factors were used in this study. First, the participant’s origin (East- vs. West- Germans) was recorded. Second, the merger representation of the participants as being one-group or one-group with subgroup differentiation or two-groups was measured. Because only a few participants ($n = 10$) indicated a one-group perception, I used only the merger representation as two-groups and as one-group with subgroup differentiation in the analyses. Hence, the participants indicating a one-group representation were excluded from all analyses involving the factor merger representation. The cell sizes varied\textsuperscript{18} from 7 to 44.

**Procedure**

The study was advertised as a survey about the German re-unification. The survey was further introduced as taking approximately 15 minutes. Participants were informed that different questions would be asked about East- and West-Germans and Germans overall. The participants could take part in a prize-draw of 50 Euro if they completed the study. The study was advertised on www.w-lab.de (i.e. this site advertises different online-studies). Moreover, approximately 1100 members of a predominantly German e-mailing list were invited to participate in this survey. Subscribers of the e-mailing list had participated in a social psychological online study\textsuperscript{19} 30 months ago and had agreed to receive further invitations to online studies. In the meantime, each subscriber had been invited to only two different online studies. Both prior studies were not related to national perceptions.

The online questionnaire consisted of three parts. First, participants had to answer different questions. Within this part, two forced-choice items were included on

\textsuperscript{18} This variation is explained by the quasi-experimental factors used. All analyses used the harmonic mean. This implies a loss of power and, hence, a more conservative testing.

\textsuperscript{19} This online study had been placed on the website of a German movie on the Stanford Prison Experiment.
which the quasi-experimental factors were based. Second, perceived performance of the reunification was manipulated. It was explained that a public discussion is going on in Germany about whether the goals of the German reunification have been achieved or not. The participants were randomly asked to imagine arguing in a discussion for the success or the failure of the German re-unification. To do so, they had to write two arguments in two text fields on the web page. Finally, the participants had to fill out some manipulation check measures and different dependent measures.

Measures

Before the performance manipulation. First, participants had to indicate where they were born (East- or West-Germany). The quasi-experimental factor ‘participant’s origin’ was based on this forced-choice item. Afterwards, participants had to fill out some demographic questions: Where they currently live (East- or West-Germany), how long they lived there (in case they moved from East to West or the other way around), gender and age. Subsequently, ingroup projection was measured. The measure was adapted from Waldzus et al. (in press). It consisted of a list of 20 attributes, which were, according to pre-tests, balanced with respect to stereotypicality and positive valence. Seven attributes were considered typical and distinct for East-Germans, eight attributes were typical and distinct for West-Germans, and six attributes were equally typical for both groups. The attributes were as follows (translated from German): resolute, up-to-date, autonomous, self-confident, ecologically friendly, cosmopolitan, efficient (stereotypical for West-Germans); honest, humorous, child-friendly, imaginative, romantic, considerate, sociable (stereotypical for East-Germans); bright, committed, hard-working, accurate, self-critical, reliable (stereotypical for neither or both).

The list of attributes was presented three times, whereby the participants were asked to indicate the extent to which the attributes applied respectively to the East-Germans, the West-Germans, and Germans overall (1 = not at all, 7 = very much). Each evaluation was presented on one web page. The sequence of the evaluations was fixed to the following order: Ingroup (α = .90), outgroup (α = .90), Germans overall (α = .93). A measure of relative prototypicality was calculated, defined as the difference between the outgroup’s and the ingroup’s profile dissimilarities to Germans overall. The typicality of each subgroup in terms of the superordinate category was operationalized as profile similarity between the attribute ratings of each subgroup and the superordinate category. The mean Euclidean distance served as an indicator of profile similarity.
(Cronbach & Gleser, 1953). Adapted to the present purposes, the formula is as follows:
\[ d_{sup-sub} = \left[ \frac{\Sigma (x_{sup}^i - x_{sub}^i)^2}{n} \right]^{1/2} \]
with \( d \) = profile dissimilarity, \( sup = \) superordinate category, \( sub = \) subgroup category, \( x_i = \) value for attribute \( i \), \( n = \) number of attributes.
That is, the differences between the ratings of subgroup and superordinate group were squared, summed up and divided by the number of ratings (to obtain an average squared distance), and then transformed back to the original metric by taking the square root. Less dissimilarity between subgroup and superordinate category indicated higher prototypicality of the subgroup in terms of the superordinate category.

A measure of ingroup-projection was created by subtracting the perceived outgroup distance from the perceived ingroup distance regarding the inclusive category. Higher values on this measure indicated more projection of ingroup attributes onto the inclusive category.

On the next page, a measure of cognitive merger representation was presented (see Gaertner et al., 1989, 1994). Respondents were asked to select the one cognitive merger representation that best characterized their impression described in the three items (i.e. one-group, two-groups, or one-group with subgroup differentiation). This forced-choice item was used as the quasi-experimental factor ‘merger representation’.

Afterwards, two three-item scales measuring first identification with Germans overall (i.e. superordinate identification) and afterwards identification with the respective ingroup (i.e. subgroup identification) (“I identify with the …”; “I see myself as…”; “I feel as…”). The scales ranged from 1 (= not at all) to 7 (= very much) and had a good reliability (Germans: \( \alpha = .76 \); Ingroup: \( \alpha = .85 \)). These scales served to validate the quasi-experimental factor ‘merger representation’.

After the performance manipulation. After the manipulation of perceived performance of the reunification another question block was included on separate web pages. The first page consisted of a manipulation check item asking for the perceived success of the re-unification (ranging from 1 = total failure to 7 = total success). Next, a mood measure adapted from Forgas & Fiedler (1996) was included. It consisted of two items (“If I think on the German reunification, I feel rather pleasure than sadness”; “If I think on the German reunification, I am rather happy than angry”) ranging from 1 (= totally disagree) to 7 (= totally agree). The items were collapsed into one measure, \( r(193) = .72, p < .01 \). The final two questions on this page measured outgroup trust on
two items (“We [East-/West-Germans] can absolutely trust the [West-/East-Germans].”; “We [East-/West-Germans] can rely 100-percent on the [West-/East-Germans] for the accomplishment of the re-unification”) ranging from 1 (= totally disagree) to 7 (= totally agree). The items were collapsed into one measure of outgroup trust, \( r(193) = .85, p < .01 \).

The final two pages contained an ingroup bias scale. The participants had to answer six items measuring a general outgroup evaluation (“I think the … are dislikeable.” (-); “I like the …”; I like the way, how … behaved during the re-unification.”; “I like the … mentality.”; “I do not like the way, how … act during the re-unification process” (-); “I do not like to talk about the re-unification with …”) ranging from 1 (= totally disagree) to 7 (= totally agree). The scale was reliable with \( \alpha = .76 \). The same items were used to measure ingroup evaluation (\( \alpha = .75 \)). A general index of ingroup bias was constructed by subtracting the outgroup evaluation from the ingroup evaluation on each item and averaging the resulting six bias measures into one scale (\( \alpha = .79 \)). The scale ranged from -6 to +6 and higher values represented ingroup favoritism.

### 7.3 Results

**Before the performance manipulation**

*Merger representation.* A forced-choice item was included to assign participants to the quasi-experimental condition. When asked to select the representations that best characterized their impression of the aggregate (one-group, one-group with subgroup differentiation, or two-groups), 5.10% of participants chose a one-group representation (\( n = 10 \)), 70.80% selected a one-group with subgroup differentiation representation, and 24.10% chose the two-groups representation. There were no significant differences between East- and West-Germans. As already explained, this forced-choice item was used as a quasi-experimental factor merger representation and the 10 participants who indicated a one-group representation were excluded from the reported analyses, because

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20 Some participants did not completed the whole questionnaire. Preliminary analyses indicated that the results did not change significantly by leaving these participants. I included those participants in all possible analyses to gain more power in testing the hypotheses. Therefore, degrees of freedoms may differ in some analyses.
the cell-sizes were too small to use reliable statistical tests. Hence, merger representation had two levels (one-group with subgroup differentiation vs. two groups).

**Identification.** Separate 2 (merger representation) x 2 (participant’s origin) ANOVAs on the identification measures were conducted. The analyses on superordinate identification indicated only a main effect of merger representation, $F(1, \ 181) = 5.61, \ p < .02, \ \eta^2_p = .03$. There was a stronger superordinate identification in the one-group with subgroup differentiation condition ($M = 5.02, SD = 1.26$) compared to the two-groups condition ($M = 4.48, SD = 1.66$). The analyses on subgroup identification yielded only a main effect of participant’s origin, $F(1, \ 185) = 8.20, \ p < .01, \ \eta^2_p = .04$. The East-Germans identified higher with their subgroup compared to the West-Germans ($M = 5.21, SD = 1.67$ vs. $M = 4.60, SD = 1.64$). Hence, these results gave support for the quasi-experimental factor merger representation.

