

# **Managing One's Group Image – Dynamics of Group-Based Self-Esteem and Identity Management Strategies**

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## 1. Introduction

People like to see themselves and the groups they belong to positive. They compare themselves and their groups with relevant others with the goal to see themselves as relatively better than the others. Moreover, as stated in social identity theory (Tajfel & Turner, 1979), whenever the comparison leads to a negative outcome they use identity management strategies to manage their self or group view. But what happens if they cannot restore their positive self or group view?

Take for example the still existing differences between East Germany and West Germany. People living in East Germany might be quite pleased with their situation. However, every now and then the media make the comparison between East and West Germany salient, for example by stating that the salary in West Germany is still nearly 20% higher than in East Germany (Görzig, Gornig, & Werwatz, 2004). The comparison between East and West Germans leads to a negative comparison outcome on an economic dimension for East Germans. East Germans should be especially affected by this negative comparison outcome if they identify with East Germany and perceive being East German as very positive, meaning they have a high group-based self-esteem. Whenever group members perceive their ingroup as less positive than relevant outgroups they are motivated to restore their group-based self-esteem by using identity management strategies. East Germans, for example, might challenge the situation by demanding an adjustment of salaries, trying to show that they are as competent as the West Germans. This would change the negative comparison outcome for the whole group. Or they might try to avoid being seen as East Germans and try to become West Germans. This would not change the negative comparison outcome for the group of East Germans; however, it would change the individual comparison outcome. Or they might claim that even though they earn less money, they are the warmer and friendlier people, restoring their group value on a new comparison dimension. All these reactions have in common that they are supposed to undo the negative comparison outcome and to restore the East German's positive ingroup view. These strategies aim to either change the comparison outcome for the individual or for the whole group. But what would happen if the East Germans were preoccupied with other thoughts at the moment when hearing about the higher salaries of the West Germans? Would the preoccupation with other thoughts lead to less cognitive resources that would hinder the use of identity management strategies? Would they get angry about the situation

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or would they adjust their view of their group to the negative comparison outcome, and hence lower their group-based self-esteem?

These are the questions I want to investigate in the following thesis. I will examine the effect of threatening information for group members high and low in group-based self-esteem on the use of two identity management strategies: individual mobility and social competition. Moreover, I will explore what happens if group-based self-esteem cannot be restored. Theoretically, I will first present the basic assumptions of social identity theory (Tajfel & Turner, 1979). Afterwards, I am going to discuss the underlying dynamics of social identity in form of the ‘self-esteem hypothesis’ introduced by Abrams and Hogg (1988), and I am further going to sum up the results of studies testing this hypothesis (e.g., Houston & Andreopoulou, 2003; Rubin & Hewstone, 1998). Based on the empirical findings of the studies investigating the self-esteem hypothesis I will argue that the dynamic, self-regulatory process of group-based self-esteem has not been focused enough up to now. For this reason I will develop a new approach within which group-based self-esteem is seen as a control device monitoring outcomes of intergroup comparisons. Following this theoretical argument I will derive two research lines. The first research line deals with the relation between group-based self-esteem and threat on identity management strategies. Three studies will be presented investigating this relation. The second research line deals with the question what happens if no identity management strategy can be successfully deployed. Four studies investigating this question will be presented. The work ends with an integration of the empirical results within the presented theoretical framework.

## 2. Social Identity Theory

Realistic conflict theory (Sherif, 1966) postulates that negative interdependence between groups is the fundamental reason for intergroup conflict. Even though the study by Sherif (1966), on which the theory was based, was an innovative and impressive study, it was criticized because it did not have a control group without negative interdependence between the groups. Thereby the results could not be interpreted clearly. To overcome this limitation Tajfel and colleagues (Tajfel, Billig, Bundy, & Flament, 1971) conducted a study using a 'minimal group paradigm'. In this experimental situation artificial groups were built based on random criteria and it was assumed that all variables that affected intergroup conflict except group membership were eliminated. The results of the study showed that participants favored their ingroup compared to an outgroup, even if the individual did not profit from this favoritism (e.g., Brewer, 1979; Messick & Mackie, 1989). Based on these results Tajfel and Turner (1979) developed social identity theory as a theory centered on the basic human motivation for positive personal and social identity.

### 2.1 The Four Components of Social Identity Theory

In the following section I give an overview of the central aspects of social identity theory, combined with empirical evidence supporting the assumptions. According to social identity theory (Tajfel & Turner, 1979) three cognitive processes and one motivational process are at work in intergroup situations. These processes are social categorization, social identification, social comparison, and positive distinctiveness. I will discuss each of them in the following.

#### 2.1.1 *Social Categorization*

The fundamental role of social categorization in social identity theory derived from Tajfel's early work on categorization, social perception and intergroup behavior. Tajfel worked on the so called accentuation principle. He found that the mere categorization of a stimulus produces a perceptual accentuation effect. This means that intra-categorical



similarities among stimuli and inter-categorical differences between stimuli are accentuated on dimensions believed to be correlated with the categorization (e.g., Tajfel, 1957, 1959). Tajfel and Wilkes (1962) showed in an influential experiment that participants exaggerated perceived differences of line length, if the stimuli belonged to systematically different labeled groups (longer lines versus shorter lines). This study played an important role in further research on the cognitive approach of stereotyping and on the elaboration of social identity theory (Hogg & Abrams, 1988; Tajfel, 1969, 1978). Similar effects of categorization were found in different research areas, including attitude statements (Eiser, 1971; Eiser & Strobe, 1972; Eiser & Van der Pligt, 1984; McGarty & Penny, 1988), trait valence (Krueger & Rothbart, 1990), daily temperature (Krueger & Clement, 1994), body weights (Krueger, Rothbart, & Sriram, 1989), colors (Goldstone, 1995), and emerged even in judgments of category exemplars that varied along multiple dimensions (Corneille & Judd, 1999; Ford & Stangor, 1992; Goldstone, 1994, 1996; Livingstone, Andrews, & Harnard, 1998). Even though the effect was found in several different areas, it seemed difficult to replicate the original effect of the study by Tajfel and Wilkes. However, Corneille and colleagues (Corneille, Klein, Lambert, & Judd, 2002) did replicate the original effect and showed that the categorical accentuation was higher if the lines were systematically categorized than if they were not, and that this effect was stronger if participants reported their estimates with unfamiliar measures (Belgian participants using inches, American participants using centimeters).

However, not only the physical reality is structured by categories but also the social world. The social identity perspective argues that social categories are cognitively represented as prototypes (e.g., Hogg, 2001; Turner, Hogg, Oakes, Reicher, & Wetherell, 1987). Prototypes are understood as sets of attributes that capture similarities among members of one group and differentiate that group from relevant other groups (e.g., Cantor & Mischel, 1979; Rosch 1977). Therefore social categorization leads to a distinction of the social world into two main categories: 'we' versus 'them'.

### **2.1.2 Social Identification**

The effect of social categorization is a precondition for social identification and was more elaborated and investigated in the framework of the self-categorization theory (Turner, 1978, 1982, 1984). The starting point of the self-categorization theory was the

distinction between self-definitions in terms of social category memberships (social identity) and self-definitions in terms of personal attributes (personal identity). Whereas the personal identity includes knowledge and beliefs about one's own skills and abilities, the social identity<sup>1</sup> of a person "derives from their knowledge of their membership in a social group (or groups) together with the value and emotional significance attached to the membership" (Tajfel, 1981, p. 255). Situational variations can lead to the salience of one of the two identities. Turner (1984) argued that people stereotype themselves and others in terms of salient social categories. In this process the group identity becomes the salient part of the individual's self-concept, in a way that it accentuates perceptions of similarities within the ingroup and perceptions of contrast to the outgroup, enhancing the perception of intergroup differences. The more a social identity becomes salient, the less people tend to perceive themselves as individuals but more as prototypical for the ingroup. This is what Turner defines as a depersonalization of the self: "A cognitive redefinition of the self – from unique attributes and individual differences to shared social category memberships and associated stereotypes" (Turner, 1984, p. 528). This process of self-stereotyping was also demonstrated empirically (e.g., Hogg & Turner, 1987). Social identity perspective assumes that the process of social identification with a group therefore leads to a shift from the 'I' to a 'we', which transforms interpersonal behavior into intergroup behavior.

Already in 1981 Tajfel stated, as quoted above, that social identity includes knowledge, value and emotional significance of membership in a social group. More recent work elaborated on this idea and developed multi-factoral models of social identification (e.g., Brown, Condor, Matthews, Wade, & Williams, 1986; Cameron, 2004; Ellemers, Kortekaas, & Ouwerkerk, 1999; Jackson, 2002; Leach et al., 2008; Ryan, Iyer, Hersby, & Kulich, 2008). The different proposed multi-factoral models are in broad agreement with the three factors stated by Tajfel (1981). Ellemers and colleagues, for example, argued that self-categorization (cognitive component), commitment to the group (emotional component), and group self-esteem (evaluative component) are related but separate aspects of group members' social identity. In their study they demonstrated that the three different aspects can be distinguished in a principal component analysis. Moreover, the authors showed that the three components were differentially related to manipulations of group features and displays of ingroup favoritism (see also Jackson, 2002).

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<sup>1</sup> In the following social identity and collective self-esteem will be used as terms for the same construct, subsumed as group-based self-esteem. It is defined as evaluative connection of the group member to his or her group. For a detailed discussion see Section 3.1.

### 2.1.3 *Social Comparison*

The third cognitive process crucial for the social identity theory (Tajfel & Turner, 1979) is social comparison, which is based on the very influential theory of social comparison processes by Festinger. Within this theory Festinger stated three hypotheses on an interpersonal level:

- (1) humans have a drive to evaluate their opinions and abilities;
- (2) whenever objective, non-social means are not available, people evaluate their opinions and their abilities by comparison with others;
- (3) people prefer to compare themselves with other people who are similar to them.

Within the last 50 years, researchers redefined and extended Festinger's theoretical assumptions, however, overall empirical findings support the important role of social comparison processes (e.g., Blanton, Buunk, Gibbons, & Kuyper, 1999; Buunk & Ybema, 1997; Kruglanski & Mayseless, 1990; Suls & Wils, 1991; Taylor, Buunk, & Aspinwall, 1990). However, the third hypothesis has been modified recently. First, several studies showed that there are situations in which people tend to compare themselves with people who are clearly better or worse off than themselves (e.g., Blanton et al., 1999; Buunk & Ybema, 1997). But, how can people without social comparison decide in a first place who is similar to them and how is different? Gilbert and colleagues solved this paradox by showing that people often consider diagnosticity of information only after comparisons are made (Gilbert, Giesler, & Morris, 1995). The authors showed in two studies that people do make nondiagnostic comparisons and quickly unmake them if that is possible. This means that even if people know that it does not make much sense to compare themselves with a specific other person, for example because the other person has benefits they did not have, they tend to compare themselves with this person and then afterwards cognitively undo the comparison.

Tajfel and Turner (1979) integrated Festinger's (1954) basic arguments about social comparison into social identity theory. They postulated that the group evaluations are relative in nature. People evaluate their ingroups on the basis of a comparison process, within which the ingroup is compared to a relevant outgroup on related dimensions. Whenever the individual is highly identified with the group, the result of the comparison process is of great importance for the individual's social identity, and hence the individual's self-concept. If the comparison's result shows that the ingroup is superior to the compared outgroup, the positive ingroup image reflects onto the individual.

#### **2.1.4 Positive Distinctiveness**

The underlying motivation driving intergroup behavior, as Tajfel and Turner (1979) argued, is the need for positive distinctiveness. The need for positive distinctiveness is fulfilled as soon as the ingroup is distinct and evaluated more positively on a relevant dimension than a relevant outgroup. Social identity theory postulates that intergroup behavior has the function to evaluate, maintain, and restore the positive social identity, which is realized through positive distinction of the ingroup. This means that in intergroup contexts people strive for a positive distinctiveness for their group. In doing so, positive connotations of ingroup membership become positive connotations for the self (e.g., Abrams & Hogg, 1988; Rubin & Hewstone, 1998; for a detailed discussion of the motivational dynamics see Section 2.3 and Section 3).

Social identity theory does not only postulate the need for a positive social identity, but also hypothesizes that people strive to fulfill this need by comparing their ingroup to a relevant outgroup with the goal to achieve positive distinctiveness. This helps to explain the before mentioned results in minimal group settings (Tajfel et al., 1971). In the study by Tajfel and colleagues the group members tended to not only favor their ingroup, but were motivated to maximize differences between the ingroup and the outgroup, even at the expense of absolute ingroup gains (Tajfel et al., 1971). These results indicate that the central motive underlying group members in intergroup situation is not always the absolute gain for the ingroup. The participants' behavior seemed to be driven by the motivation to establish the maximal (positive) differentiation between the ingroup and the outgroup.

However, researchers criticized the minimal group paradigm arguing that interdependence expectations could not be excluded as interpretations of the results. Participants might have expected that when they gave their ingroup more than the outgroup other ingroup members would also do so (Ferguson & Kelley, 1964; Gaertner & Insko, 2000; Karp, Jin, Yamagishi, & Shinotsuka, 1993; Rabbie & de Brey, 1971; Rabbie & Horowitz, 1969; Rabbie & Wilkens, 1971). Recently, Stroebe, Spears and Lodewijkx (2007) argued that in intergroup situations interdependence and the need for positive social identity often play together and lead to intergroup conflict. In line with Stroebe and colleagues I argue that interdependence alone can not explain competitive behavior in intergroup situations and that therefore the need for positive social identity plays a fundamental role in intergroup behavior.