**Relative prototypicality and projection.** First, I tested the perspective divergence between the East- and West-Germans regarding the Germans in general. I administered the measure of relative prototypicality (i.e. scores of dissimilarity of East- and West-Germans from Germans in general = target group) to a 2 (merger representation) x 2 (participant’s origin) x 2 (target group: East vs. West) repeated-measures ANOVA with the last factor being a within-subjects factor. The analyses yielded a main effect of target group, $F(1, \ 178) = 46.54, \ p < .01, \ \eta^2_p = .21$. Participants from East- and West-Germany agreed that the overall distance from West-Germans to Germans in general is smaller compared to the distance of East-Germans to Germans ($M = 4.87, SD = 2.39$ vs. $M = 6.99, SD = 3.39$). This main effect was qualified by the expected interaction of target group and participant’s origin, $F(1, \ 178) = 45.07, \ p < .01, \ \eta^2_p = .20$. As predicted by the Ingroup Projection Model, there was a clear divergence between East- and West-Germans regarding their prototypicality for the superordinate category (i.e. Germans in general). East Germans perceived themselves as less distant from the inclusive category compared to the view of West-Germans ($M = 6.35, SD = 2.41$ vs. $M = 7.49, SD = 3.93$). In contrast, West-Germans perceived themselves as less distant from the inclusive category than the East-Germans perceived them to be ($M = 3.95, SD = 1.75$ vs. $M = 6.06, SD = 2.58$). However, the three-way interaction was also significant, $F(1, \ 178) = 4.93, \ p = .03, \ \eta^2_p = .03$. As can be seen in Table 9, there was perspective divergence in both conditions of merger representations. The three-way interaction is mainly explained by the fact that in the two-groups condition, East-Germans perceived
themselves as less distant from the inclusive category than West Germans perceived them to be, $F(1, 178) = 7.09, p < .01, \eta^2_p = .04$. In contrast, there was no difference between East- and West-Germans in the perceived distance of East-Germans from the inclusive category in the one-group with subgroup differentiation condition, $F(1, 178) = 1.02, p = .31, \eta^2_p = .01$.

Table 9. Means (standard deviations) of distance measures.

<table>
<thead>
<tr>
<th>Merger representation</th>
<th>Two-groups</th>
<th>One-group with subgroup differentiation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Perceived Distance from the superordinate category</td>
<td>East-Germans</td>
<td>West-Germans</td>
</tr>
<tr>
<td>Distance of East-Germans</td>
<td>6.23 (2.28)</td>
<td>8.89 (5.51)</td>
</tr>
<tr>
<td>Distance of West Germans</td>
<td>6.67 (3.48)</td>
<td>4.47 (1.73)</td>
</tr>
</tbody>
</table>

In a next step, the measure of ingroup projection was subjected to a 2 (merger representation) x 2 (participant’s origin) ANOVA. The analysis yielded main effects of participant’s origin, $F(1, 178) = 46.54, p < .01, \eta^2_p = .21$, and merger representation, $F(1, 178) = 4.93, p = .03, \eta^2_p = .03$. East Germans revealed less ingroup projection compared to West-Germans ($M = -.29, SD = 2.61$ vs. $M = 3.54, SD = 3.83$) and participants in the two-groups condition yielded stronger ingroup projection than participants in the one-group with subgroup differentiation condition ($M = 3.05, SD = 5.59$ vs. $M = 1.48, SD = 2.97$).

After the performance manipulation

Efficacy of the performance manipulation. One experimental manipulation was designed to affect people’s perceived performance of the reunification. Separate t-tests on the manipulation check item and the mood measure were conducted. The analyses on the manipulation check item yielded a significant difference between the performance
conditions, \( t(183) = 2.52, p = .01, \eta_p^2 = .03 \). As expected, participants in the failure condition perceived the re-unification as less successful than participants in the success condition \((M = 4.08, SD = 1.39 \text{ vs. } M = 4.57, SD = 1.25)\). The analysis on the mood measure yielded also a significant difference between the performance conditions, \( t(183) = 2.83, p < .01, \eta_p^2 = .04 \). Participants in the failure condition had less positive mood than participants in the success condition \((M = 4.85, SD = 1.75 \text{ vs. } M = 5.50, SD = 1.36)\). In sum, the performance manipulation had the expected effects on the participants.

**Ingroup Bias.** The measure of ingroup bias was administered to a 2 (performance) \( \times \) 2 (participant’s origin) \( \times \) 2 (merger representation) ANOVA. The analysis yielded a main effect of participant’s origin, \( F(1, 172) = 28.71, p < .01, \eta_p^2 = .14 \). East-Germans had more ingroup bias \((M = .43, SD = 1.36)\) compared to West-Germans \((M = -.83, SD = 1.27)\). Furthermore, a main effect of merger representation emerged, \( F(1, 172) = 3.86, p = .05, \eta_p^2 = .02 \). Participants in the two-groups condition had more ingroup bias \((M = -.01, SD = 1.53)\) than participants in the one-group with subgroup differentiation condition \((M = -.35, SD = 1.42)\). These main effects were, however, qualified by a significant two-way (participant’s origin \( \times \) performance) interaction, \( F(1, 172) = 6.42, p = .01, \eta_p^2 = .04 \), and a significant three-way (participant’s origin \( \times \) performance \( \times \) merger representation) interaction, \( F(1, 172) = 10.25, p < .01, \eta_p^2 = .06 \). As can be seen at Table 10, the patterns of results were different for East- and West-Germans. A test of simple interaction effects within the participant’s origin conditions yielded only a significant two-way (performance \( \times \) merger representation) interaction within the West German sample, \( F(1, 96) = 9.73, p < .01, \eta_p^2 = .09 \), and not within the East-German sample, \( F(1, 76) = 2.54, p = .12, \eta_p^2 = .03 \).

To test the competing hypotheses, a priori contrast analyses on the ingroup bias measure were conducted. Although it was not possible to include the merger representation as one-group into the analyses, it was still possible to test the competing hypotheses. Furthermore, because the above analysis indicated difference of the two-way (performance \( \times \) merger representation) interaction between the participant’s origin conditions, separate a-priori contrast analyses within the West- and East-German samples were conducted. The *superordinate-group-salience-hypothesis* contrast tested the two-groups / failure condition against the other 3 conditions \((-3, 1, 1, 1)\). The
contrast for the *subgroup-salience-hypotheses* tested both failure conditions against both success conditions (-1, -1, 1, 1). After testing the focal contrast, the significance of between-condition effects not captured by the a priori contrast was tested (see Abelson & Prentice, 1997). The focal contrast of the *superordinate-group-salience-hypothesis* was significant within the West-German sample, $F(1, 96) = 8.57, p < .01, R^2 = .08$. In addition, the residual variance of this analysis was non-significant, $F(2, 96) = 1.55, p = .22, R^2_{\text{change}} = .03$ (see Abelson & Prentice, 1997). Again, the focal contrast of the *subgroup-salience-hypothesis* was not significant within the West-German sample.

Table 10. Means (standard deviations) of ingroup bias.

<table>
<thead>
<tr>
<th>Participant’s origin</th>
<th>East-Germans</th>
<th>West-Germans</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Two-groups</td>
<td>One-group with subgroup differentiation</td>
</tr>
<tr>
<td>Performance</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Success</td>
<td>1.38 (1.41)</td>
<td>.37 (1.36)</td>
</tr>
<tr>
<td>Failure</td>
<td>.05 (.98)</td>
<td>.20 (1.31)</td>
</tr>
</tbody>
</table>

In contrast, no support for the *superordinate-group-salience-hypothesis* within the East-German sample was obtained, $F(1, 76) = 1.29, p = .26, R^2 = .02$. The focal contrast of the *subgroup-salience-hypothesis* was significant, $F(1, 76) = 4.29, p = .04, R^2 = .05$. The residual variance of this analysis, however, was marginally significant, $F(2, 76) = 2.48, p = .09, R^2_{\text{change}} = .06$ (see Abelson & Prentice, 1997). Furthermore, the pattern of means showed that the strongest bias was present in the two-group / success condition within the East-German sample.

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21 The significant contrast on ingroup bias within the West-German sample was mainly explained by a devaluation of the outgroup. Separate contrast analyses on ingroup evaluation and on outgroup evaluation revealed that only the focal contrast (*superordinate-group-salience-hypothesis*) on outgroup evaluation was significant, $F(1, 96) = 7.54, p < .01, R^2 = .07$. The residual variance was non-significant, $F(2, 96) = 1.54, p = .22, R^2_{\text{change}} = .03$. 
condition. Hence, the pattern did not support the *subgroup-salience-hypothesis*. On the contrary, there seemed to be more bias within the success conditions compared to the failure conditions.

**Outgroup Trust.** The measure of trust was administered to a 2 (performance) x 2 (participant’s origin) x 2 (merger representation) ANOVA. The analysis yielded a main effect of participant’s origin, *F*(1, 172) = 11.76, *p* < .01, *η_p^2^ = .06. East-Germans had less outgroup trust (M = 3.24, SD = 1.47) compared to West-Germans (M = 4.15, SD = 1.55). Further, a main effect of performance, *F*(1, 172) = 4.05, *p* < .05, *η_p^2^ = .02, and merger representation, *F*(1, 172) = 21.06, *p* < .01, *η_p^2^ = .11, evolved. Participants in the success condition had more outgroup trust (M = 3.87, SD = 1.54) compared to the participants in the failure condition (M = 3.57, SD = 1.62) and participants in the one-group with subgroup differentiation condition had more outgroup trust (M = 4.01, SD = 1.53) compared to the participants in the two-groups condition (M = 2.86, SD = 1.45).

No other significant effects emerged from this analysis. The ANOVA yielded no three-way interaction as the analysis on ingroup bias did. Nevertheless, I tested the expected two-way interaction (performance x merger representation) within the East- and West-German samples separately, because the former analyses indicated that the results differ between East- and West-Germans. The interaction was marginally significant within the West-German sample, *F*(1, 96) = 3.57, *p* = .06, *η_p^2^ = .04, and non-significant in the East-German sample, *F*(1, 76) = .25, *p* = .62, *η_p^2^ < .01. Hence, again there were stronger effects within the West-German sample compared to the East-German sample (see Table 11 for means and standard deviations).

A priori contrast analyses on the outgroup trust measure were conducted to test the competing hypotheses (*superordinate-group-salience-hypothesis* vs. *subgroup-salience-hypothesis*) more precisely. Because of the differences between East- and West Germans on the measures of ingroup bias and outgroup trust, I also conducted separate a priori contrast analyses within the West- and East-German samples for the outgroup trust measure. The same procedure as described for the ingroup bias measure was applied. The focal contrast of the *superordinate-group-salience-hypothesis* was significant within the West-German sample, *F*(1, 100) = 13.31, *p* < .01, *R^2^ = .11. In addition, the residual variance of this analysis was non-significant, *F*(2, 100) = 2.22, *p* = .11, *R^2^_{change} = .04 (see Abelson & Prentice, 1997). Again, the focal contrast of the *subgroup-salience-hypothesis* was not significant within the West-German sample.
The focal contrast of the superordinate-group-salience-hypothesis was marginally significant within the East-German sample, $F(1, 77) = 3.52, p = .06, R^2 = .04$, and the residual variance was non-significant, $F(2, 77) = 1.52, p = .22, R^2_{change} = .04$. The subgroup-salience-hypothesis was non-significant within the East-German sample. Hence, in contrast to the results on ingroup bias, the findings on outgroup trust yielded support for the superordinate-group-salience-hypothesis in both samples. The samples differed only in effect sizes.

**Table 11. Means (standard deviations) of outgroup trust.**

<table>
<thead>
<tr>
<th>Participant’s origin</th>
<th>East-Germans</th>
<th>West-Germans</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Two-groups</td>
<td>One-group with</td>
</tr>
<tr>
<td></td>
<td></td>
<td>subgroup</td>
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<tr>
<td></td>
<td></td>
<td>differentiation</td>
</tr>
<tr>
<td>Performance</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Success</td>
<td>2.68 (.64)</td>
<td>3.53 (1.49)</td>
</tr>
<tr>
<td>Failure</td>
<td>2.14 (.63)</td>
<td>3.38 (1.38)</td>
</tr>
</tbody>
</table>

**Mediation analyses of outgroup trust.** In the next step, I tested the mediation of outgroup trust on ingroup bias. The mediation analysis was conducted only for the West-German sample, because support for the superordinate-group-salience-hypothesis on the measure of ingroup bias was found only in this sample. Neither the superordinate-group-salience-hypothesis nor the subgroup-salience-hypothesis could be supported on the ingroup bias measure within the East-German sample. To test the mediation, a multiple regression analysis was used (see Baron & Kenny, 1986). The first regression predicted ingroup bias by the focal contrast of the superordinate-group-salience-hypothesis. The second analysis predicted outgroup trust (i.e. mediator) by the focal contrast of the superordinate-group-salience-hypothesis. Finally, the third regression analysis predicted ingroup bias by both, the focal contrast of the superordinate-group-salience-hypothesis and outgroup trust. The first two steps of this analysis were already conducted in the above analyses. Hence, step one and two of the
analyses already yielded significant results within the West German sample. Therefore, now step 3 was conducted. This step yielded a marginally significant effect of outgroup trust, $F(1, 95) = 3.66, p = .06, R^2 = .03$, and a reduction of the effect of the focal contrast, $F(1, 95) = 4.35, p = .04, R^2 = .04$. A Sobel-test indicated a marginally significant mediation effect, $z = 1.61, p = .10$. Hence, although the test was not significant at the conventional level, the pattern of results replicated the findings from Study 3.

The influence of projection. The degree of ingroup projection has been found to differ between the participant’s origin conditions. Therefore, I conducted separate analyses for the East- and West- Germans. First, a correlational analysis within the East-German sample yielded nearly zero correlations between ingroup projection and the measures of outgroup trust, $r(77) = .03, p = .77$, and ingroup bias, $r(76) = .05, p = .69$. However, within the West-German sample, there were significant correlations of ingroup projection with outgroup trust, $r(101) = -.33, p < .01$, and ingroup bias, $r(97) = .20, p < .05$. Hence, ingroup projection seemed to have stronger influence on the intergroup evaluations for West-Germans than for East-Germans.

Second, separate 2 (performance) x 2 (merger representation) ANCOVAs with ingroup projection as covariate on the measures of ingroup bias and outgroup trust were conducted within the participant’s origin conditions. These analyses yielded no significant effect of the covariate within the East-Germans sample. Furthermore, the results did not change compared to the findings above. However, for the West-German sample, ingroup projection did significantly adjust the means for the outgroup trust measure, $F(1, 94) = 4.01, p < .05, \eta_p^2 = .04$. This resulted in a non-significant two-way (performance x merger representation) interaction, $F(1, 94) = 1.89, p = .17, \eta_p^2 = .02$. There was, however, no significant influence of the covariate on the ingroup bias measure within the West-German sample.

7.4 Discussion

The aim of Study 4 was to replicate the findings from the first three studies in a natural setting. Regarding the competing hypotheses, no support was found for the subgroup-salience-hypothesis and only partial support for the superordinate-group-salience-hypothesis. More specifically, the effects of the superordinate-group-salience-
hypothesis were only found within the West-German sample. West Germans indicated the strongest ingroup bias and the lowest outgroup trust within the two-groups / failure condition. The other conditions did not differ significantly. Furthermore, outgroup trust was again (although weaker) mediating the effects on ingroup bias within the West-German sample. Hence, these findings are in line with the laboratory findings. In contrast, East-Germans exhibited overall significantly more ingroup bias and less outgroup trust in all conditions compared to West-Germans. Furthermore, East-Germans yielded weak support of the superordinate-group-salience-hypothesis on the measure of outgroup trust and no support on the measure of ingroup bias. There was even an indication that ingroup bias was strongest within the two-groups / success condition. These findings need some explanations.

Because the merger situation of the German re-unification was used, the involved groups differed in status. West-Germans were the high-status group within this merger whereas the East-Germans were the low-status group (Mummendey et al., 1999). That the low-status group (i.e. East-Germans) exhibited more ingroup bias compared to the high-status group (i.e. West-Germans) is consistent with Mullen et al.’s (1992) meta-analysis, which found that low-status groups yield stronger ingroup bias in naturalistic settings. The difference in ingroup bias and outgroup trust is further explained by the status-relevance of the dimensions used to measure ingroup bias (Mullen et al., 1992). In line with the Social Identity Theory (Tajfel & Turner, 1986), high-status groups are predicted to reveal more bias on status-relevant attributes whereas members of low-status groups are predicted to exhibit more ingroup bias on status-irrelevant attributes. The dimensions used to measure ingroup bias were not directly linked to the status differentiation of both groups. Hence, these dimensions can be seen as status-irrelevant. Therefore, the low-status group exhibited overall stronger ingroup bias. This finding is also in line with research on organizational mergers (Terry & Callan, 1998; Terry & O’Brien, 2001).

Hence, it seemed that the overall situation of the East-Germans as status-inferior within the merger created a situation of strong ingroup bias and low levels of outgroup trust independently of the cognitive merger representation and the performance of the merger. There was even an indication that low-status groups have stronger ingroup bias under a success condition (i.e. two-groups / success). This is quite surprising at first view. However, it might be explained by the specific merger situation of the German re-
unification. Two possible reasons could explain this effect. First, because the reunification was mainly an assimilation of East-Germany into West-Germany (Mummendey et al., 1999), East-Germans who had a cognitive merger representation as two-groups may actually have been opposed to the German re-unification. Subsequently, the success of the re-unification may have indicated a failure of their opposition. This, in turn, may have led to a stronger ingroup bias. A second explanation is also grounded in the specificity of the merger situation. The East-Germans were the status-inferior partner in the merger. Because the merger had the character of assimilation to West-Germany, most of the changes and activities were actually concentrated on East-Germany. Hence, a success of the merger would represent that East-Germany has improved economically, politically, socio-structurally and so on. Therefore, the overall success of the merger is actually a success of East-Germany. East-Germans who had a cognitive merger representation as two separate groups might therefore have been especially likely to attribute the success of the merger to their own group and not to the West-Germans.