In sum, Tajfel and Turner (1979) integrated the four basic processes of social identity theory in the following theoretical principles:

- 1) Individuals strive to achieve or to maintain a positive social identity.
- 2) Positive social identity is based to a large extent on favorable comparisons that can be made between the ingroup and some relevant outgroups.
- 3) When social identity is unsatisfactory (group is not positive distinct or evaluated more negative to compared outgroups), individuals will try to change the comparison outcome by using identity management strategies (see the next section).

## 2.2 Reactions to Negative Social Identity

Other than many scientists assume there is much more about social identity theory (Tajfel & Turner, 1979) than social categorization, social identification, social comparison, and positive distinctiveness. These four fundamental processes are not “the end of the story, [...] but it was only the beginning” as Ellemers and colleagues put it (Ellemers, Spears, & Doosje, 1999; p. 8). Social identity theory is a theory explaining and exploring the psychological effects of different status<sup>2</sup> positions of group members. Moreover, social identity theory helps to explain group members’ reactions to different status positions depending on the social structure and the group members’ shared beliefs about the given social structure. Therefore, social identity theory is a theory of social change.

As a consequence, social identity theory can predict how group members react to negative comparison outcomes. Social identity theory postulates that negative comparison outcomes motivate group members to deploy identity management strategies. Identity management strategies aim to restore or maintain the positive distinctiveness of the ingroup compared to a relevant outgroup. Tajfel and Turner (1979, 1986) stated three types of identity management strategies as reactions to negative comparison outcomes: individual mobility, social competition, and social creativity. Importantly, Tajfel and Turner (1979) assumed that the interaction between the need for positive social identity and group members’ perception of the social structure in the intergroup context predicts

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<sup>2</sup> The term ‘status’ is a sociological term used in intergroup relation research to explain a consensual superiority of one group (or person) on central dimensions compared to another group (or person). However, in several studies within social identity research it was operationalized in form of positive distinctiveness of one group compared to another group on one dimension.

group members' behavior and attitudes towards a relevant outgroup (see also Abrams & Hogg, 1988). Following this, Ellemers and colleagues (for an overview see Ellemers, 1993) pointed out four socio-structural variables defining the social structure of intergroup situations:

- 1) the relative status position of one's group
- 2) the permeability of group boundaries
- 3) the stability of group status
- 4) the legitimacy of personal status or group status.

Empirical evidence was found that people are more strongly motivated to identify with high status groups compared to low status groups (Sachdev & Bourhis, 1985, 1987, 1991). This is in line with social identity theory as only high status groups have the ability to satisfy group members' need for positive distinctiveness.

In the following sections the three identity management strategies are described. For each strategy a summary of research will be presented, pointing out under which socio-structural conditions which identity management strategy most likely is chosen.

### **2.2.1 Individual Mobility**

When members of low status groups try to leave their group and join a higher status group, this is defined as individual mobility. The mobility can either take place in a very concrete way by physically leaving the low status ingroup and joining the higher status group, or can take place on a cognitive level, by cognitively distancing oneself from a low status group. Individual mobility is a strategy motivated by the goal to enhance the relative status position of an individual group member, while the group as a whole remains in the unfavorable low status position.

Tajfel and Turner (1979) predicted that if identification with one group does not lead to a positive social identity because of the low status position of the group, group members are motivated to leave this group and join a higher status group. Adding up on the example introduced at the beginning of the thesis, disadvantage East Germans might move to West Germany and try to distance themselves from their East German identity. They could, for example, try to hide their East German dialect and adopt the new regional dialect, avoid conversations about their regional provenance, or accentuate that half of their family originally comes from West Germany.

However, leaving one's own group is only possible if boundaries between the two groups are permeable (Mummendey, Klink, Mielke, Wenzel, & Blanz, 1999; Taylor, Moghaddam, Gamble, & Zellerer, 1987; Wright, Taylor, & Moghaddam, 1990). Ellemers, van Knippenberg, de Vries, and Wilke (1988) showed within a minimal group paradigm that high status group members were relatively satisfied with their group membership, independently of the permeability of group boundaries. However, members of low status groups were less satisfied with their group membership if group boundaries were permeable than if they were impermeable. In sum, group members of low status groups tend to leave their group if group boundaries are permeable and try to join high status groups.

### **2.2.2 Social Competition**

The second identity management strategy is social competition. Social competition means that ingroup members seek positive distinctiveness through direct competition on the relevant dimension with the outgroup. Group members try to reverse the relative positions of the ingroup and outgroup on salient dimensions. Social competition therefore is a collective strategy, leading to a status enhancement of the whole group and not only for individual group members.

Again, let me come back to the example of the East Germans being confronted with their negative distinctiveness compared to the West Germans on an economical dimension. The East Germans could try to claim as high salaries as West Germans by stating that their work is as much worth as the work done by the West Germans, or by asking the employers for a direct comparison between the performance of East and West German workers.

Tajfel and Turner (1979) stated that only when group boundaries are impermeable and therefore individual mobility cannot be applied people use collective strategies. Empirical evidence was found for this assumption (Taylor, et al., 1987; Wright, et al., 1990). However, the stability of status positions is another important determinate for choosing social competition as identity management strategy. If group members perceive the status relations of the groups as stable and not changeable, it is less likely that they try to socially compete with the outgroup, compared with the situation within which the status positions seem unstable (Tajfel, 1978).

Different to Tajfel and Turner (1979) who argued that individual mobility is the preferred strategy when group boundaries are permeable, Ellemers and colleagues (1999) argued that irrespectively of (in-)permeable group boundaries, the perception of instability can lead to the motivation to show social competition. To test this hypothesis, Ellemers, van Knippenberg, and Wilke (1990) investigated the role of permeability and stability independently. They again found that satisfaction and identification was higher in high status groups than in low status groups. When group boundaries were permeable group members focused on possibilities of individual mobility. However, instable status relations affected ingroup identification independently of permeability. If people perceived the status relation between the groups to be changeable they were less satisfied with their group's status and more motivated to aim for the ingroup's status enhancement.

The third factor that influences the motivation to deploy a collective strategy is legitimacy. Unjust or unfair treatment can enhanced social change (Cadick, 1980; Mummendey, Kessler, Klink, & Mielke, 1999; Tajfel, 1987) and motivate people to show social competition.

Taken together, Tajfel and Turner (1979) assumed that individual mobility is always the preferred identity management strategy for low status group members. This was later qualified by Ellemers and colleagues (1990) who showed that stability of status relations can influence the motivation to show social competition whether or not group boundaries are permeable. Furthermore, research showed that perceived legitimacy can also motivate social competition. In line with this argument Tajfel and Turner (1979) argued that the most powerful cause of intergroup conflict is the combination of unstable and illegitimate status relations.

### **2.2.3 Social Creativity**

Social creativity is defined as “all of these responses (which) are based on primarily cognitive changes of parameters that define the intergroup comparison context which the actual status inequality between groups is derived from” (Blanz, Mummendey, Mielke, & Klink, 1998; pp. 701-702). Social creativity is the broadest of the three identity management strategies. In my opinion, all forms of undoing the negative comparison outcome, ranging from denying the information to redefining or altering the elements of



the comparative situation can be subsumed as social creativity. Besides others, this strategy focuses on one of the following aspects:

a) Comparing the ingroup to the outgroup on some new (status irrelevant) dimensions. An increase in intergroup tension can then be predicted, when the legitimizing of the value assigned to the new social products threatens the outgroup's superior distinctiveness. Coming back to the example comparing West and East Germans: East Germans could state that they are the warmer and friendlier than West Germans and that social networks are the only thing that really matters in live. In this way they change the comparison dimension resulting in a positive distinctiveness of the own group compared to the outgroup.

b) Changing the values assigned to the attributes of the group, so that comparisons which were previously negative are now perceived as being positive. The comparison dimension remains the same, but the previous prevailing value system is rejected and reversed. That means, the East Germans could state that money corrupts the character and that they are therefore better off than the West Germans because they do not have as much money.

c) Changing the outgroup with which the ingroup is compared is another social creativity strategy– in particular, ceasing or avoiding to use the high-status outgroup as a comparative reference frame. That is, the East Germans could for example change the comparison group by stating that a comparison with West Germany is not informative because of the 40 years of different political and economical development in the two countries. East Germans could favor a comparison with Poland. East Germans are likely to perceive themselves as economically better off than Poles and restore a positive East German identity after a comparison with Poles.

Social creativity is likely to be chosen under conditions in which the status position of the involved groups is perceived as stable and legitimate. However, only little empirical work has been done on social creative strategies. Besides few others (e.g., Jackson, Sullivan, Harnish, & Hodge, 1996), one exception is the work done by Mummendey and colleagues (Mummendey, Klink et al., 1999; Mummendey, Kessler et al., 1999) in which they did not find an influence of socio-structural variables on the two investigated social creative strategies. Therefore it seems that investigating social creativity is very difficult. In the following, I restrict my focus to individual mobility and social competition for the following reasons: As social creativity is a very broad category it deserves a separate examination (Jackson et al., 1996). Moreover, individual mobility and social competition

represent two opposed poles on the dimension of individual versus group strategies and therefore are of greater interest here.

To conclude, social identity theory (Tajfel & Turner, 1979) postulates that behavior in intergroup situations is driven by the need for positive social identity, which can be obtained through positive distinctiveness after social comparison of one's ingroup compared to a relevant outgroup. Whenever the comparison outcome leads to a negative result, the need for a positive social identity is not fulfilled, and the motivation to use identity management strategies is triggered. Which identity management strategy is chosen depends on an interaction between the group member's relation to their group and socio-structural variables such as permeability of group boundaries, stability and legitimacy of the status relation.

### **2.3 Motivational Dynamics of Social Identity Theory: The Self-Esteem Hypothesis**

As outlined before, social identity theory (Tajfel & Turner, 1979) postulates the need for positive distinctiveness but remained rather vague about the exact motivational process. In 1988 Abrams and Hogg formulated the underlying motivational dynamics of social identity theory in a way that they could be tested empirically. The two researchers presented the self-esteem hypothesis (SEH). The first corollary of the self-esteem hypothesis (SEH1) postulates that "successful intergroup discrimination will enhance social identity, and hence self-esteem" (p. 320). The second corollary (SEH2) postulates that "low or threatened self-esteem will promote intergroup discrimination because of the 'need' for positive self-esteem" (p. 320). This extremely innovative and important step in understanding the motivational processes within social identity theory initiated a large number of studies that empirically tested these two corollaries (for an overview see Rubin & Hewstone, 1998).

### **2.3.1 Evidence for the First Corollary of the Self-Esteem Hypothesis**

In their overview of studies testing the two corollaries, Rubin and Hewstone (1998) found empirical support for the positive relation between intergroup bias<sup>3</sup> and self-esteem (SEH1). Showing intergroup bias by favoring the ingroup and/or derogating the outgroup increased group members' self-esteem (e.g., Lemyre & Smith, 1985; Oakes & Turner, 1980). This positive relation between intergroup bias and self-esteem was shown for both personal self-esteem (Chin & McClintock, 1993, Experiment 1; Hogg, Turner, Nascimento-Schulze, & Spriggs, 1986; Lemyre & Smith, 1985; Mullin & Hogg, 1995; Oakes & Turner, 1980; Vanbeselaere, 1991) and group-based self-esteem (Chin & McClintock, 1993, Experiment 2; Gagnon & Bourhis, 1996).

### **2.3.2 Evidence for the Second Corollary of the Self-Esteem Hypothesis**

However, searching for empirical evidence for the first part of SEH2 (low self-esteem leads to intergroup bias) leads to a closer examination of studies testing SEH2. Very early on, some studies (Ehrlich, 1973; Wills, 1981; Wylie, 1979) found a negative relation between self-esteem and outgroup attitudes (e.g., prejudice<sup>4</sup>). However, these studies had two main problems. First, within the studies social identity threat was not measured and therefore its role was ignored in the investigated relations. Second, the studies were correlational in nature so that it was not possible to interpret the direction of the found relation. For this reason it is not even clear if these results should be interpreted as challenge of the relation proposed in the first corollary (intergroup bias enhances self-esteem) or as support for the first part of the second corollary (low self-esteem enhances intergroup bias). Theoretical considerations by Crocker and colleagues were in contrast to these earlier studies (e.g., Crocker, Thompson, McGraw, & Ingerman, 1987) and pointed to the importance of threat for the motivation to deploy identity management strategies (actually, most studies focused on intergroup bias only). Crocker and colleagues argued

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<sup>3</sup> In the following I use the term 'intergroup bias' instead of 'intergroup discrimination' because in my opinion the mentioned studies finding the relation between self-esteem and 'intergroup discrimination' investigated a cognitive bias towards the ingroup either by favouring the ingroup or by derogating the outgroup and not discriminating behavior.

<sup>4</sup> The term 'prejudice' includes much more than simple evaluations of outgroups (Sears & Henry, 2003), for example including cognitive and evaluative aspects. However, the term includes an overall evaluation of an outgroup and therefore the mentioned results on prejudice seem important for our argument.

that “if downward comparison can enhance self-esteem, we would expect that those who are higher in self-esteem are most adept at using downward comparisons to cope with threat” (p. 908).

Examining the studies testing the relation between self-esteem and intergroup bias (SEH2) reviewed by Rubin and Hewstone (1998) one notices that there have been different ways of investigating SEH2. Some researchers (e.g., Abrams 1982, 1983 as cited in Abrams & Hogg, 1988; Crocker & Schwartz, 1985; Sidanius, Pratto, & Mitchell, 1994) measured personal self-esteem and then correlated prior personal self-esteem to ingroup favouritism. The results of these studies did not reveal a negative relation between self-esteem and ingroup favouritism. In contrast, in several studies the opposite relation emerged (Abrams 1982, 1983 as cited in Abrams & Hogg, 1988; Crocker et al., 1987; Sidanius et al., 1994) which is in line with Crocker’s (Crocker et al., 1987) argument. Other researchers (Brockner & Chen, 1996; Brown, Collins, & Schmidt, 1988; Crocker & Luhtanen, 1990; Crocker et al., 1987; Seta & Seta, 1992) focused on the interaction of threat and self-esteem. These researchers tested in several studies how the combination of threat and self-esteem influences ingroup favouritism and outgroup derogation. Their findings show repeatedly that individuals with high self-esteem (not people with low self-esteem) responded to threats to their self-concept by derogating the outgroup (Crocker et al., 1987) and/or enhancing the ingroup (Brown et al., 1988; Crocker & Luhtanen, 1990). Initial studies measured personal self-esteem (Brockner & Chen, 1996; Brown et al., 1988; Crocker et al., 1987; Seta & Seta, 1992) whereas later studies also measured group-based self-esteem (Crocker & Luhtanen, 1990).

### ***2.3.3 Specifying the Second Corollary of the Self-Esteem Hypothesis***

Summing up the outlined studies testing SEH2, one notices that nearly no empirical evidence for the first part of SEH2 (low self-esteem leads to intergroup bias) was found (Rubin & Hewstone, 1998; see also Houston & Andrepoulou, 2003). Moreover, eight out of ten studies found in contrast to the second corollary that high pretest self-esteem was associated with greater intergroup bias. Therefore, while closer examining these studies testing SEH2 I found that most studies focused on ‘low’ self-esteem, whereas the suggestion of ‘threatened self-esteem’ has not been clearly spelled out. To account for this observation, I develop the argument that it is not low self-esteem but threatened high self-

esteem that motivates the use of intergroup bias. A positive perception of one's ingroup will be reflected in higher group-based self-esteem (Ellemers, Kortekaas, & Ouwerkerk, 1999). This positive group perception (i.e., group-based self-esteem) may serve as an internal standard to which incoming appraisals of group related events (e.g., social comparison outcomes) are compared. Whenever these events are negatively discrepant to this internal standard group members will become active by showing intergroup bias in order to cope with this negative discrepant event and to re-establish the positive group perception. In contrast, whenever events are not negatively discrepant there is no need to show intergroup bias.

To illustrate this theoretical assumption, I want to come back to the example of East Germans comparing their salaries to the salaries of West Germans. Whenever East Germans have a high group-based self-esteem (e.g., by thinking "I like being East German.") and then receive the information that the salaries in West Germany are up to 20% higher, a discrepancy between self-view and reality occurs, having a negative effect on the group-based self-esteem. Therefore the East Germans then are motivated to deploy identity management strategies to restore their group-based self-esteem. As outlined before there are several different reactions the East Germans could show in this situation. For example, they could show intergroup bias by favoring the ingroup and derogating the West Germans. Or they could argue that money corrupts the character and that therefore 'good' people should not have much money. The East Germans could further argue that they are happy for not having as much money as the West Germans as money does not count at all in life, but, in contrast, good and stable relationships. In this case, the East Germans would have devaluated the former relevant comparison dimension (economical success) and implemented a new comparison dimension (personal relationships) on which they perceive themselves as positive distinct from West Germans. All these strategies should lead to a decrease of the perceived difference between the internal standard (group-based self-esteem) and the incoming appraisal and should restore the group-based self-esteem of the East Germans. However, if the East Germans would earn more than the West Germans from the beginning on, then they would be positive distinct on the relevant comparison dimension and then there would be no need for the East Germans to show intergroup bias or any other identity management strategy.

Taken together, my suggestion that high group-based self-esteem that is threatened leads to the motivation to show intergroup bias is consistent with previous work on motivational dynamics of social identity theory. Moreover, my suggestion is also

consistent with empirical findings in interpersonal research. On the one hand, research on depression showed that individuals having a high level of self-esteem show a variety of self-serving behavior (e.g., Alloy & Abramson, 1979) compared to individuals low in self-esteem (for a review see Taylor & Brown, 1988). On the other hand this hypothesis is in line with recent work on ego-threat (e.g., Bushman & Baumeister, 1998). Bushman and colleagues (for a review see Baumeister, Smart, & Boden, 1996) showed that people having high unstable personal self-esteem (e.g., narcissism) are most likely to show aggressive behavior when they are threatened.

#### ***2.3.4 Studies Challenging the Specification of the Second Corollary***

In the following another set of studies examining the relation between threat and intergroup bias will be reviewed. In these studies researchers either measured or manipulated relative ingroup status which could be seen as a manipulation of a negative discrepant event for members of assigned low status groups. In their meta-analysis on the effect of relative ingroup status on intergroup bias, Mullen, Brown, and Smith (1992) concluded that there is a positive relation between ingroup status and intergroup bias, at least in artificial groups. This means that higher status implies a stronger tendency for intergroup bias. This result appears to contradict my assumption because threat seems not necessary to motivate intergroup bias. However, I would like to suggest that the manipulation of relative group status with a subsequent measurement of intergroup bias will obviously lead to these results because the measured 'intergroup bias' represents basically a manipulation check of a successful status manipulation. To be clear, my suggestion that 'intergroup bias' in these studies represents basically a manipulation check does not preclude that some bias may also be involved. However, manipulation check and potential intergroup bias are difficult to disentangle in these studies. Moreover, Mullen and colleagues indicated that these results are true for laboratory groups only. Natural lower status groups seem to perceive a negative discrepancy when comparing their group with a higher status group and therefore exhibit stronger intergroup bias than members of the high status group (Mummendey, Kessler et al., 1999). This finding is consistent with my argument because I assume that lower status group members try to achieve a positive view of their ingroup by showing intergroup bias to cope with the perceived negative discrepancy.

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In sum, most of the studies mentioned in Rubin and Hewstone's (1998) overview are consistent with the first corollary of the self-esteem hypothesis (SEH1) stating a positive effect of intergroup bias on group-based self-esteem. Concerning the second corollary (SEH2) the reviewed studies are mainly in line with my assumption that an interaction between threat (i.e., a negative discrepant event) and high group-based self-esteem on the use of intergroup bias exists. Moreover, the studies that seem inconsistent with the proposed account are not conclusive either because they do not control for threat or because their intergroup bias measure basically represent a manipulation check of status manipulations (Mullen et al., 1992). Based on these assumptions, I postulate that the relationship between the prior level of group-based self-esteem and intergroup bias is in contrast to the assumption made in the first part of SEH2 (low ... self-esteem will promote intergroup bias). Instead, it is in line with the second part of SEH2 (*threatened* self-esteem will promote intergroup bias). This means that group members having a high group-based self-esteem should be especially motivated to show intergroup bias if they receive threatening information about their group.

### **3. A Dynamic Approach to Motivational Processes of Social Identity Theory**

In the following section I will introduce a dynamic approach of the underlying motivation of social identity theory (Tajfel & Turner, 1979). This new dynamic approach extends existing theoretical assumptions (Crocker et al., 1987) and builds on the empirical work summarized before. Before doing so, it is necessary to outline the meaning of the construct of ‘group-based self-esteem’.

#### **3.1. The Construct of Group-Based Self-Esteem**

Rubin and Hewstone (1998) argued in their review of studies testing the two corollaries of the self-esteem hypothesis that it is necessary to distinguish between different aspects of self-esteem: global versus specific, state versus trait, and personal versus social. In the following section these differentiations by Rubin and Hewstone are going to be presented and integrated in the construct of self-esteem used in social identity research.

##### ***3.1.1. Different Aspects of Self-Esteem***

First, Rubin and Hewstone (1998) distinguished between global and specific self-esteem. Global self-esteem refers to a global appraisal a person has of his or her value. It holds one’s overall self-image, while specific self-esteem involves one’s appraisals of one’s value in a particular area (also called domain-specific self-esteem). Furthermore, Rubin and Hewstone made a distinction between personal versus social self-esteem. They defined social self-esteem as the esteem in which group members hold the shared self-image that constitutes their social psychological ingroup, whereas personal self-esteem refers to the personal self-image of each individual. Finally, the two authors differentiated between trait versus state self-esteem. Whereas trait self-esteem is a person’s (or group’s) long-term summary of self-evaluations and is more or less stable over time, state self-esteem can be seen as a person’s (or group’s) self-esteem in a particular situation, which is



influenced by feedback of the environment. In line with this postulation I argue that state self-esteem can be understood as a regulatory mechanism: It monitors how well one (or one's group) does in a specific situation. This idea of self-esteem accords to the sociometer theory of Leary and Baumeister (for an overview see Leary & Baumeister, 2000). In their theory, Leary and Baumeister analyzed the role of self-esteem on an interpersonal level, arguing "that people devote so much attention to their self-esteem not because self-esteem per se has particular consequences, but because self-esteem is a gauge or monitor of something that is important." (p. 9). Thus, Leary and Baumeister argued that self-esteem has a monitoring function with the need to belong as underlying motive. I would like to postulate that self-esteem is more than that. Whereas Leary and Baumeister argued that the self-esteem system monitors one's actual and potential relationships, I suggest that the self-esteem system has the function to monitor a person's (or groups') success in social comparison processes. This means that in line with Leary and Baumeister (2000) I assume that self-esteem per se is not important, but that it can be understood as an indicator for how well one is doing. Depending on which specific aspect of self-esteem one focuses, self-esteem monitors one's doing compared to others on a general level (trait self-esteem) as well as in particular situations (state self-esteem), on a personal level (personal self-esteem) as well as on a group level (group-based self-esteem), and on a global level (global self-esteem) as well as on a specific level (specific self-esteem). In other words, I assume that self-esteem has the function to give individuals feedback on different levels on how well they do in comparison to relevant others.

### ***3.1.2. Group-Based Self-Esteem***

Clearly, because social identity theory (Tajfel & Turner, 1979) is a theory about behavior in intergroup situations, within its research it should have focused on social and group-based self-esteem, respectively. However, one realizes that the fundamental need postulated by Tajfel and Turner (1979) for a 'positive personal and social identity' or for 'positive distinctiveness' was not very precise. In their conceptualisation of this need, Abrams and Hogg (1988) as well as their successors replaced it by the concept of personal self-esteem, social and collective self-esteem, respectively. Moreover, the empirical studies measured self-esteem in various ways: Whereas early studies measured personal self-esteem only (e.g., Brockner & Chen, 1996; Brown et al., 1988; Crocker et al., 1987; Seta &

Seta, 1992), later studies included collective self-esteem (e.g., Crocker & Luhtanen, 1990), while others focused on ingroup identification (e.g., Sidanius et al., 1994). This leads to some ambiguousness in the use of the term collective or social self-esteem within the literature. Following Ellemers and colleagues (1999; see also Tajfel, 1978), I would like to suggest that collective self-esteem should be seen as the evaluative dimension of peoples' identification with their ingroup. Thus, the evaluative dimensions of ingroup identification would be the appropriate measure of group-based self-esteem. However, collective self-esteem may also tap into this construct and measure the positive distinctiveness of the ingroup and therefore can be subsumed into the same construct. For this reason, I would like to refer to this kind of self-esteem as *group-based self-esteem*. Group-based self-esteem denotes how ingroup members overall evaluate their group. Preconditions of group-based self-esteem are, for example, group status or the knowledge of being a member in a certain group (i.e., the cognitive component of identification). Only when group members perceive themselves as part of the group, their evaluation of the ingroup (as either positive or negative) may affect them and motivate them to change this evaluation if it is necessary.

To sum up, in the following I want to use the term group-based self-esteem to refer to people's overall evaluation of their group. Moreover, I assume that *specific state group-based self-esteem* can be understood as a monitoring system reporting group members how well their group does in a specific social comparison process with a relevant outgroup on relevant dimensions (for this monitoring function of group-based self-esteem see also Figure 1).

### **3.2. The Basic Assumptions of the Dynamic Approach**

Building on and extending, the before mentioned two corollaries of the self-esteem hypothesis (Abrams & Hogg, 1988), I postulate that the positive perception of one's ingroup (i.e., group-based self-esteem) may serve as an internal standard to which incoming appraisals of group related events (e.g., social comparison outcomes) are compared. A negative discrepancy of these events from the internal standard is supposed to lead to a decrease in the state group-based self-esteem. As a consequence, group members should become active by choosing identity management strategies in order to cope with this negatively discrepant event and to re-establish the group-based self-esteem (see Figure 1). Surprisingly, until now the work on the motivational dynamic of social identity theory

in form of the self-esteem hypothesis has only focused on intergroup bias as potential identity management strategy to restore or enhance one's group-based self-esteem (Abrams & Hogg, 1988; Rubin & Hewstone, 1998). Even more recent work (e.g., Houston & Andreopoulou, 2003) only focused on intergroup bias, ignoring the role of the other identity management strategies. However, intergroup bias is just one possible identity management strategy among many others. For this reason I extend SEH1 and postulate that not only intergroup bias, as predicted in SEH1, elevates group members' group-based self-esteem, but that the successful deployment of any identity management strategy can do so.