In sum, the low-status group in this merger (i.e. East-Germans) exhibited overall more ingroup bias and less outgroup trust in all conditions compared to the high-status group (i.e. West-Germans). Moreover, whereas the West-Germans sample yielded support for the superordinate-group-salience-hypothesis, the East-German sample did not yield support for neither of the two competing hypotheses. East-Germans yielded even ingroup bias under success conditions. Hence, for the low-status group success of the merger might not be enough to decrease ingroup bias and improve cooperation. This finding extends the results of the three laboratory studies, which were conducted with status equal groups.

A second aim of Study 4 was to look at the role of ingroup projection in this natural intergroup setting. Overall, there was support for the perspective divergence between East- and West-Germans regarding their perceived relative prototypicality for the superordinate category (i.e. Germans). Although both East- and West-Germans agreed that West Germans are more prototypical Germans, they disagreed about the degree. West-Germans perceived themselves as more prototypical for the inclusive category than East-Germans perceived them to be. And East Germans perceived themselves as more prototypical for the inclusive category than West-Germans perceived them to be. This finding is in line with previous research on the Ingroup
Projection Model (Waldzus et al., in press; Wenzel et al., 2003). In contrast to Study 1-3, ingroup projection was also influenced by the intergroup situation. The degree of ingroup projection differed not only between East- and West-Germans, but also between the cognitive merger representations. Participants who perceived the merger situation as a two-groups situation indicated more ingroup projection compared to participants who experienced the merger as one-group with subgroup differentiation. This difference might be explained by different degrees of perceived complexity of the merger group. In line with the Ingroup Projection Model and research by Waldzus et al. (2003), a complex representation of the superordinate category should reduce the degree of projection, because it allows for different prototypical representations within the superordinate category. A one-group with subgroup differentiation condition might be such a complex representation compared to a two-groups representation. Hence, people who perceive a merger as being one-group and, at the same time, also as being two subgroups, might automatically generalize less ingroup attributes towards the superordinate category (in comparison to generalization of outgroup attributes to the superordinate category), because they perceive also at least two prototypical representations of the inclusive category.

The results yielded also differences in the influence of ingroup projection on the intergroup evaluations for the East- and West-Germans. Whereas ingroup projection did not correlate with ingroup bias and outgroup trust within the East-German sample, ingroup projection was positively correlated with ingroup bias and negatively with outgroup trust within the West-German sample. However, there was only an indication of a mediation effect of ingroup projection on outgroup trust within the West-German sample. Ingroup projection was not mediating the effects on ingroup bias within the West-German sample.

In sum, the results of ingroup projection are mixed. The findings on perspective divergence are in line with earlier research on the Ingroup Projection Model. Furthermore, the correlation between ingroup projection and ingroup bias and outgroup trust within the West German sample further supported a main assumptions of the model. Compared to the laboratory studies, ingroup projection was also influenced by the cognitive merger representations. A two-groups representation seems to elicit more ingroup projection compared to a one-group with subgroup differentiation condition. However, ingroup projection did not yield a strong impact on the effects of cognitive
merger representation and performance on ingroup bias and outgroup trust. In addition, ingroup projection exhibited no real influence on the intergroup evaluations within the East German sample. Further research is needed to clarify the role of ingroup projection (see chapter 8.1.2).
8 United we run, divided we fail? – A summary and discussion of the research findings

8.1 Summary of the presented studies

The starting point of the current research was an intergroup perspective on mergers (see also Giessner 2003; Terry, 2001). A merger represents a combination of two groups into one. Such a situation has strong similarities to research on intergroup contact and especially on the cognitive representations during intergroup contact (see Brewer & Gaertner, 2001, for an overview). Previous research taking such an intergroup perspective on mergers has demonstrated how cognitive representations of the merger impact on the relations between the involved groups (Bachman, 1993; Gaertner et al., 2001; Mottola et al., 1997; van Leeuwen et al., 2003). In addition, these cognitive representations do also resemble realistic patterns of merger combinations (see chapter 2.6). Therefore, such an intergroup perspective has been useful in giving additional explanation of why so many organizational mergers fail to reach their goals (Gaertner et al., 2001). However, the influence of the perceived performance on the intergroup relations itself has been nearly neglected in this line of research. Early research on cooperation between groups indicated that the perceived performance has a strong impact on the intergroup relations between two groups (Worchel et al., 1977; 1978). Therefore, this research project concentrated on the impact of the perceived performance on the intergroup relations. More precisely, the research focused on the effects of cognitive merger representations and performance perceptions of the merger on intergroup evaluations between the merging groups.

The main goal of this thesis was to compare two competing hypotheses regarding the interactive effects of cognitive merger representation and perceived performance of the merger on intergroup evaluations. An additional goal was to look at the process of ingroup projection and its impact on the intergroup evaluations during the group merger. In the following sections I shall summarize the results of the four studies. The summary has been split in two parts to facilitate a more structured organization. The first part summarizes the results regarding the two competing hypotheses and the second part summarizes the results regarding the ingroup projection findings.
8.1.1 Merger representation and performance of the merger

Two competing hypotheses were put forward at the beginning of the research project (see chapter 3). The *subgroup-salience-hypothesis* was based on the assumption that salient subgroups during the merger provide a base for blaming the pre-merger outgroup in case the merger fails. If, however, the merger is a success or there are no salient subgroups, there should be no ingroup bias against the pre-merger outgroup (Worchel et al., 1977, 1978). In contrast, the *superordinate-group-salience-hypothesis* predicted that the salience of the superordinate category would act as a buffer against ingroup bias following merger failure. This would occur independently of subgroup salience. Hence, ingroup bias against the pre-merger outgroup is only expected if subgroup salience is high, salience of the superordinate category is low, and the merger fails. If, however, the superordinate category is salient or the merger is a success, there should be no ingroup bias against the pre-merger outgroup (Dovidio et al., 1998; Gaertner et al., 1993; Gonzalez & Brown, 2003).

Subsequently, both hypotheses made only different predictions for a condition where (1) both the superordinate category and the subgroup categories are salient, and (2) the merger fails. If this is the case, the *subgroup-salience-hypothesis* predicted high levels of ingroup bias against the pre-merger outgroup whereas the *superordinate-group-salience-hypothesis* would not. Four studies were conducted to test these predictions. Overall, the findings supported the *superordinate-group-salience-hypothesis*. Consequently, the perception of being in a common ingroup (i.e. the superordinate category) buffered against a de-evaluation of the pre-merger outgroup following a merger failure even in the case of salient subgroups.

In studies 1, 2 and 3 the following experimental design was used to test the competing hypotheses: merger representation (one-group vs. one-group with subgroup differentiation vs. two-groups) by feedback (success vs. failure). The first factor was manipulated when the groups were merged. The second factor was a manipulation of the performance of the merger. More precisely, in these studies the participants received direct feedback about the performance of the merger. All studies used a between-subjects design.

Study 1 provided the first evidence in favor of the *superordinate-group-salience-hypothesis*. The experimental paradigm used in this study was based on
paradigms constructed by Worchel et al. (1977, 1978) and Gaertner et al. (1989, 1990). Each experimental session consisted of 6 participants who worked interactively on different tasks. First, the 6 participants were randomly divided into two artificial 3-person groups in which they worked on different tasks. Subsequently, the two groups were merged and the merger representation (one-group vs. one-group with subgroup differentiation vs. two-groups) was manipulated by using different linguistic and visible means (i.e. poster, badges and so on). The merged groups had to work cooperatively on two subsequent tasks, on which they randomly received a consistent feedback about the merger performance. Participants had to fill out short questionnaires measuring ingroup bias (i.e. more positive evaluation of the pre-merger ingroup compared to the pre-merger outgroup) before the feedback of the first merger task and after the feedback of the second merger task. Participant groups yielded the strongest ingroup bias if they had a two-groups representation and experienced a failure of the group merger. All other conditions yielded low levels of ingroup bias. Hence, success of the merger decreased ingroup bias and failure of the merger only increased ingroup bias if a superordinate category was not salient (i.e. two-groups condition).