In line with the second part of SEH2, and extending my argument of the importance to investigate all identity management strategies, I further hypothesize that the motivation to use an identity management strategy is especially high for group members having a threatened high group-based self-esteem. For group members high in group-based self-esteem the standard to which the incoming appraisals of group related events are compared should be on a high level. This means that whenever they receive threatening information (in form of a negative comparison outcome) a large negative discrepancy is likely to occur between the internal standard and the incoming appraisal. This perceived discrepancy, in turn, is supposed to trigger a strong motivation to use an identity management strategy to reduce the discrepancy and restore group-based self-esteem<sup>5</sup>. Which identity management strategy will be chosen by the threatened group member should depend on the relation of the individual to the group (e.g., trait and state level of group-based self-esteem) and on the perception of the socio-structural variables of the specific intergroup context (Ellemers, 1993). Even though a lot of research has been done with respect to the influence of the socio-structural variables on the choice of identity management strategies (e.g., Ellemers et al., 1988; Ellemers et al., 1990; Ellemers, Wilke, & Van Knippenberg, 1993; see Ellemers, 1993, for an overview), until now no research has combined the two research lines (the self-esteem hypothesis and the use of different identity management strategies).

However, there might be situations within which either no identity management strategy at all can be used or a not fitting identity management strategy is chosen. When no identity management strategy can be used group-based self-esteem can not be restored. This should become visible in a decrease of group-based self-esteem. In addition, I postulate that this reduced group-based self-esteem goes together with an increase in

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<sup>5</sup>It might also be the case that an event is positive discrepant to the internal standard. This should also lead to a discrepancy between the expectation and the actual feedback. This discrepancy should also motivate the individual to try to reduce it. However, even though is also in an interesting case this will not be investigated in this thesis and should be examined in a separate research project.

negative emotions (for a detailed discussion of this point see below). In contrast, whenever events are not negatively discrepant, meaning that a social comparison process led to a positive distinctiveness of the own group, no motivation is triggered to manage one's social identity (see Figure 1).

In sum, past studies testing the two corollaries (e.g., Abrams & Hogg, 1988; Rubin & Hewstone, 1998) found that whereas corollary one (SEH1: intergroup bias elevates self-esteem) could mostly be supported, the first part of corollary two (SEH2: low self-esteem promotes intergroup bias) was mostly not supported. Moreover, the vast majority of the studies found support for the second part of the second corollary: Threatened self-esteem promotes intergroup bias. Although originally SIT is about various identity management strategies, research on the self-esteem hypothesis until now was limited to intergroup bias as only one identity management strategy. Remarkably, even more recent studies (Houston & Andreopoulou, 2003; for reviews see Aberson, Healy, & Romero, 2000; Rubin & Hewstone, 1998) mostly used intergroup bias as dependent variable. Therefore, both corollaries of the self-esteem hypothesis (Abrams & Hogg, 1988) should be extended. Regarding the first corollary (SEH1) I hypothesize that the successful use of any identity management strategy will lead to an increase in group-based self-esteem. Regarding the second corollary (SEH2) I postulate an interaction between threatening information and high group-based self-esteem on all possible reactions to this threat.

### ***3.2.1. Empirical Evidence for the Relation between Group-Based Self-Esteem and Threat***

In the following section I will present empirical evidence for the postulated interactive relation between group-based self-esteem and threat. Besides the studies directly investigating the self-esteem hypothesis, which were presented and discussed in Section 2.3.1 and Section 2.3.2, I am going to present studies which have investigated the dynamic relationship, however, often within a somewhat different theoretical framework.

One study by Ellemers, Spears, and Doosje (1997) supports my assumption that the level of identification (i.e., group-based self-esteem) plays an important role for group member's reaction to threat. The authors' goal was to investigate the effects of identification and permeability of group boundaries on the desire for individual mobility. They induced low status (social identity threat) in a minimal group paradigm and

manipulated identification and permeability of group boundaries. The results of the study showed that low identifiers more strongly desired individual mobility compared to high identifiers, independent of the permeability of group boundaries. These results fit nicely with the presented view: Group members react to threatening information (e.g., low status) in different ways depending on how much they value their group.

Another research line which has to be taken into account regarding SEH2 is the work on the effects of prejudice on self-esteem. Crocker and Major (1989) postulated that experiencing prejudice will decrease self-esteem. The so called "looking-glass" approach (Cooley, 1956; Mead, 1934) assumes that realizing the negative views others have about the ingroup leads to an internalization of that view and lowers self-esteem. Therefore attributions to prejudice should harm self-esteem. Even though there are good reasons to expect reduced self-esteem in devalued groups, Crocker and Major (1989) argue that you rarely find this effect. The authors assume that this is the case because group members of low status groups have found ways to cope with these situations by attributing negative outcomes to prejudice, devaluating certain performance dimensions, and using other groups for comparison than the higher status outgroup. These strategies help members of devalued groups to maintain a high level of their group-based self-esteem. In my opinion these strategies are identity management strategies having the goal to protect group members' positive ingroup view when it is threatened by prejudice.

Branscombe, Schmitt, and Harvey (1999) made a similar argument in their work on the rejection-identification model. Branscombe and colleagues investigated the relationship between attributions to prejudice, minority group identification, and psychological well-being. In their work they integrated different research lines within one model. The authors postulated and found empirically that the negative relation between willingness to make attributions to prejudice and psychological well-being is mediated by group identification. In particular, the results showed a positive relation between willingness to make attributions to prejudice and minority group identification. Moreover, minority group identification was also positively related to psychological well-being. I assume that minority group members' perception of discrimination can be understood as a threat to their social identity. Therefore they have to react in some way to restore the positive distinctiveness of their ingroup compared to the (majority) outgroup. One way to cope with the threatening information is to increase identification with the minority group. Thus, in this case ingroup identification seems to play a comparable role as intergroup bias in the before mentioned work on the self-esteem hypothesis (Rubin & Hewstone, 1998).

Also Schmitt and Maes' (2002) work provides empirical support for the before made argument. The authors showed that on the one hand intergroup bias increases with increasing group identification. On the other hand, intergroup bias buffers the (negative) effect of relative deprivation on mental health over time. Thus, it seems that participants in the study by Schmitt and Maes used intergroup bias as an identity management strategy, undoing the outcome of the negative comparison.

To summarize, several independent research lines provide empirical evidence for the postulated relation between group-based self-esteem and threat on the use of identity management strategies (e.g., Schmitt & Maes, 2002). The work by Ellemers and colleagues (1997) supports the assumption that group identification plays an important role when choosing identity management strategies. In addition, the work by Branscombe and colleagues (1999) showed that identification with the ingroup can be used as a buffer to social identity threat.

### **3.3. The Core of the Dynamic Approach: When Managing One's Identity is not Possible**

As outlined before, I assume that group members having a high group-based self-esteem are motivated to manage their social identity whenever a social comparison outcome leads to a negative distinctiveness of the ingroup compared to a relevant outgroup. However, I postulate that there are situations within which it is not possible to successfully use an identity management strategy. As will be outlined below, I assume that at least two reasons exist why group members can not always successfully manage their social identity.

#### ***3.3.1. One's Social Identity Cannot Always be Managed***

According to social identity theory (Tajfel & Turner, 1979) the socio-structural variables determine which identity management strategy can be used in a specific intergroup situation. However, it can happen that group members choose an inadequate strategy, for example, because they perceive the socio-structural variables different than they actually are.

In the following work I will focus on the second reason why sometimes one's social identity can not be managed successfully. In particular, I want to investigate situations within which no strategy at all can be used. To start with, I hypothesize that the motivation to manage one's social identity is triggered by threatening information for group members high in group-based self-esteem. Moreover, I assume that the successful deployment of an identity management strategy needs cognitive resources. This reasoning is theoretically based on the work on social comparison processes in interpersonal research (e.g., Gilbert, 1991; Gilbert et al., 1995). As mentioned earlier, Festinger (1954) postulated that people do not compare themselves with anyone, but rather only with other people 'similar' to themselves. People do this because the comparison with similar others is rich with diagnostic information, whereas the comparison with very different people does not provide much information. However, Gilbert and colleagues (1995) argued that people are not always able to avoid undiagnostic comparisons. The authors postulated that "what appears to be a failure to engage in social comparison may instead be a rapid and deliberate reputation of its effect." (p. 228). Pelham and Wachsmuth (1994) assumed in line with Gilbert et al. that social comparisons are essentially contrast effects. Wedell (1994) elaborated on this argument, stating that contrast effects "occur at an early stage in cognitive processing, require minimal resources, and are therefore beyond subject's control" (p. 1007). Petty and Wegener (1993) further assumed that such unintended and unwanted contrast effects influence decisions and judgments, and therefore post hoc corrections for these unwanted influences must be made. This argumentation is in line with the 'correction models', which suggest that peoples' thoughts and feelings are initially uncontrolled and can only be controlled by 'undoing' or correcting these undesirable effects after they happened (Gilbert, 1991; Wilson & Brekke, 1994). Based on this line of reasoning Gilbert et al. (1995) postulated that social comparisons are made spontaneously and then whenever they do not provide diagnostic information are undone with mental effort.

I want to transfer this idea to a group level. Even though in the following I do not focus on the diagnosticity of social comparisons, I argue that comparisons between groups are made spontaneously and without effort whenever an intergroup context is salient. When the comparison outcome leads to a negative distinctiveness of the ingroup the motivation of the ingroup members is triggered to undo not the comparison process itself but the negative outcome of this process. The process of undoing the negative comparison outcome is defined as successfully using an identity management strategy. Following the

argument by Gilbert and colleagues (1995), I assume that this correction processes, viz. the management of an individual's positive social identity, needs cognitive resources.

Whenever group members do not have enough cognitive resources available to successfully manage their social identity, they should not be able to undo the negative information. This means that when no identity management strategy can be deployed, the level of group-based self-esteem cannot be restored.

Moreover, I argue that the decrease in group-based self-esteem goes along with an increase in negative emotions. I assume that the experienced discrepancy between the standard and the incoming appraisal goes together with negative emotions. As the second study by Gilbert and colleagues (1995) showed, a negative comparison outcome can influence the affective state of participants. Thus, I suppose that negative emotions can be seen as an indicator for the unsuccessful deployment of identity management strategies. This argument is in line with the basic assumptions of self-regulation theories (e.g., Carver, 2004; Carver & Scheier, 1990). Carver and colleagues postulated that emotions have a functional role in regulating behavior. Carver (2004) stated that "feelings arise as a consequence of a feedback process that operates automatically, simultaneously with the behavior-guiding process" (p. 16). Carver and colleagues further argued that negative affect arises whenever an individual is doing worse than he or she intended to do, and that positive feelings arise whenever a person does better. Transferring this argument to an intergroup situation, this means that a negative comparison outcome can lead to negative feelings of the negatively distinct group members. These negative feelings are normally undone as soon as an identity management strategy is used successfully because this should change the negative comparison outcome into a positive comparison outcome. However, when it is not possible to manage one's social identity, negative emotions cannot be reduced, but instead remain on a high level.

In sum, group members high in group-based self-esteem should show an increased motivation to use identity management strategies when receiving threatening information. I assume that the use of identity management strategies needs cognitive resources. Whenever there are not enough cognitive resources available, group-based self-esteem cannot be restored, which should become visible in a decrease in group-based self-esteem and an increase in negative emotions.



### ***3.3.2. Empirical Evidence: Managing One's Social Identity Needs Cognitive Resources***

In line with my assumption that the deployment of identity management strategies needs cognitive resources is the work by Coull and colleagues (Coull, Yzerbyt, Castano, Paladino, & Leemans, 2001). Using a dual-task paradigm, Coull and colleagues could replicate the Black Sheep effect (Marques, Yzerbyt, & Leyens, 1988). Moreover they showed that high identifiers gave more negative judgments of the negative ingroup target than low identifiers. In addition, the researchers found that, as they had predicted, high identifiers spent more cognitive resources on the negative ingroup target and therefore performed worse in the secondary task (of the dual-task paradigm) than did low identifiers. This assumption can be integrated in my theoretical approach by assuming that group members high in group-based self-esteem in the study by Coull and colleagues did show a reduced performance in the secondary task because they were cognitively busy with using identity management strategies. The negative information (here the deviant ingroup member) triggered the motivation of group members high in group-based self-esteem to protect their group. I extend the reported findings by postulating that group members high in group-based self-esteem are motivated to protect the ingroup against negative information, independent of where the information comes from (either a deviant ingroup member or in an intergroup situation from an outgroup).

In sum, I assume that deploying identity management strategies needs cognitive resources. Whenever group members high in group-based self-esteem do not have enough cognitive resources available to deploy an identity management strategy, this should lead to a reduced group-based self-esteem and an increase in negative emotions.

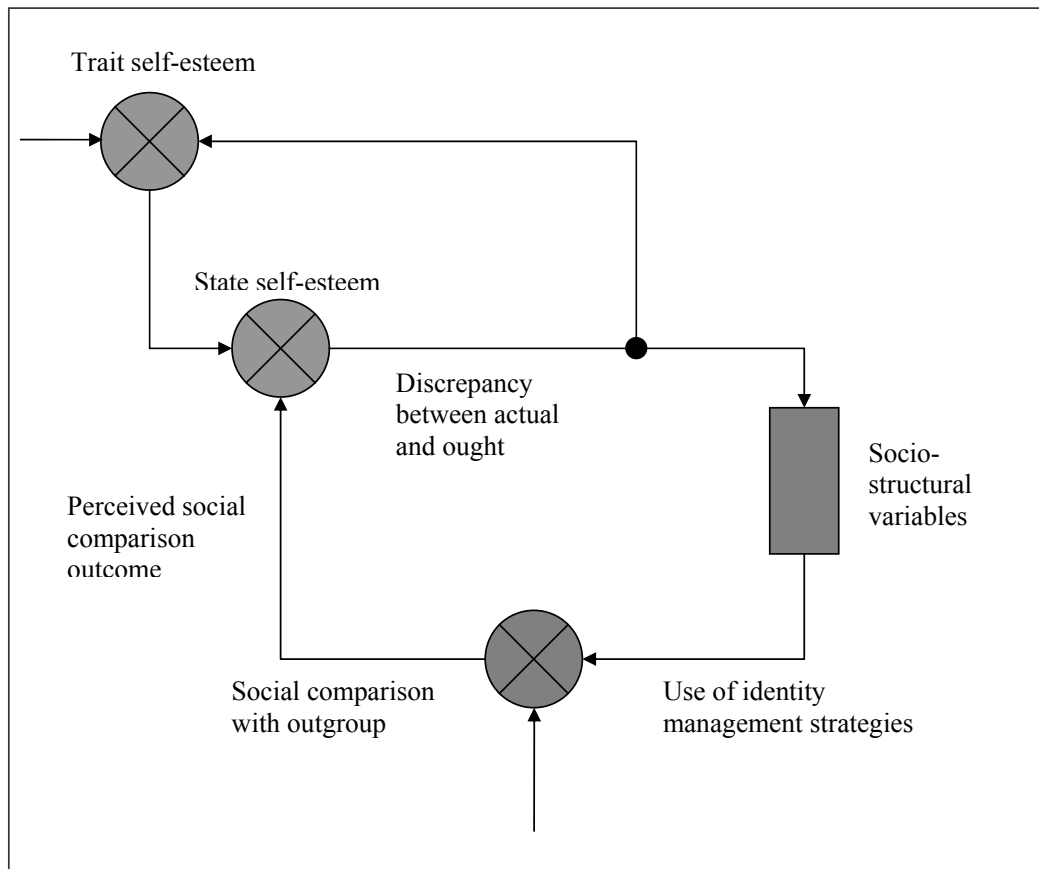


Figure 1. The Dynamic Approach to Motivational Processes of Social Identity Theory

## 4. Research Hypotheses

### 4.1. Specific Research Hypotheses for the First Research Line

In the first research line I am interested in the interaction of group-based self-esteem and threatening information, and its effect on two different identity management strategies. I extend the work by Ellemers et al. (1997) by manipulating social identity threat so that I can examine the direct effects of threat on the deployment of individualistic and collective identity management strategies, always also taking (high) group-based self-esteem into account.

On the one hand, I postulate that group members high in group-based self-esteem are likely to show social competition when being threatened by an outgroup. I assume that this is the case because group members having a high group-based self-esteem have a strong and very positive connection with their group. Whenever they receive negative information about their ingroup it is likely they will be motivated to increase their group status as a whole because in their opinion their 'real' group status is high. Therefore, it seems more likely that these group members will favor a collective strategy, trying to enhance the evaluation of the whole group, compared to an individual strategy that would only enhance their personal status. Moreover, I assume that negative emotions play an important mediating role in the relation between high group-based self-esteem, threat, and the motivation to deploy social competition. In particular, I hypothesize that when group members high in group-based self-esteem receive threatening information from an outgroup they will not agree to these information and therefore regard them as illegitimate. The experience of illegitimacy should go along with anger (Mummendey, Kessler, et al., 1999; Smith, Cornin, & Kessler, 2008; Smith & Ortiz, 2002).

In support of this assumption, Mummendey, Kessler and colleagues (1999) demonstrated the importance of negative emotions for individuals choosing social competition as identity management strategy. The authors compared the predictions of social identity theory (Tajfel & Turner, 1979) to the predictions of relative deprivation theory (RDT; Crosby, 1976, 1982; Folger, 1986) concerning preferences for identity management strategies. After testing both models separately, the integration of the two theoretical models showed that besides the socio-structural variables used as predictors, identification and anger were significant mediators. Although all investigated variables

together explained only a small amount of variance for individual mobility (11%), they explained a satisfying amount of variance for social competition (38%; for more details see also Mummendey, Klink et al., 1999). Therefore I assume that the relation between threatened group-based self-esteem and social competition is mediated by anger.

On the other hand, I postulate a different process for group members low in group-based self-esteem. Concerning group members low in group-based self-esteem two competing hypotheses seem plausible: Individuals not valuing their group membership might show an increased motivation to leave the group when receiving threatening information. This effect was shown by Ellemers and colleagues (Ellemers et al., 1997), and is in line with the work on image-maintenance processes (e.g., Boen et al., 2002; Cialdini et al., 1976; Snyder, Lassegard, & Ford, 1986). Snyder and colleagues argued that people tend to increase their association with others whenever these others are successful, however, when they are not successful people tend to distance themselves from them. The motivation of group members low in group-based self-esteem to leave the group might arise because they do not value their group membership, are not committed to the group, and are not willing to show any effort to change the image of the whole group. Thus, when they receive threatening information they will not be motivated to deploy a collective strategy which might include costs for them. Therefore, they prefer to choose an individual strategy in form of leaving their group and joining the higher status group, increasing their personal status, but without changing the status of the whole group.

However, in contrast to the just outlined hypothesis, individuals low in group-based self-esteem might be not willing to leave their group and join a high status group when confronted with threatening information about their group. This assumption is in line with realistic conflict theory (Campbell, 1965; Sherif, 1966). Several studies investigating a variety of groups found that the more group members of devaluated groups recognized prejudice against their group, the more they identified with their group (e.g., Chavira & Phinney, 1991; Cozzarelli & Karafa, 1998). This means that perceiving threat can lead to an increased identification and an increased importance of group membership. Then, the motivation to leave the group should decrease.

I assume that which of the two processes takes place depends on the investigated intergroup setting. While in minimal groups the first process seems to take place (Ellemers et al., 1997, Study 1), in daily life groups<sup>6</sup> with a collective history it is more likely that the

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<sup>6</sup> In the following I refer to groups existing in society (e.g., national groups, religions) as 'daily life groups'. These daily life groups are compared to artificial/minimal groups only existing in experimental situations.

importance of group membership increases after being threatened. In the later case, the groups have a meaning for their members; therefore the importance of group membership should increase after receiving threatening information and individual mobility is no longer an option for group members low in group-based self-esteem.

#### ***4.1.1. Overview and Hypotheses Studies 1 to 3***

Taken together, I examined the following hypotheses: 1) Threatened high group-based self-esteem will promote the use of social competition. Concerning individual mobility I tested two competing hypotheses: 2a) Group members with initially low group-based self-esteem are going to show an increased tendency to leave the group after their group is threatened or 2b) Group members having initially low group-based self-esteem will show a reduced tendency to leave their group after their group is threatened. 3) Furthermore, I postulated that the relation between threatened high group-based self-esteem and social competition is mediated by anger.

The outlined hypotheses were tested in three studies. The first study was a laboratory study, methodologically based on Study 1 by Ellemers et al. (1997). Within the first study, social identity threat was induced by negative performance feedback. The second study was a questionnaire study inducing social identity threat as discrimination of an outgroup towards an ingroup. The third study was a questionnaire study where all participants were placed in a situation of social identity threat. This study was conducted to examine the underlying process of the relationship between evaluative identification and social competition when perceiving social identity threat.

#### **4.2. Study 1**

An initial study was conducted to test the postulated interaction between group-based self-esteem and threat on the use of two identity management strategies. I extended Study 1 by Ellemers et al., (1997) by manipulating threat and measuring both individual mobility and social competition as dependent variables using daily life groups, rather than artificial groups. I tested the postulated hypothesis 1 that threatened group-based self-esteem promotes the use of social competition. Moreover, I investigated the two competing

hypotheses (2a and 2b) concerning individual mobility: Either the negative relation between group-based self-esteem and individual mobility increases in the threat condition or the negative relation between group-based self-esteem and individual mobility is only going to be found in the no threat condition.

#### **4.2.1. Method**

*Participants and design.* The study was conducted in the psychological laboratory of one of the main buildings of the University of Jena. I recruited 67 students from the University of Jena. The sample included 40 women and 27 men whose mean age was 23.1 years ( $SD = 2.7$ ) with a range from 19 to 32. In the experiment one measured factor (high vs. low group-based self-esteem) and one experimentally manipulated factor (threat vs. no threat) were used. The participants were randomly assigned to one of the two experimental conditions.

*Procedure.* Students walking through the main University building were approached by a female research assistant and were asked to participate in the study. When the participants agreed to participate they were lead to the laboratory. There they were seated in one cubical each in front of a computer. All information was given on the computer screen.

First, the participants read the general instructions including the cover story, which said that they were participating in a study on the performance in verbal intelligence tests of students from different European countries. Then they filled in the collective self-esteem and evaluative identification scale, measuring their identity and esteem as German students. Afterwards, the participants were told that they next would work on a task measuring verbal intelligence. Within the task they had to generate as many meaningful words from a letter string as possible. Each letter string was composed of eight randomly chosen letters. For working on each letter string they had one minute time. They had to work on 10 letter strings in total. After working on the task, the participants read a short note about the performance of German students compared to students from other European countries. In the threat condition, the participants read that the first results of the study showed that German students performed worse in this verbal intelligence test than the mean of European students. The text indicated that the performance of German students is within the lowest third of the total range. In the no threat condition the participants were

told that the performance of the German students is within the best third of the total range. It was not made explicit if the performance of the participants was already included into these results.

Then the participants were asked to fill in the second part of the questionnaire, including perceived threat, and the items of the identity management strategies. After finishing the demographic questionnaire the participants were compensated with three Euros, debriefed, thanked, and dismissed.

*Questionnaires.* Participants completed a pretest questionnaire including collective self-esteem and the evaluative dimension of identification with the ingroup. The collective self-esteem scale was based on the State Self-Esteem Scale by Heatherton and Polivy (1991). I used the performance (e.g., “I think that we are inferior to others at the moment”) and the social subscale (e.g., “I think that other groups like us.”) and reformulated the items in terms of groups. I built two different versions of the self-esteem scale, each using half of the available items. Which half was used was randomized within each condition. Both halves of the collective self-esteem scale consists of 6 items ( $\alpha = .77$ ;  $\alpha = .73$ ). The identification scale consisted of five items ( $\alpha = .91$ ), all five items measuring the evaluative aspect of identification (e.g., “I am happy to be a member of the group.”)<sup>7</sup>. All responses ranged from 1 to 7 (anchored at *I strongly disagree* and *I strongly agree*)<sup>8</sup>.

At the end of the experiment the participants were asked to fill in three items measuring individual mobility (e.g., “If I had the possibility, I would immediately change to an university in another European country.”;  $\alpha = .86$ ) and three items measuring social competition (e.g., “We will show the other European students that we are the smarter ones.”;  $\alpha = .81$ ). Both scales were adapted items derived from Mummendey, Kessler et al. (1999). I also included three items measuring perceived threat (e.g., “I feel threatened by the results of the study and its consequences for my group.”;  $\alpha = .67$ ). To avoid response sets about one third of the items in each scale were framed negatively. Again, all responses ranged from 1 to 7 (anchored at *I strongly disagree* and *I strongly agree*).

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<sup>7</sup> Note, the measurement of evaluative identification on a group level is similar to the Rosenberg Self-Esteem Scale (Rosenberg, 1965).

<sup>8</sup> An exploratory factor analysis confirmed that collective self-esteem and evaluative identification were different, however, correlated ( $r = 0.42$ ), concepts: 2 factors explained 62.41% of the variance. The first factor included the items measuring evaluative identification (loadings  $> 0.70$ ) and the second factor included the items measuring collective self-esteem (loadings  $> 0.58$ ).

#### 4.2.2. Results

*Checks and data screening.* Before conducting the analyses, the data of seven participants were excluded, who guessed parts of the hypotheses, were not students at the University of Jena, or did not speak German fluently. The data of 60 participants remained for analyses. The manipulation check showed a significant effect of the threat manipulation on perceived threat,  $t(58) = 5.37, p < .01$ . Participants in the threat condition ( $M = 3.82; SD = 1.23$ ) felt more threatened than participants in the no threat condition ( $M = 2.38; SD = 0.85$ ).

*Identity Management Strategies.* Table 1 presents correlations between the predictors and the identity management strategies in each condition. Concerning social competition I found the predicted pattern: In the no threat condition I found neither for collective self-esteem nor for evaluative identification a significant relation to social competition. However, in the threat condition both variables, collective self-esteem and evaluative identification, showed a moderate positive correlation with social competition. Regarding individual mobility I found the following pattern: In the no threat condition, collective self-esteem was significantly negatively correlated with the motivation to leave the group, whereas in the threat condition this relation was not significant. The relation between evaluative identification and individual mobility was similar, however, only marginal significant. Not surprisingly, in both conditions identification and collective self-esteem were significantly correlated.



Table 1. Intercorrelations Between Predictors and Dependent Variables in Both Conditions (Study 1).

Scales	1	2	3	4
No threat ( $n = 32$ )				
1. Coll. self-esteem	-	.64**	.08	-.40*
2. Identification		-	.28	-.29†
3. Social competition			-	.31†
4. Individual mobility				-
Threat ( $n = 28$ )				
1. Coll. self-esteem	-	.70**	.38*	.04
2. Identification		-	.37*	.18
3. Social competition			-	.02
4. Individual mobility				-

† $p \leq .10$ . \* $p \leq .05$ . \*\* $p \leq .01$ .