Study 2 aimed to replicate and extend these findings using an adapted minimal group paradigm, where participants had no real face-to-face contact (see Leuween et al., 2003), but had to work on a computer in separate cubicles and thought they were connected to the other participants of the study. The procedure of this study followed the procedure of Study 1. In addition, Study 2 aimed at looking an underlying process of the effects on ingroup bias. It has been hypothesized that outgroup trust is an important pre-condition for less ingroup bias in the context of merging groups. Outgroup trust (i.e. a category-based form of trust) is a relational construct and can be defined as an understanding of the of the relationship towards another group (Dirks & Ferrin, 2001; Kramer, 1999). It has been a central construct in organization psychology (Dirks & Ferrin, 2001) and there are already applications of trust in intergroup negotiation research (Kramer & Carnevale, 2001). Recently trust has also been proposed to have an important role in the interplay of cooperative interdependence and superordinate group salience on intergroup cooperation and evaluation (Brewer, 2000; Williams, 2001). Brewer (2000) argued that any form of cooperative interdependence (e.g. a merger) engenders a need for trust in the other partner. Therefore, it was expected that trust in
the outgroup would mediate the effect on ingroup bias (for a detailed reasoning see chapter 5.2).

The findings of this study, however, yielded some mixed results. The ingroup bias measure did not replicate the findings of Study 1. However, the outgroup trust measure yielded again support for the superordinate-group-salience-hypothesis. Outgroup trust was lowest in the two-groups / failure condition. Because the results on the ingroup bias measure could not be replicated, it was not possible to test for the hypothesized mediation. Furthermore, the manipulation of feedback about the merger performance was confounded with the strength of subgroup identification before the manipulation. Because the hypotheses could not be convincingly supported in this study, it was necessary to conduct a third study to test the competing hypotheses and the assumed mediation again.

Study 3 used the experimental paradigm of Study 2. The main difference was an improvement of the ingroup bias measure and the inclusion of a second bias measure, which tapped the future intention to cooperate with pre-merger outgroup members. This study yielded strong support for the superordinate-group-salience-hypothesis and again no support for the subgroup-salience-hypothesis. Group members exhibited more ingroup bias and less willingness to cooperate with former outgroup members only within the two-groups condition experiencing a failure of the merger. Hence, again only this condition set the stage for more ingroup bias and less willingness to cooperate with pre-merger outgroup members. The same pattern of results was also found on the outgroup trust measure. As in Study 2, group members exhibited less outgroup trust if they experienced failure within a two-groups condition. In addition, I showed that outgroup trust was an important mediator of the effects on ingroup bias (related to past experience) and on future cooperation intentions. As Brewer (2000) pointed out, superordinate group salience sets the stage for outgroup trust. This, in turn, leads to positive intergroup evaluations and cooperation even (or especially) in the case of group failure.

Overall the first three studies yielded compelling support for the superordinate-group-salience-hypothesis and not for the subgroup-salience-hypothesis. The findings were consistent over all three studies. Further, outgroup trust has been shown to be a mediator of the effects on ingroup bias. All three studies were conducted in the laboratory. This had the advantage to control for other variables which where not the
focus of the current thesis. However, an important aspect of research is also its applicability. Therefore, the aim of Study 4 was to look at the interactive effects of cognitive merger representation and perceived performance of the merger on intergroup evaluations in a natural group merger context.

Study 4 was designed to test the competing hypotheses in a natural intergroup setting of a group merger. I chose the German reunification, because it represents a merger of East- and West-Germany to the superordinate category Germans. Further, the merger started about 14 years ago and the subgroups of this merger are still salient (Mummendey et al., 1999). The natural setting involved another context variable that had not been taken into account in Studies 1 to 3. The merging groups differed in status (Mummendey et al., 1999). The West-Germans were the high-status group in this context and the East-Germans were nearly assimilated by the West-German culture. The study was conducted via the Internet. The experimental design had to be adapted toward the given merger context. The final design of Study 4 was a 2 (participant’s origin: West-, East-Germans) by 2 (merger representation: one-group with subgroup differentiation, two-groups) by 2 (performance: failure, success) between-subjects design. The first two factors were quasi-experimental and the last factor was directly manipulated by a priming procedure. The questions regarding the quasi-experimental factors were asked before the performance manipulation. Ingroup bias and outgroup trust were measured after the performance manipulation. The results indicated again no support for the subgroup-salience-hypothesis. Moreover, the status difference had an important impact on the results in this study. There was again strong support for the superordinate-group-salience-hypothesis within the West-German sample. Only participants who had a cognitive merger representation as two-groups and experienced failure indicated stronger ingroup bias and less outgroup trust. Once more there was a mediation of outgroup trust on ingroup bias (although weaker than in Study 3).

In contrast, the East-German sample yielded overall more ingroup bias and less outgroup trust compared to the West-German sample. This was the case in all experimental conditions. This finding can be explained by the fact that the dimensions used to measure ingroup bias and outgroup trust were not related to the status-differentiation dimensions (i.e. status-irrelevant dimensions). In line with the Social Identity Theory (Tajfel & Turner, 1986) and research on mergers (Terry 2001), low-status groups exhibit more ingroup bias on status-irrelevant dimensions. In addition, the
East-German sample yielded only weak support for the superordinate-group-salience-hypothesis on the outgroup trust measure and no support on the ingroup bias measure. There was even an indication that ingroup bias was strongest if East-Germans had a two-groups representation and experienced success.

In sum, it can be concluded that there was again more support for the superordinate-group-salience-hypothesis than for the subgroup-salience-hypothesis. However, the support of the superordinate-group-salience-hypothesis was mainly found within the high-status merger group and weakly within the low-status merger group.

8.1.2 Ingroup projection

A second goal of the current research was to look at the process of ingroup projection (Mummendey & Wenzel, 1999) during the merger process. Ingroup projection is the process of generalization of ingroup attributes onto the superordinate category. Because the attributes of the superordinate category are used to evaluate a relevant outgroup (Turner et al., 1987), a more prototypical perception of the ingroup with regard to the superordinate category should lead to more devaluation of an outgroup. It has been argued that this process should be relevant in a merger process (see chapter 2.9).

In particular, the goal was to look at how ingroup projection might impact on the findings of the effects of cognitive merger representation and performance of the merger on the intergroup relations. A basic prediction of the Ingroup Projection Model (Mummendey & Wenzel, 1999) is that ingroup projection should be correlated with ingroup bias. Although this research goal was more explorative in its nature, some hypotheses were derived. It was predicted that ingroup projection should yield a strong impact on the intergroup evaluations only if the superordinate category does not completely fix the meaning of the subgroups within the inclusive group. This is most often the case with natural groups, because it is hard to create a superordinate category which would be defined in a way leaving no room for ingroup projection. In contrast, artificial groups have no real meaning and a detailed definition of the superordinate category would completely fix the meaning of the subgroups. This would leave not much room for ingroup projection in such contexts. Hence, especially the laboratory studies of the current research used artificial groups with barely any content. In
addition, the superordinate category description of these artificial groups fixed the
category in a way that did not allow for much projection. Therefore, it was hypothesized
that especially in the laboratory studies, levels of ingroup projection might be low and
the impact of ingroup projection might be weak on the intergroup evaluations. In
contrast, if natural groups are involved (Study 4) ingroup projection should be stronger
and mediate the effects of merger representation and merger performance on ingroup
bias.

Study 1 yielded overall low levels (i.e. in means and standard deviations) of
ingroup projection. Furthermore, neither the cognitive merger representation nor the
performance feedback influenced the levels of ingroup projection. Ingroup projection
was not correlated with ingroup bias before the performance feedback manipulation.
However, there was a significant correlation of ingroup projection with ingroup bias
after the manipulation of performance feedback. Hence, the more the groups perceived
their own group to be typical for the merger group, the stronger was ingroup bias
against the pre-merger outgroup. Additional analyses (e.g., change of ingroup
projection, covariance-analyses) did not yield a strong impact of ingroup projection on
the main findings described in the previous chapter.

Study 2 yielded similar results as Study 1. Levels of ingroup projection were
again quite low and not influenced by the experimental conditions. In contrast to Study
1, ingroup projection was positively correlated with ingroup bias and negatively with
outgroup trust before the feedback manipulation and not afterwards. In other words,
more ingroup projection led to more ingroup bias and less outgroup trust before the
feedback manipulation but not afterwards. Again, further analyses yielded no major
impact of the ingroup projection measure on the main findings of Study 2, described in
the previous chapter.

Study 3 nearly replicated the findings of the first two studies. Levels of ingroup
projection were again low and the experimental conditions did again not influence the
levels of ingroup projection. Similar to Study 2, there were stronger correlations of
ingroup projection with ingroup bias (positive) and outgroup trust (negative) before the
feedback manipulation than afterwards. Finally, there was again no indication that
ingroup projection influenced the main findings of the cognitive merger representation
and performance feedback on intergroup evaluations (i.e. ingroup bias measures and
outgroup trust).
In sum, all laboratory studies yielded low levels of ingroup projection, which is consistent with the hypothesis. The experimental manipulations did not influence the levels of projection and ingroup projection did not yield a significant impact on the main findings of cognitive merger representation and performance feedback on intergroup evaluations (presented in chapter 8.1.1). Finally, ingroup projection yielded correlations with ingroup bias and outgroup trust. However, these results seemed to be not strongly reliable, because sometimes the measures were correlated and sometimes not. Hence, in line with the hypothesis, these findings indicate that ingroup projection does not have a strong systematic impact on intergroup evaluations in the case of minimal artificial groups, which have barely any content, and where the superordinate category fixed the meaning and prototypicality of the subgroups.

Study 4 was conducted with natural groups in the context of the German reunification. Hence, it was expected that ingroup projection should have a stronger impact on the intergroup relation in a natural setting. More precisely, it was expected that ingroup projection should have an mediating impact on the findings of cognitive merger representations and merger performance on intergroup evaluations. As explained in the previous chapter, this study had to be adapted to the reality constraints of the merger (see chapter 8.1.1). Especially the status difference of the involved groups was taken into account by including a third factor in the experimental design. Results of this study yielded overall higher levels of ingroup projection (with regard to means and standard deviation). Further, one of the main assumptions of the Ingroup Projection Model could be shown in this study as well – perspective divergence regarding the representation of the superordinate category. Because the involved groups projected their attributes onto the superordinate category, both group differed in their perception of how prototypical the merging groups are for the superordinate category. Although both groups agreed that the high-status group is more prototypical, each group perceived itself to be more prototypical than the other group perceived them to be. This finding is in line with earlier research (Waldzus et al., in press).

Ingroup projection was influenced by the cognitive merger representation in Study 4. There was more ingroup projection within the two-groups representation compared to the one-group with subgroup differentiation condition. This may be explained by the fact that the cognitive merger representations represent different degrees of complexity of the superordinate category (see chapter 7.4 for a reasoning). It
has been shown that a complex representation of the superordinate category reduces ingroup projection (Waldzus et al., 2003), because it allows for different prototypical representations within the superordinate category. A one-group with subgroup differentiation condition might be such a complex representation compared to a two-groups representation.

However, ingroup projection again did not influence significantly the main findings of cognitive merger representation and performance perceptions on ingroup bias and outgroup trust. Furthermore, ingroup projection was correlated with ingroup bias and outgroup trust only within the high-status group condition but not within the low-status group condition. A test for mediation yielded only marginal support on the outgroup trust measure within the high-status group. Hence, the study could not fully support the assumption that ingroup projection has more impact on the intergroup evaluations of the merging groups in a natural setting.

There are at least two explanations for these findings. First, it was only possible to measure ingroup projection before the performance manipulation and not afterwards. Hence, there was no information of possible changes in ingroup projection after the performance manipulation. However, these changes could be responsible for the findings on the intergroup evaluation measures. A second explanation could be that ingroup projection is indeed not influencing the main findings of cognitive merger representation and performance perceptions on intergroup evaluations. Alternatively, ingroup projection could have an independent additional influence on the intergroup evaluations. The results of Study 4 indicated that these effects (i.e. correlations between ingroup projection and intergroup evaluations) were, however, only present within the high-status group and not within the low-status group. In sum, the results of Study 4 indicated that ingroup projection was taking place in this natural merger. However, the influences or impact on the intergroup evaluations after a performance manipulation still need further research to thoroughly understand the role of ingroup projection.

After the summary of the results on the main hypotheses (i.e. the competing hypotheses) and the findings on ingroup projection, some limitations of the current research are outlined. These limitations will set the stage for the suggested implications and recommendations of the current research.
8.2 Limitations of the presented studies

Although the first three studies yielded convincing support for the superordinate-group-salience-hypothesis, Study 4 indicated an important limitation of the research findings. The findings supporting the superordinate-group-salience-hypothesis were found with artificial groups in a laboratory, which had equal status and equal group size. In the natural group setting of the German reunification (i.e. Study 4), however, the involved merging groups differed in status. This fact had important consequences for the intergroup evaluations. Most important, the superordinate-group-salience-hypothesis was only supported within the high-status group. In contrast, there was weak support within the low-status group. Hence, status of the involved groups might be an important moderator of the interactive effects of cognitive merger representation and merger performance on intergroup evaluations. I want to point out that the laboratory findings of the first three studies are important and valid. However, these findings have been found under particular preconditions. Therefore, it is necessary that future laboratory research should manipulate further context variables that are important within a merger context. A status difference of the pre-merger groups is one of these variables, because most group mergers are in reality no merger of equals (Giessner, Viki, Otten, Terry, 2003; Terry, 2001; van Oudenhoven & de Boer, 1995). In sum, it is important to keep in mind that the supporting findings of the superordinate-group-salience-hypothesis are valid under certain preconditions.

A second limitation of the current research is related to the success and failure of the merger. The results of the first three studies and the results within the high-status group in Study 4 yielded strong support for the assumption that the success of a merger leads to less ingroup bias against and more trust toward the pre-merger outgroup. This finding is in line with past research (Sherif et al., 1961; Worchel et al., 1977, 1978). However, I want to clarify that this finding should be interpreted with caution. First, it is still questionable as to what will happen with a successful merger between two groups when they fail later on. In other words, although the groups revealed no ingroup bias after merger success, it is still possible that group members somehow attribute the success to their pre-merger subgroups. This, in turn, could lead to stronger ingroup bias if the merger would fail after an experience of success. Second, the finding within the low-status group in Study 4 yielded some indication that ingroup bias against the pre-merger outgroup is even possible under a success condition. Although this result was
non-significant, it points to the fact that there might be context variables that create ingroup bias even after a successful merger.

A third limitation is also related to the performance perceptions of a merger. In reality, many mergers do not only get feedback about the overall merger performance, but also about the performance of its different subgroups. This is especially the case for organizational mergers. The financial statements at the end of a business year can clearly show where the objective reasons of a failure or success are based on. Hence, there are obvious reality constraints. Nevertheless, there might be cases where the general performance of the merger cannot be objectively attributed to the subgroups. The German reunification is such an example (see Study 4). Moreover, even if the overall performance can be objectively attributed to subgroups, there may still be relative differences in the attribution of this performance.

A final critical point is the question of why different cognitive merger representations should have different effects on the intergroup evaluations after a failure compared to a success of the merger. Although it has been shown that outgroup trust was mediating the effects on ingroup bias, it is still questionable why the outcome effects of the merger elicited different effects on outgroup trust depending on the cognitive merger representation. This question has already been raised by Worcel et al. (1978). They assumed that failure of a merger creates a motivation to look for a possible reason. There was even some evidence for this argument in the research by Worcel et al. (1978). However, the question why such a motivation arises still remains. One possible explanation could be grounded in mood states. It has been shown that mood effects play a central role after a feedback of a joint cooperation (Forgas & Fiedler, 1996). In addition, it has been shown that mood effects during intergroup contact situations are very central for the intergroup evaluations of the involved groups22 (Greenland & Brown, 1999; see also Vivian et al., 1997).

There is an enormous research literature examining the consequences of mood on cognitive processing and it is beyond the scope of this thesis to review all of these different ideas. However, Forgas summarized the literature in his Affect Infusion Model

22 Mood effects in these contexts are mainly measured by the construct of intergroup anxiety (Stephan & Stephan, 1985). However, intergroup anxiety can be seen as a construct which is strongly related to general mood (Greenland & Brown, 1999).
(AIM, Forgas, 1995, 2001). Broadly, the model predicts that depending on different situational and task specific circumstances, mood has different influences on our cognitive processing. Important for the current research is the fact that ideas of the model seem also to influence intergroup perceptions (Forgas & Fiedler, 1996). More specifically, Forgas and Fiedler showed that the manipulation of feedback about an estimation task on which the participants previously took part influenced intergroup discrimination. As predicted by the AIM, if the tasks (or interaction) were of personal relevance for the participants, positive mood led to less intergroup discrimination and negative mood induced a motivated mood-repair strategy which led to more intergroup discrimination. In the merger situation and the studies described above, the performance of the merger had a personal relevance for the involved group members. Hence, positive mood after the merger success could have lowered ingroup bias. In contrast, a failure feedback should have led to a motivation to explain the negative mood. This motivation may have led pre-merger subgroup members to look for a scapegoat to be blamed for the failure as Worchel et al. (1978) suggested. Some of the results of the presented studies support this assumption. In Study 1 and 2 a measure of intergroup anxiety was used as a manipulation check of feedback about the merger performance. This measure can be seen as an indication of mood effects in the interaction (Greenland & Brown, 1999). The results indicated that there was less intergroup anxiety after a success feedback compared to a failure feedback. More direct evidence was found in Study 3 and 4 where mood was measured. Again, a perception of a successful merger elicited more positive mood compared to a perception of a failing merger.\(^{23}\)

### 8.3 Implications and recommendations for group mergers

A group merger represents a combination of two groups with the final goal of becoming one common group. Therefore, this situation also incorporates a cooperative interdependence structure of the two involved groups. Although group mergers are everyday phenomena, the main psychological research focus has been on organizational mergers (Hogan & Overmyer-Day, 1994). However, group mergers are essentially intergroup phenomena (Giessner, 2003; Terry, 2001). Therefore, applying an intergroup approach to understand the psychological dynamics of group mergers is essential.