*Social competition.* In the next step, I tested the found patterns of the correlational analyses with regression analyses. I postulated that the more positive the group-based self-esteem (collective self-esteem and evaluative identification) of the participants in the threat condition is, the higher their desire to show a competitive reaction to this threat should be. Before running the regression analyses all continuous predictors were z-standardized (Aiken & West, 1991).

The first regression analysis investigated the effect of the collective self-esteem, threat, and their interaction (Aiken & West, 1991), controlling for effects of the different versions of the self-esteem scale and its interaction with the other independent variables, on social competition. This regression was not significant,  $F(7,52) = 1.37, p = .24$ . The regression coefficient for collective self-esteem was marginally significant ( $\beta = .27, p = .06$ ). No other effects were significant. Even though the interaction ( $\beta = .16, p = .23$ ) between collective self-esteem and threat only approached significance, I used the simple slopes method (Aiken & West, 1991) to investigate whether the patterns found in the correlation analysis were supported. As postulated, by trend participants high in collective

self-esteem wanted to show more social competition the more threatened they were ( $\beta = .28, p = .14$ ), compared to participants low in collective self-esteem ( $\beta = -.06, p = .77$ ).

Another multiple regression was computed with evaluative identification, threat, and their interaction as predictors and social competition as dependent variable. This regression was marginally significant,  $F(3,56) = 2.51, p = .07$ , and explained about 12% of the variance. The regression coefficient for evaluative identification was significant ( $\beta = .32, p < .01$ ). No further predictors or interactions were significant. Because the relation between evaluative identification and social competition dependent on the experimental condition within the correlational analysis was not as clear as for collective self-esteem, I did not compute simple slopes.

*Individual Mobility.* Then I tested the findings of the correlational analyses with regression analyses for individual mobility. I postulated that either the more negative participants' group-based self-esteem in the threat condition is, the more the participants should show the motivation to leave their group, or that the negative relation between group-based self-esteem and individual mobility exists only if the group is not threatened. However, after being threatened this relation should disappear.

A multiple regression analysis was computed with collective self-esteem, threat and their interaction (Aiken & West, 1991) as independent variables, controlling for effects of the used half of the self-esteem scale on social competition and its interaction with the other independent variables, and individual mobility as dependent variable. This regression was marginal significant,  $F(7,52) = 2.01, p = .07$ , and accounted for about 21% of the variance. The regression coefficient for collective self-esteem was significant ( $\beta = -.29, p = .04$ ), however, this was qualified by a marginally significant interaction between collective self-esteem and threat ( $\beta = .23, p = .10$ ) and a marginally significant interaction between the used collective self-esteem scale and collective self-esteem ( $\beta = -.25, p = .06$ ). No other effects were significant. I used the simple slopes method (Aiken & West, 1991) to further investigate the relation between collective self-esteem and threat. The analysis showed that for participants high in collective self-esteem threat did not have an influence on their motivation to leave the group ( $\beta = .18, p = .34$ ). However, participants low in collective self-esteem showed a marginally significant decrease in their motivation to leave the group when they were threatened ( $\beta = -.33, p = .09$ ).

Another multiple regression analysis for individual mobility as dependent variable was computed with evaluative identification, threat and their interaction as predictors. This regression was not significant,  $F(3,56) = 1.38, p > .05$ . However, the interaction between

evaluative identification and threat again was marginally significant ( $\beta = .23, p = .08$ ). Again, I used the simple slopes method (Aiken & West, 1991) to investigate the interactive patterns. The analysis showed that for participants high in evaluative identification threat did not have an influence on their motivation to leave the group ( $\beta = .17, p = .37$ ). However, participants low in evaluative identification showed a marginally significant decrease in their motivation to leave the group when they were threatened ( $\beta = -.30, p = .10$ ; see Figure 2).

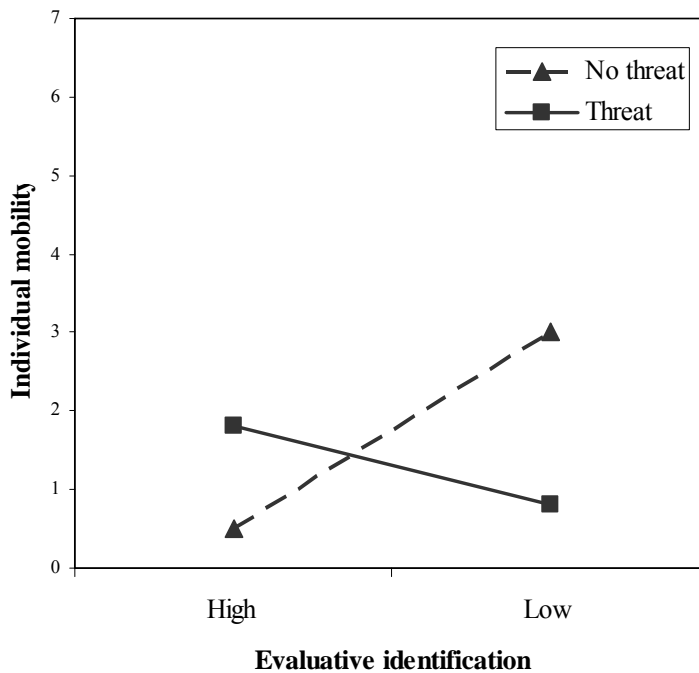


Figure 2. Simple Slopes for the Interaction of Evaluative Identification and Threat on Individual Mobility (Study 1).

#### 4.2.3. Discussion

In general the results of the first study are consistent with my hypotheses. I argued that only the relation stated in second part of the self-esteem hypothesis (SEH2) presented by Abrams and Hogg (1988) exists (threatened high self-esteem will promote intergroup bias) and that SEH2 can be extended to the use of identity management strategies in general. Focusing on social competition, the results broadly supported my first hypothesis:

The more positive group members see their ingroup the more likely it is that they will react with social competition after receiving threatening information. This means that, in line with my argument, this positive group perception (i.e., group-based self-esteem) may serve as a standard to which incoming appraisals of group related events (here: social comparison outcomes) are compared. In Study 1, the threat manipulation led to a negative discrepancy with the standard for all participants high in group-based self-esteem. In order to cope with this negative discrepant event and to re-establish the positive group perception, group members reported the motivation to show social competition with the outgroup. However, the results concerning social competition were not very strong and did not always reach significance in the regression analysis. This might be due to sample size. Hence, to strengthen support for my hypothesis, it seemed necessary to replicate these findings in another study.

Concerning individual mobility I tested two competing hypotheses. I postulated that either in line with a social identity approach (e.g., Tajfel & Turner, 1979; Ellemers et al., 1997) receiving threat would increase the negative relation between group-based self-esteem and the motivation to leave the group (hypothesis 2a) or that in line with the realistic conflict theory (e.g., Sherif, 1966) receiving threat would decrease the relation between group-based self-esteem and individual mobility (hypothesis 2b). The results of Study 1 clearly supported hypothesis 2b. Whereas in the no threat condition the negative relation between group-based self-esteem and individual mobility was found, in the threat condition this relation disappeared. This means that as long as group members receive neutral and positive information about their group, the less they value their group, the more they want to leave the group. However, as soon as the group members receive negative (threatening) information about their group, the relation between group-based self-esteem and the motivation to leave the group disappears: specifically, it seems that members low in group-based self-esteem tempered their initial desire for individual mobility when the group was threatened. It therefore seems that the threat changes the perception and meaning of the group. I assume that threat increases the importance of group membership and that therefore the negative relation between group-based self-esteem and individual mobility disappears. However, even though the interaction between threat and group-based self-esteem on individual mobility was clearly visible in the data of Study 1, the results were also not very strong. For this reason, and to test the hypothesis that threat changes the affiliation towards the ingroup a further study was conducted.

Moreover, the introduction of group-based self-esteem as a broad construct subsuming collective self-esteem and the evaluative dimension of identity was justified empirically. Although the two variables loaded on two different factors (see Footnote 7), they showed a moderate positive correlation and reacted in the same way to the (threat) manipulation. On the one hand, this clearly supports the distinction between them; on the other hand, it justifies the interpretation of these two variables as subfacets of the broader construct of group-based self-esteem.

In line with Study 1 by Ellemers et al. (1997), I induced social identity threat in Study 1 by giving participants negative performance feedback. In the second study I decided to use a different manipulation of social identity threat to test my hypothesis. I induced threat by giving information that an outgroup discriminates against an ingroup. I intentionally avoided a situation within which real status differences are established and I intended to create a situation within which subjectively negative information about the ingroup is received.

### **4.3. Study 2**

In a second study I wanted to replicate the found relation between group-based self-esteem and social competition. Concerning individual mobility, I also wanted to replicate the results from Study 1. I further tested whether the threatening information changed the affiliation of the group members towards their group. Therefore, in the second study one item measuring the importance of the group membership was included before and after the manipulation. Furthermore, I changed the cover story in a way that the social identity threat was not due to real status differences. In the second study threatening information was induced by a faked newspaper article within which an outgroup discriminated against the ingroup.

#### **4.3.1. Method**

*Participants and design.* The questionnaire study was conducted in the foyer of one of the main buildings of the University of Jena. In this study 109 students from the University of Jena participated. They received one bar of chocolate for participating. The

sample included 56 women and 53 men whose mean age was 22.3 years ( $SD = 3.1$ ) with a range from 19 to 36. In the experiment one measured factor (high vs. low group-based self-esteem) and one experimentally manipulated factor (threat vs. no threat) were used. The participants were randomly assigned to one of the experimental conditions.

*Procedure.* The students walking through the Foyer were approached by a female research assistant and were asked to participate in the study. When the participants agreed to participate they were randomly assigned to one of the two conditions and were seated at a separate table each.

First, they read the general instructions including the cover story, according to which the study examined the students' satisfaction with their university. After reading the general instructions the participants filled in the collective self-esteem scale and the evaluative identification scale, measuring the evaluative identification and esteem as East German students, and one item measuring the importance of group membership.

Afterwards they read a faked newspaper article. In the threat condition, the participants read that a new representative study had been conducted among German employers. This study showed that all German employers prefer employing graduate students from South German universities, compared to graduate students from East German universities. The article discussed that employers perceive the students from South German universities to be better educated and more strongly achievement motivated than their colleagues from East German universities. The article in the control condition indicated that German employers do not have any regional preferences.

After reading the faked newspaper articles, the participants were asked to fill in the second questionnaire, including perceived threat, the items of the identity management strategies, and the one item measuring of importance of group membership. After finishing the demographic questionnaire the participants were compensated with a bar of chocolate, debriefed, thanked, and dismissed.

*Questionnaires.* Mostly the same questionnaires were used as in Study 1: The collective self-esteem scale ( $\alpha = .74$ , for both halves), evaluative identification ( $\alpha = .75$ ), perceived threat ( $\alpha = .74$ ), individual mobility ( $\alpha = .88$ ), and social competition ( $\alpha = .74$ ). Before and after the threat manipulation one item was included to measure the importance of group membership (e.g., "To be a member of this group is an important part of my personality"). Again, all responses ranged from 1 to 7 (anchored at I strongly disagree and I strongly agree).

#### 4.3.2. Results

*Checks and data screening.* Before conducting the analyses, the data of eight participants were excluded, who guessed parts of the hypotheses, were not students at the University of Jena, or did not speak German fluently. The data of 101 participants remained for analyses.

The manipulation check showed a significant effect of the threat manipulation on perceived threat,  $t(99) = 3.55, p < .01$ . Participants in the threat condition ( $M = 4.02; SD = 0.92$ ) felt more threatened than participants in the no threat condition ( $M = 3.29; SD = 1.13$ ).

*Identity Management Strategies.* Table 2 presents correlations between the predictors and the identity management strategies. In the no threat condition, neither collective self-esteem nor evaluative identification is related to social competition. However, in the threat condition there is a significant positive relationship between evaluative identification and social competition. The relation between collective self-esteem and social competition in the threat condition is low and not significant, however, also positive. Similar to Study 1, the relation between group based self esteem (i.e., evaluative identification and collective self-esteem) and individual mobility are negative in the no threat condition and non-significant in the threat condition. Thus, group members may leave their group depending on their group based self esteem under no threat but when their group is threatened this relation disappears.

Table 2. Intercorrelations Between Predictors and Dependent Variables in Both Conditions (Study 2).

Scales	1	2	3	4
No threat ( $n = 50$ )				
1. Coll. self-esteem	-	.67**	-.07	-.32*
2. Identification		-	.05	-.53**
3. Social competition			-	.13
4. Individual mobility				-
Threat ( $n = 51$ )				
1. Coll. self-esteem	-	.24†	.14	-.13
2. Identification		-	.42**	.04
3. Social competition			-	.27†
4. Individual mobility				-

† $p \leq .10$ . \* $p \leq .05$ . \*\* $p \leq .01$ .

*Social competition.* In the next step, I tested the correlational patterns with regression analyses. Again, I postulated that the more positive the participants' view of the ingroup, the stronger should be their desire to show social competition when their social identity is threatened. Following the procedure used in Study 1, I calculated multiple regression analyses for collective self-esteem and evaluative identification, threat and their interactions as independent variables. Again, all continuous predictors were z-standardized before running the analyses (Aiken & West, 1991).

The first regression analysis investigated the effect of collective self-esteem, threat and its interaction, controlling for effects of the used half of the self-esteem scale and its interaction with the other independent variables, on social competition. This regression was not significant,  $F(7,93) = 0.57, p = .76$ . No regression coefficient was significant.