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\(^{23}\) Unfortunately, it was not possible to test for such possible mediation effects, because the statistical tests yielded not enough power.
perspective on mergers in the organizational field (Terry & O’Brien, 2001; van Knippenberg & van Leeuwen, 2001) or on national merger phenomena (Mummendey et al., 1999; Kessler & Mummendey, 2003) has proved to be fruitful. On the one hand, the current research extends the research on cognitive representations during intergroup contact (Dovidio et al., 1998; Gaertner et al., 1993; Gonzalez & Brown, 2003; Hewstone & Brown, 1986), because the present research has looked at effects of the merger performance on the intergroup evaluations. On the other hand, the presented research verified that such an intergroup perspective can enrich the understanding of the processes during a merger. Cognitive representations of the merger and perceptions of merger performance have important implications for the intergroup relations of the involved groups.

The implications and recommendations have to be considered in relation to the limitations of the current research described in the above chapter. With these caveats in mind it can be concluded that a merger of equal status groups should aim to be successful or to create a strong perception as one-group (i.e. superordinate category salience). A perceived success of the merger results in less bias against the pre-merger outgroup and hence to less conflict between the groups. Also a one-group perception buffers against a devaluation of the pre-merger outgroup. This is even the case if the merger experiences a failure and does not mean that the involved groups have to forsake their former group identities. Therefore, the current research supports the Common Ingroup Identity Model (Gaertner et al., 1993) and the research on common ingroup identification with subgroup differentiation (e.g., Dovidio et al., 1998; Gonzalez & Brown, 2003; Hornsey & Hogg, 1999, 2000) in reducing intergroup tensions through a perception as being in one common group. The findings also confirmed that a representation as two separate groups (without a strong representation as common group) as suggested by the MIDM (Hewstone & Brown, 1986; Vivian et al., 1997) is risky if a cooperative endeavor results in a negative experience (i.e. a failure of the merger).

This fact is important and relevant for organizational mergers, because approximately two-thirds of such kind of mergers do not meet expectations (McCann & Gilkey, 1988) or can be considered as financial failures (Buono & Bowditch, 1989; Cartwright & Cooper, 1992; Marks & Mirvis, 1986). Because the human factor is central for the long-term success of the merger (Cartwright & Cooper, 1992), a
perceived failure of the merger is capable to intensify the tensions between the involved
groups in the merger and to result in a break up. Organizational merger models like a
“preservation” strategy (Marks & Mirvis, 2001) or a “holding model” (Uder &
Kramarsch, 2001) foster a strong perception as being two separate groups in the merger
without creating a strong perception as a common group. These kind of mergers seem to
be especially vulnerable if the merger fails in reaching its goals, because the employees
are likely to blame the employees of the other company for the failure. Therefore, it
should be the aim of the merged organization to use a kind of merger which create a
strong perception as one common group (see chapter 2.1 for a short overview) to buffer
against intergroup tensions within the merger company. However, these kinds of
mergers are much harder to realize (Marks & Mirvis, 2001).

Mergers, however, are not limited to the organizational field. Political mergers,
like the German reunification or the current European unification, are examples of how
countries are combined. They undergo similar transformation albeit under different
labels and some different conditions. However, performance perceptions and cognitive
representations should also play a central role for these kind of mergers. Study 4
confirmed this fact. Other merging scenarios, like an immigration context (e.g., Berry,
1984), implicate also evaluations of the performance. Therefore, the findings are
relevant for all kinds of merger where performance perceptions matter. As long as the
merging groups are of equal-status, a common ingroup perception (independently of
subgroup differentiation) helps to overcome intergroup tensions if the merger is
perceived as a failure.

However, most of the mergers in the organizational context and also in other
contexts are not merger of equals (Giessner et al., 2003; Mummendey et al., 1999;
Terry, 2001; van Oudenhoven & de Boer, 1995). A status difference between the
merging partners seems to moderate the interactive effects of cognitive merger
representation and merger performance on intergroup evaluations. Most importantly is
the fact that a successful merger does not necessarily reduce a devaluation of the pre-
merger outgroup in the case of unequal status groups. Especially the low-status group
might reveal ingroup bias against the pre-merger outgroup after a successful merger.
The low-status group reveals overall stronger ingroup bias compared to the high-status
group independently of merger representation and merger performance. This is in line
with former research on organizational mergers (Terry & Callan, 1998). Furthermore,
the merger representation and the performance of the merger have a much stronger
effect on ingroup bias within the high-status group. Ingroup bias will be again reduced
if the merger is successful or a one-group perception (with subgroup salience) is salient.
Therefore, a strong common ingroup perception can be again regarded as superior
compared to a perception as two separate groups. In addition, a common ingroup (with
subgroup salience) perception seems also preferable over a perception as being two
separate for the low-status group, because the former perception at least not heighten
ingroup bias compared to latter perception in the case of a merger success. Hence, a
strong one-group perception should be also fostered during a merger with unequal status
groups. However, interventions should especially care about the fact that low-status
group might have overall higher levels of ingroup bias.

At an applied level, the results on mergers with unequal status groups have
important implications for human resource managers involved in organizational mergers
and in other kind of merger (e.g. political mergers). Such people need to be aware of the
status differential that often exists between merging groups. Especially members of the
low-status group show heightened intergroup tensions and even a successful merge is
not a guarantee for reduced tensions. Again a “preservation strategy” (Marks & Mirvis,
2001) or a “holding model” (Uder & Kramarsch, 2001) might be more vulnerable for
intergroup tensions after a merger failure or success compared to these kinds of mergers
which foster a common ingroup perception (see chapter 2.1). Nevertheless, a merger of
unequal status groups implicates greater challenges for management than a merger of
equal status groups.

8.4 Conclusion

In conclusion, a merger can be analyzed from an intergroup perspective (Terry,
2001). The current research addressed the influence of two factors on the intergroup
evaluations of the groups involved in a merger: (1) the cognitive representation of the
merger, and (2) the performance of the merger. If the merger is in a stage were a
common ingroup is highly salient, a failure or success of the merger does not lead to
tensions between the merging groups. This effect seems to be independent of the
presence of subgroup salience giving the common ingroup is highly salient. Trust in the
other group, as a relational construct, is an important mediator of the interactive effects
of cognitive merger representation and merger performance on ingroup bias. A common ingroup perception during a merger leads group members to trust former outgroup members (Brewer, 2000). This, in turn fosters less ingroup bias. However, the status of the involved groups does also affect the interactive effect of cognitive merger representation and merger performance perceptions on intergroup evaluations. Whereas high-status group shows strong ingroup bias against the former pre-merger group, only if the merger is represented with a strong subgroup salience in combination with a weak salience of the superordinate category after a merger failure, the low-status group generally shows stronger ingroup bias.

United we run, divided we fail? The answer is no. A failure of a merger does not necessarily imply more intergroup tensions and a division of the merger parties. Furthermore, a success of the merger seems also not to be a guarantee for a merger without tensions, as the results of the Study 4 indicated. The current research was a starting point in looking at the influences of merger performance and cognitive merger representations on the intergroup relations during a merger. The next step of this research should test how other context variables, like status of the involved groups, influence the findings under more controlled experimental conditions.
References


SUMMARY

This thesis tested the interactive influence of cognitive merger representation (one-group, one-group with subgroup differentiation, two-groups) and performance of the merger (failure, success) on intergroup evaluations (i.e. ingroup bias). The starting point for the current research was an intergroup perspective on group mergers (Gaertner et al. 2001; Terry, 2001; van Knippenberg & van Leeuwen, 2001). Consequently, a group merger was defined as the combination or amalgamation of a group with another into one group. Two competing hypotheses were put forward and tested against each other in a series of 4 experiments.