Another multiple regression was computed with evaluative identification, threat and their interaction as predictors. This regression was significant,  $F(3,97) = 3.83, p = .01$ , and accounted for about 11% of the variance. The regression coefficient for evaluative identification ( $\beta = .24, p = .02$ ) was significant. However, this was qualified by a significant interaction between evaluative identification and condition ( $\beta = .19, p = .05$ ) on



social competition. I used the simple slopes method (Aiken & West, 1991) to further investigate the results. As predicted, participants high in evaluative identification reported the motivation to show more social competition when they were threatened ( $\beta = .30, p = .03$ ). However, for participants low in evaluative identification threat did not have an effect on their motivation to show social competition ( $\beta = -.09, p = .52$ ; see Figure 3).

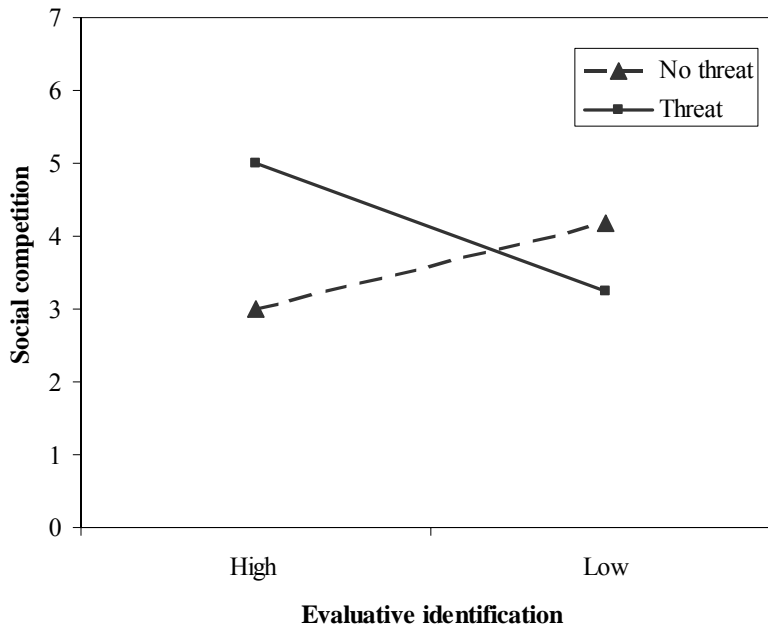


Figure 3. Simple Slopes for the Interaction of Evaluative Identification and Threat on Social Competition (Study 2).

*Individual Mobility.* Then, I tested the findings of the correlational analysis with regression analyses for individual mobility. I postulated in line with the results of Study 1 that the negative relation between group-based self-esteem and individual mobility does only exist, if the group is not threatened. However, after being threatened this relation should disappear.

A multiple regression analysis was computed with collective self-esteem, threat and their interaction (Aiken & West, 1991) as independent variables, controlling for effects of the used half of the self-esteem scale and its interaction with the other independent variables, and individual mobility as dependent variable. This regression was not

significant,  $F(7,93) = 1.55, p = .16$ . Only the regression coefficient for collective self-esteem was significant ( $\beta = -.29, p < .01$ ).

Another multiple regression analysis for individual mobility as dependent variable was computed with identification, threat and their interaction as predictors. This regression was significant,  $F(3,97) = 5.84, p < .01$ , and accounted for about 15% of the variance. Again, the regression coefficient for identification was significant ( $\beta = -.26, p < .01$ ), however, in line with my prediction the main effect was qualified by a significant interaction between identification and condition ( $\beta = .30, p < .01$ ). I used the simple slopes method (Aiken & West, 1991) to investigate the interactive patterns. The analysis showed that for participants high in evaluative identification threat had a positive effect on their motivation to leave the group ( $\beta = .26, p = .05$ ). However, participants low in evaluative identification showed a significant decrease in their motivation to leave the group when they were threatened ( $\beta = -.33, p = .01$ ).

*Change in the importance of group membership.* To test the prediction that threat had an effect on the importance of group membership, I computed a repeated measures ANOVA on the one item measuring the importance of group membership with time (before and after the manipulation) as within subject factor and condition as between subject factor. There was a main effect of time,  $F(1, 99) = 38.65, p < .01$ ; qualified by a marginally significant interaction between time and condition,  $F(1,99) = 3.54, p = .06$ . For means and standard deviation see Table 3. As predicted, the importance of the group membership increased from pretest to posttest more for those participants being threatened compared to participants in the no threat condition.

Table 3. Means and Standard Deviation of Pre- and Posttest Importance of Group Membership for Both Conditions (Study 2).

Importance of Group	Mean	Standard deviation	Mean	Standard deviation
	Threat ( $n = 50$ )		No threat ( $n = 51$ )	
Pretest	2.50	1.33	2.70	1.62
Posttest	4.04	1.79	3.54	1.66

### 4.3.3. Discussion

The results of Study 2 again supported my predictions and replicated the found patterns of Study 1 using a different kind of threat manipulation. As in Study 1, the higher participants' evaluative dimension of identification was, the stronger they wanted to show social competition when receiving negative information about their group. However, these findings could not be replicated for collective self-esteem. Overall the results supported the assumption of an interaction between group-based self-esteem and threat on competitive identity management strategies. Group members liking and valuing their group seemed to be extremely vulnerable to threatening information and therefore show an increased motivation to show competing behavior against the outgroup whenever receiving threat.

As in Study 1, the results of Study 2 regarding individual mobility were in line with the second competing hypothesis (2b). Participants low in group-based self-esteem did not want to leave their group anymore after being threatened. For participants high in group-based self-esteem the motivation to leave the group was not related to threat. More precisely, participants high in evaluative identification even showed a slightly increased motivation to leave the group when threatened. Again, the pattern of results pointed in the same direction for both variables (collective self-esteem and evaluative identification), however, the results were clearly stronger for evaluative identification.

Moreover, in Study 2 I was interested in the reasons for the disappearance of the negative relation between group-based self-esteem and individual mobility in the threat condition. I had suggested that this was the case because of the change of the importance of group membership which I believed was due to the threatening information the participants received. In line with my reasoning, the results of Study 2 give first evidence that threat induced an increase in the importance of group membership. This means, that following the perspective of realistic conflict theory (e.g., Bornstein, 1992; Sherif, 1966) threatening information about the ingroup can lead to an overall stronger feeling of importance of group membership and therefore the negative relation between group-based self-esteem and the motivation to leave the group disappeared. In contrast to the findings by Ellemers et al. (1997) threat did not increase the motivation to leave the group. This might be due to the fact that unlike Ellemers and colleagues, I investigated daily life groups having a history and a meaning to the group members. Ellemers and colleagues showed that members of minimal groups tend to leave the group when they are threatened and have a low level of group-based self-esteem. However, when a daily life group is

threatened then the process to leave the group as soon as possible does not seem to be the dominant strategy. Unfortunately at this point in time I do not know which identity management strategy group members with low group-based self-esteem chose as a reaction to perceived threat. This question has to be answered in further research. However, my results did show that the induced threat made the group more salient and important. But, it has to be kept in mind that the results of Study 2 supporting this hypothesis have to be seen as preliminary data, which need to be replicated in further studies.

#### **4.4. Study 3**

A third study was carried out to investigate the underlying mechanism between group-based self-esteem and social competition under social identity threat. In addition to the outlined and already investigated hypotheses, I predicted that social identity threat should lead to an increase in anger especially among those high in group based self-esteem. In line with the findings by Mummendey, Kessler et al. (1999), I predicted that anger is a mediator of the relation between group-based self-esteem and the motivation to deploy social competition whenever individuals perceive an intergroup context as threatening (hypothesis 3). To investigate this hypothesis I conducted a questionnaire study measuring evaluative identification with the ingroup, anger, and the motivation to deploy social competition in a situation designed to provoke feelings of social identity threat.

##### **4.4.1. Method**

*Participants and design.* The questionnaire study was conducted at the end of a lecture. In total 228 students participated. The sample included 171 women and 57 men whose mean age was 21.9 years ( $SD = 3.4$ ) with a range from 18 to 42. All participants were from East Germany. Social identity threat was induced to all participants.

*Procedure.* The questionnaire study was conducted within a lecture “Introduction in Social Psychology” at the University of Dresden. The students were asked to fill in the questionnaire at the end of the lecture on a voluntary basis. Threat was induced by making the comparison between East and West Germany salient. As Mummendey, Kessler et al. (1999) outlined West Germans are highly salient and relevant as a reference group for East

Germans and the comparison outcome is negative for East Germans. Mummendey et al. (1999) reported that within a questionnaire 75% of the sample agreed to the statement that for the near future East Germans would be “second-class citizens” (Spiegel-Redaktion, 1995; see also Uhlmann, 2007).

*Questionnaires.* In the third study the main variables of interest were evaluative identification ( $\alpha = .82$ ), anger ( $\alpha = .83$ ), and social competition ( $\alpha = .73$ ). For these variables mostly the same questionnaires were used as in Study 1 and 2. However, instead of measuring evaluative identification and collective self-esteem this time only evaluative identification was measured. Perceived threat ( $\alpha = .89$ ) in form of discrimination against East Germans was measured as manipulation check to make sure that the participants all perceived social identity threat. Again, all responses ranged from 1 to 7 (anchored at *I strongly disagree* and *I strongly agree*).

#### 4.4.2. Results

*Checks and data screening.* The manipulation check showed that the mean of social identity threat (operationalized as perceived discrimination) of the ingroup ( $M = 3.87$ ;  $SD = 1.11$ ) was significantly different from the theoretical midpoint of the scale ( $M = 3.50$ ),  $t(227) = 5.03$ ,  $p < .01$ . This means that making the comparison between East and West Germans salient overall led to social identity threat for the majority of the East German participants (75 % of the participants ticked  $\geq 3.00$ ).

*Mediation analysis.* The mediation model was estimated using Maximum Likelihood in AMOS 16. The standardized effect of evaluative identification on anger was significant ( $\beta = .27$ ,  $p < .01$ ), the effect of anger on social competition was significant ( $\beta = .76$ ,  $p < .01$ ) and direct effect of evaluative identification on social competition ( $\beta = .21$ ,  $p < .01$ ) was significant when not taking anger into account. However, after including anger it was not significant anymore ( $\beta = .01$ ,  $p = .79$ ). The 95%-confidence intervals were estimated using 2000 bootstrap samples, and indicate a significant difference of the indirect effect from zero (standardized indirect effect: .19; lower bounds: .10; upper bounds: .29; using bias-corrected bootstrap confidence intervals). To test the hypothesis of complete mediation the direct effect was constrained to zero, resulting in a non-significant reduction of the model fit ( $\Delta\chi^2(1, N = 228) = .095$ ,  $p = .76$ ), thereby supporting the hypothesis of complete mediation.

#### 4.4.3. Discussion

The results of Study 3 showed that the relation between evaluative identification and social competition was mediated by anger when group members experienced social identity threat. In line with my predictions and the findings of Mummendey, Kessler et al. (1999) group members who identified strongly with their ingroup felt angry after receiving negative information about the ingroup. This anger led to the motivation to deploy a competitive identity management strategy, in my studies social competition. Even though the results of Study 3 strongly supported the assumption of a full mediation of anger, it has to be kept in mind that in the third study social identity threat was not manipulated, however, only induced to all participants by making West Germany as reference point for social comparison salient. Therefore, it seems necessary for further research to examine the relationship between identification, anger and social competition in a more controlled experimental paradigm. Moreover, in the third study individual mobility was not taken into account. In further studies following the procedure from Study 1 and 2, both social competition and individual mobility should be investigated at the same time. This would allow a direct comparison of the underlying processes of the two identity management strategies.

#### 4.5. General Discussion of the First Research Line

Taking the results of the three presented studies together I can conclude that the first hypothesis (1) *“Threatened high group-based self-esteem will promote the use of social competition”* was supported empirically. The first and the second study found that group members having high group-based self-esteem showed a stronger desire for social competition after being threatened compared to group members having low group-based self-esteem. Moreover, the results from Study 3 together with the findings by Mummendey, Kessler et al. (1999) support the assumption that this relation is mediated by anger (hypothesis 3). However, the presented studies give first evidence. Further research should replicate these results and investigate the role of anger in a more controlled setting.

Regarding individual mobility, the second competing hypothesis (2b) was supported empirically by Study 1 and 2: *Group members having low group-based self-esteem showed a decreased motivation to leave their group after being threatened.* Only

when receiving not threatening information there was a negative relation between group-based self-esteem and individual mobility. The results of the second study give first evidence that the relation between group-based self-esteem and individual mobility in the threat condition might be due to the increased importance of group membership after receiving threatening information. This is in line with assumptions from the realistic conflict theory (e.g., Sherif, 1966). However, the results are opposite to the results of earlier studies (e.g., Ellemers et al., 1997). I assume that this is the case because in contrast to Ellemers and colleagues I investigated daily life groups. Even if group members do not value their group much, it might be the case that when their group is threatened this motivates them to react in a defensive way. The results from Study 1 and Study 2 point in that direction, however, the presented results and the underlying process should be explored further. It would be especially interesting to investigate which identity management strategy group members low in group-based self-esteem choose after being threatened.

Moreover, a further inspiring research question is the effect of threat and group-based self-esteem on identity management strategies other than individual mobility and social competition. The presented research was limited to these two strategies. However, in further research also the various forms of social creativity should be taken into account.

Further research should also investigate the role of socio-structural variables comparing threatened and not threatened groups. It is well known (e.g., Ellemers, 1993; Ellemers et al., 1993) that socio-structural variables play an important role for the choice of identity management strategies. However, in the presented studies the role of socio-structural variables was not taken into account. Therefore, it seems necessary to investigate the role of socio-structural variables while manipulating social identity threat.