Based on two theories of the intergroup relations, the Contact Hypothesis (Allport, 1954; Pettigrew & Tropp, 2002) and the Social Identity Theory (Tajfel & Turner, 1986), different models of cognitive representations during an intergroup contact situation between two groups were put forward in the intergroup research (e.g., Gaertner et al., 1993; Gonzalez & Brown, 2003; Hewstone & Brown, 1986). These models have been applied to group mergers (Bachman, 1993; Kessler & Mummendey, 2001; Terry & O’Brien, 2001). However, research on these models nearly neglected the influence of merger performance on the intergroup relations. Early intergroup research by Worchel et al. (1977, 1978) indicated that performance perceptions of common endeavors can have important consequences on the intergroup evaluations of the merging groups. Based on this research, the subgroup-salience-hypothesis predicted that salient subgroups during the merger (i.e. one-group with subgroup differentiation, two-groups) provide a base for more ingroup bias against the pre-merger outgroup in case of a merger failure. If, however, the merger is a success and/or there are no salient subgroups (i.e. one-group), no ingroup bias against the pre-merger outgroup should arise (Worchel et al., 1977, 1978). In contrast, the superordinate-group-salience-hypothesis predicted that the salience of the superordinate category (i.e. one-group, one-group with subgroup differentiation) is a buffer against ingroup bias after a merger failure independently of subgroup salience. Hence, ingroup bias against the pre-merger outgroup is only expected if subgroup salience is high, salience of the superordinate category is low (i.e. two-groups), and the merger fails. If, however, the superordinate category is salient and/or the merger is a success, no ingroup bias against the pre-merger outgroup should arise (Dovidio et al., 1998; Gaertner et al., 1993; Gonzalez & Brown, 2003).
A series of 4 studies was conducted to test these hypotheses. The first three studies were conducted in the laboratory with artificial groups and applied a 3 (merger representation: one-group, one-group with subgroup differentiation, two-groups) by 2 (merger performance: failure, success) between-subjects design. The main dependent variable was ingroup bias (against the pre-merger outgroup). Study 1 tested the competing hypotheses with interacting groups (N=42) and found support for the superordinate-group-salience-hypothesis. Study 2 was conducted with an adapted minimal group paradigm (see van Leuween et al., 2003) and aimed at replicating and extending the results of the first study (N=70). More specifically, outgroup trust was hypothesized to be a mediating process on ingroup bias in this study. However, the study yielded some methodological problems and could only partly replicate the results of the first study. Also, it was not possible to test the hypothesized mediation. Therefore, Study 3 was conducted (N=99). It was an improved version of Study 2. Additionally, another measures of ingroup bias was included, which taped the future intention to cooperate with members of the pre-merger outgroup. The findings clearly supported the superordinate-group-salience-hypothesis. Further, the expected mediation of outgroup trust on ingroup bias could be confirmed. The mediation was present on both measures of ingroup bias. In sum, the results of the first three studies yielded a consistent support for the superordinate-group-salience-hypothesis and not for the subgroup-salience-hypothesis. Outgroup trust has been found to be an important mediator of these effects.

Study 4 aimed at replicating the findings in the natural merger context of the German reunification. The design of the study was a 2 (participants’ origin: East-, West-Germans) by 2 (merger representation: one-group, one-group with subgroup differentiation) by 2 (performance: success, failure). The first two factors were quasi-experimental and the last factor was manipulated. The study was conducted on the Internet (N=195). The study yielded support for the superordinate-group-salience-hypothesis within the West-German sample. Further, there was again an indication that outgroup trust was mediating the effects on ingroup bias. In contrast, the East-German sample yielded overall more ingroup bias and less outgroup trust compared to the West-Germans. Furthermore, the East-German sample indicated only weak support for the superordinate-group-salience-hypothesis on the outgroup trust measure and no support on the ingroup bias measure. There was even an indication that ingroup bias was
strongest in the two-groups / failure condition. Hence, these results indicated that there might be important moderators of the effects found in the laboratory studies. One of these moderators might be status of the involved groups, because East- and West-Germans differed in status (Mummendey et al., 1999). Future research should aim at exploring these moderating factors in more detail.

An additional goal of the thesis was to explore the role of ingroup projection (Mummendey & Wenzel, 1999) during the group merger. It was predicted that ingroup projection should be low and have less impact on intergroup evaluations if the meaning of these groups is restricted and completely defined by the superordinate category. In this vein, the prototypicality of the subgroups with regard to the superordinate category is fixed. This was the case in the three laboratory studies using minimal groups without meaning and an inclusive category that completely defined the meaning and content. In contrast, if natural groups were involved (Study 4), projection should influence the intergroup evaluations, because in such contexts a superordinate category cannot completely define the prototypicality of the subgroups. The first three studies indicated that ingroup projection was quite low when artificial groups were used. Furthermore, the effects of ingroup projection on intergroup evaluations were not reliably strong and did not influence the main findings discussed above. Hence, this supported the hypothesis. Study 4 (i.e. with natural groups) yielded overall stronger levels of ingroup projection. However, the effects of ingroup projection on intergroup evaluations were mixed. There was weak support that ingroup projection mediated effects of cognitive representation and performance feedback on the intergroup evaluations within the West-German sample. Moreover, ingroup projection was not influencing the intergroup evaluations within the East-German sample. Therefore, future research needs to address this influence more systematically.

In conclusion, the research project showed that an intergroup perspective on group merger is fruitful in understanding processes during a merger (Terry, 2001). Cognitive merger representations and the performance of the merger have important consequences for the intergroup evaluations of the merging groups. Failure of a merger does not necessarily lead to intergroup tensions. Moreover, success is not sufficient in reducing intergroup tensions. However, the most important implication of this research is that a strong perception as one common group (independently of subgroup salience) buffers against intergroup tensions even in the case of a merger failure.
ZUSAMMENFASSUNG

In dieser Arbeit wurde untersucht, welchen Einfluss kognitive Repräsentationen einer fusionierten Gruppe (eine gemeinsame Gruppe vs. eine gemeinsame Gruppe mit Subgruppendifferenzierung vs. zwei Gruppen) und die Leistung der Fusion (Erfolg vs. Misserfolg) auf die Intergruppenbewertungen (d.h. Bewertung der Eigengruppe im Vergleich zur Fremdgruppe) hat. Ausgangspunkt der Forschung war dabei eine Intergruppenperspektive auf Gruppenfusionen (Gaertner et al., 2001; Terry, 2001; van Knippenberg & van Leeuwen, 2001). Dementsprechend wurde eine Gruppenfusion als eine Kombination bzw. Vereinigung einer Gruppe mit einer anderen Gruppe zu einer einzigen Gruppe definiert.


übergeordneten Gruppe an, dass die Salienz der übergeordneten Gruppenkategorie (Bedingungen: eine gemeinsame Gruppe, eine gemeinsame Gruppe mit Subgruppendifferenzierung) zu weniger Eigengruppenfavorisierung bei den fusionierten Gruppen im Falle eines wahrgenommenen Misserfolges der Fusion führt. Dies sollte unabhängig von der Subgruppensalienz sein. Dementsprechend wird eine Eigengruppenfavorisierung nur dann vorhergesagt wenn die Subgruppensalienz hoch ist und die Salienz der übergeordneten Kategorie gering ist (Bedingung: zwei Gruppen) und die Fusion als Misserfolg wahrgenommen wird. Wenn jedoch die übergeordnete Gruppe salient ist und/oder die Fusion als Erfolg wahrgenommen wird, dann sollte eine geringe Eigengruppenfavorisierung auftreten (Dovidio et al., 1998; Gaertner et al., 1993; Gonzalez & Brown, 2003). Die beiden Hypothesen haben dementsprechend genau dann unterschiedliche Vorhersagen, wenn eine kognitive Repräsentation mit hoher Subgruppensalienz und hoher Salienz der übergeordneten Kategorie aktiviert ist (Bedingungen: eine gemeinsame Gruppe mit Subgruppendifferenzierung) und zudem ein Misserfolg der Fusion wahrgenommen wird.

Eigengruppenfavorisierung mediiert. Insgesamt zeigten die ersten drei Studien eine relativ konsistente Unterstützung für die *Salienz-Hypothese der übergeordneten Gruppe* und nicht für die *Subgruppen-Salienz-Hypothese*. Das Vertrauen in die andere Gruppe spielte dabei eine medierende Rolle.


Ein zweites Ziel dieser Doktorarbeit war die Rolle von Eigengruppenprojektion (Mummendey & Wenzel, 1999) während der Fusion zu bestimmen. Eigengruppenprojektion ist die Generalisierung von Attributen der Subgruppe auf die gemeinsame übergeordnete Gruppe (d.h. fusionierte Gruppe). Es wurde die Hypothese aufgestellt, dass Eigengruppenprojektion gering sein sollte und wenig Einfluss auf die Intergruppenbewertung haben sollte, wenn die übergeordnete Gruppe die Bedeutung der Subgruppen zur übergeordneten Gruppe genau definiert. Mit andere Worten, die übergeordnete Gruppe fixiert die Prototypikalität der Subgruppen für die übergeordnete Gruppe. Dies war der Fall bei den Laborstudien, in welchen künstliche Gruppe involviert waren (Studien 1 bis 3). Dagegen sollte Eigengruppenprojektion stärker sein...

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EHRENWÖRTLICHE ERKLÄRUNG

Ich erkläre hiermit, dass mir die Promotionsordnung der Fakultät für Sozial- und Verhaltenswissenschaften bekannt ist.


1. Katrin Wodzicki half unentgeltlich bei der Durchführung von Studie 1 mit.

2. Raff Calitri von der University of Kent at Canterbury (jetzt University of Sussex at Brighton) übernahm die Durchführung von Studie 2 (unentgeltlich).

3. Susanne Täuber erstellte für Studie 4 die Internet-Webseiten (unentgeltlich).


Die Arbeit wurde weder im In- noch im Ausland in gleicher oder ähnlicher Form einer anderen Prüfungsbehörde vorgelegt. Weder früher noch gegenwärtig habe ich an einer anderen Hochschule eine Dissertation eingereicht.

Ich versichere, dass ich nach besten Wissen die reine Wahrheit gesagt und nichts verschwiegen habe

Ort, Datum

Unterschrift