The introduction of group-based self-esteem as a broad construct subsuming collective self-esteem and the evaluative dimension of identity was justified empirically in the first two studies. On the one hand, both operationalizations correlated moderately so that there seems to be an overlap between the two variables. On the other hand, the interaction effects of both variables with threat always were in the same direction, even though they were not always equally strong. The fact that the two variables correlate and react in the same way to the manipulation clearly supports the interpretation of the two variables as subfacets of the broader construct of group-based self-esteem.

In sum, the presented results supported my argument that it is not low self-esteem but threatened high group-based self-esteem that motivates the use of competitive identity

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management strategies. A positive perception of one's ingroup was reflected in higher group-based self-esteem (Ellemers et al., 1999). This positive group perception (i.e., group-based self-esteem) seemed to serve as a standard to which incoming appraisals of group related events were compared. Whenever these events were negatively discrepant to this group members became active by choosing competitive identity management strategies in order to cope with this negative discrepant event and to re-establish the positive group perception. This process was mediated by anger. However, the results concerning individual mobility seem to support that the presented relation is only true for competitive identity management strategies, not for individual mobility. Group members who did not value their group were more likely to leave their group when they were not threatened compared to when they are threatened. In my eyes these results provide additional insight into the recently growing work on group-based self-regulation (Sassenberg & Wolpin, 2008). They show nicely that the reactions to social identity threat depend on the relation an individual has towards his or her group.



#### 4.6. Specific Research Hypotheses of the Second Research Line

In the second line of research I investigated the effect of inhibiting the use of identity management strategies. To this aim it was necessary to show first that the use of identity management strategies needs cognitive resources. Therefore I replicated and extended the findings by Coull and colleagues (2001) in a first empirical step. I wanted to demonstrate that not only the protection of the ingroup against deviant ingroup members but also the protection of the ingroup against threatening information from outgroups needs cognitive resources. The motivation to manage one's social identity and therefore the needed cognitive resources to protect one's ingroup should be especially strong for group members high in group-based self-esteem.

Next, I inhibited the use of identity management strategies. Based on the procedure by Gilbert and colleagues (e.g., Gilbert et al., 1995) I induced cognitive load to inhibit the use of any identity management strategy. Gilbert and colleagues showed that cognitive load impairs participants' ability to perform mental corrections. Because group members are mentally busy through the induced cognitive load, they will not have cognitive resources left to engage in a mental correction process. Thus, implementing cognitive load should inhibit the use of identity management strategies. Following the assumptions of social identity theory (Tajfel & Turner, 1979), the inhibition of the use of any identity management strategy leads to a decrease in group-based self-esteem because the regulation processes, normally triggered by threat, are eliminated. Moreover, I argue that the decrease in group-based self-esteem goes along with an increase in negative emotions. I assume this because the experienced discrepancy between the standard and the incoming appraisal goes along with negative emotions. In line with this argument the second study by Gilbert and colleagues (1995) showed that a negative comparison outcome can influence the affective state of the participants. Thus, I assume that negative emotions can be seen as an indicator for the unsuccessful deployment of identity management strategies. This argument fits in with the basic assumptions of self-regulation theories (e.g., Carver, 2004; Carver & Scheier, 1990). I postulate that the negative feelings are normally undone when an identity management strategy is used successfully. Whenever an identity management strategy is deployed successfully this should lead to a decrease in negative emotions. As a consequence, when it is not possible to successfully manage one's social identity, then the negative emotions are not reduced and remain on a high level.

#### **4.6.1. Overview of Studies 4 to 7**

In the following section four studies (Study 4, 5, 6, and 7) will be presented. Study 4 tested the precondition of my argument: Does managing one's social identity need cognitive resources and is the amount of needed resources related to the level of group-based self-esteem? To answer this question, I replicated and extended the findings by Coull and colleagues (Coull et al., 2001) with the goal to demonstrate that the protection of the ingroup against threatening information from an outgroup needs cognitive resources, in particular for group members high in group-based self-esteem.

In a next step (Study 5, 6, and 7) I examined the effect of inhibiting identity management strategies. Based on the procedure by Gilbert and colleagues (e.g., Gilbert, Giesler, & Morris, 1995) I induced cognitive load to inhibit the use of any identity management strategy. Gilbert and colleagues showed that cognitive load impairs participants' ability to perform mental corrections. Therefore I argue that implementing cognitive load does inhibit the use of identity management strategies. I postulate that the inhibition of the use of any identity management strategy leads to a decrease in group-based self-esteem and an increase in negative emotions, especially for group members high in group-based self-esteem.

#### **4.7. Study 4**

In Study 4, I investigated the hypothesis that mental corrections need cognitive resources (Gilbert et al., 1995). In line with Coull et al. (2001), I assumed that the motivation to perform mental corrections (and use identity management strategies, respectively) should be especially pronounced for group members high in group-based self-esteem when receiving threatening information. This means I predicted an interaction between group-based self-esteem and threat on the availability of cognitive resources.

To test this hypothesis I conducted a study based on the procedure of the study by Coull and colleagues (2001). The participants worked on a dual task. In the main task participants either read neutral or threatening information. At the same time they listened to neutral information. I postulated that when participants high in group-based self-esteem read threatening information they would have less cognitive resources left to process the heard neutral information and therefore would perform worse in a following test on the

information of the secondary task compared to participants low in group-based self-esteem. However, in the condition where participants read neutral information, group-based self-esteem should not be related to the performance in the secondary task.

#### **4.7.1. Method**

*Participants and design.* The study was conducted in the psychological laboratory of one of the main buildings of the University of Jena. In this study 29 students from the University of Jena were recruited, who each received 2 Euros and a bar of chocolate for participating. The sample included 16 women and 13 men whose mean age was 22.2 years ( $SD = 2.26$ ) with a range from 19 to 26 years. In the experiment a 2 (group-based self-esteem, between: high vs. low) x 2 (valence, within: threat vs. neutral) design was used. The first factor (group-based self-esteem) was a quasi-experimental factor.

*Procedure.* Students studying business or political economics were approached when leaving a lecture by a female research assistant and were asked to participate in the study. When the participants agreed to participate they were led to the laboratory. There they were seated in one cubical each in front of a computer. All information was given on the computer screen.

First, the participants were asked to indicate whether they studied political or business economics. Then, they read the general instructions including the cover story, saying that the study was testing people's ability to form impressions based on a newspaper article. Then, the participants were asked to complete a collective self-esteem scale, measuring participant's overall evaluation of their group membership either as students of political economics or as students of business economics.

After the participants had completed the collective self-esteem scale they were told that while reading the newspaper article and forming the impression, they had to listen to an audio-taped recoding about Andorra and try to remember the given information. However, they were also told that priority should be given to the impression formation task. Participants then indicated when they were ready to work on the dual task by pressing a button to start the task. While the first section of the newspaper article was presented, simultaneously, participants listened to audio-taped information about Andorra. After reading the first section and listening to the first block of information, a screen appeared informing the participants that they should press a button as soon as they are ready to read

and listen to the second block of information. All four sections of the newspaper article and blocks of auditory information about Andorra were presented in this way. For all participants the same positive newspaper section was placed in the first and last position. The remaining positive and negative newspaper section was placed either in the second or the third position. The order of the negative newspaper section in either the second or third position was counterbalanced within conditions.

After reading and listening to all information the participants completed 32 multiple choice questions assessing the presented facts about Andorra. After finishing the demographic questionnaire the participants were compensated, debriefed, thanked, and dismissed.

*Materials and Questionnaires.* Participants completed a pretest questionnaire including collective self-esteem with the ingroup. The same collective self-esteem and evaluative identification scales were used as in Study 1.

All participants read four sections of a faked newspaper article. Each newspaper section was about 120 words long. The general topic of the article was conditions of employment for business economics compared to political economics. Each section covered one specific topic, for example, section one described the unemployment rate of business and political economics with work experiences. Three sections were neutral, stating that there are no differences between business and political economists, always drawing a positive picture of the conditions of employment. However, one section included threatening information. Within this section it was stated that the salary of the outgroup members (which group was the outgroup dependent on the membership of the participant) is about 15% higher, than the salary of the ingroup members. Furthermore, the article quoted managers of German business companies saying that the higher salary of the outgroup members was due to performance differences between the two groups. Depending on the condition the participants were in, the threatening section was either presented in the second or in the third block.

The information about Andorra was presented while the participants were reading each section of the newspaper article. During each section of the newspaper article eight facts about Andorra were presented auditory. The first block of information about Andorra included eight basic facts about Andorra (e.g., Andorra is located in the Eastern Pyrenees, between Spain and France), the second block included eight facts about the inhabitants of Andorra (e.g., Andorra has 81.222 inhabitants), the third block included eight facts about environment conditions of Andorra (e.g., One third of Andorra lies above the forest line),

and the fourth block included eight facts about Andorra's history (e.g., Andorra is independent since Charlemagne).

After reading all four sections of the newspaper article and listing to all the facts about Andorra the participants were asked to complete a multiple choice questionnaire about Andorra. In total 4 x 8 (eight per block, this means in total 32) multiple choice questions about Andorra had to be answered, one question always addressing one fact. Each multiple choice question had five answer possibilities (e.g., How many inhabitants does Andorra have? 102.013; 93.679; 81.222; 72.111; 50.432). The participants had to indicate the right answer. Furthermore, the participants were asked to answer one item measuring how much they had made an effort to work on the dual task. The response ranged from 1 to 7 (anchored at *I strongly disagree* and *I strongly agree*).

#### 4.7.2. Results

*Checks and data screening.* Before analyzing data, the data of four participants were excluded because they reported very low levels (1 or 2) on the question how much they made an effort to work on both tasks during the study. The data of 25 participants remained for analyses.

*Performance in secondary task.* Percentages of right answers per block of the Andorra multiple choice task were calculated to analyze the data of participants' performance in the auditory task. Then, the mean performance of all neutral blocks was calculated (depending on the order condition this was either the mean performance of block 1, 2, and 4 or the mean performance of block 1, 3, and 4), resulting in one variable with the mean performance of all neutral blocks for each participant. Then, the mean performance of each participant in the threatening block was calculated, again depending on order condition this was either the performance in block 2 or in block 3.

I computed a repeated measures ANOVA to test the prediction that participants high in group-based self-esteem would deploy identity management strategies when reading threatening information about their group and that they therefore would not have enough cognitive resources left to fully process the auditory information. Before running the ANOVA, I computed median splits for the collective self-esteem scale, so that it could be used as a between subject factor in the ANOVA. In the ANOVA the performance of the participants in the neutral blocks and performance of the participants in the threatening

block (valence of the blocks) was used as a within subject factor, order of the threatening block as covariate, and the median split of collective self-esteem scale as between subject factor. The interaction between the valence of the blocks and evaluative identification was significant,  $F(1,22) = 4.16, p \leq 0.05, \eta^2 = .16$ . No other effects were significant. I computed a t-test for paired samples to test for differences between low and high identifiers in the two valence conditions. The first t-test showed a significant difference between members high and low in collective self-esteem in the threat block ( $t(23) = -2.31, p = 0.03$ ), indicating that group members high in collective self-esteem ( $M = 32.69, SD = 18.07$ ) performed worse than did group members low in collective self-esteem ( $M = 51.04, SD = 21.62$ ). The second t-test did not show a significant difference between group members high and low in collective self-esteem in the neutral blocks, ( $t(23) = -0.30, p = .78$ ). Group members high in collective self-esteem ( $M = 35.58, SD = 14.59$ ) did not perform significantly worse than group members low in collective self-esteem ( $M = 37.50, SD = 17.67$ ).

Even though the predicted interaction was found, the effect was driven by the increased performance of the participants low in collective self-esteem in the threat condition and not as assumed by the decrease in performance of participants high in collective self-esteem. I assumed this to be the case because blocks 2 and 3 seemed to be easier than blocks 1 and 4. To test this hypothesis, I calculated the mean performance of participants low in collective self-esteem in the blocks 1 and 4 and in the blocks 2 and 3. Then, I computed a paired sample t-test to test the differences between blocks 1 and 4, and blocks 2 and 3. I investigated only participants low in collective self-esteem because their performance can be understood as performance baseline. Even though the paired sample t-test was not significant, ( $t(12) = -1.57, p = .15$ ), the result showed in the predicted direction. The performance of group members low in collective self-esteem in blocks 1 and 4 was lower ( $M = 37.00, SD = 18.36$ ) than their performance in the blocks 2 and 3 ( $M = 44.79, SD = 19.91$ ), meaning that blocks 1 and 4 were more difficult than blocks 2 and 3.

#### **4.7.3. Discussion**

The results of Study 4 confirmed the prediction. Group members being threatened and having a high group-based self-esteem need cognitive resources to cognitively undo the threat and restore their group-based self-esteem. Even though the results of Study 4 at

first sight seem to indicate that the effect was driven by an increased performance of the group members low in group-based self-esteem in the threat condition, further analyses showed that this actually was due to a decreased performance of group members high in group-based self-esteem. The mean difficulty of the blocks were different, blocks 2 and 3 were easier than blocks 1 and 4. Therefore the finding that the performance of group members high in group-based self-esteem in the threatening blocks was lower than the performance of group members low in group-based self-esteem indicated a decreased performance of participants high in group-based self-esteem. These results are in line with the findings by Coull and colleagues (Coull et al., 2001) showing that participants high in group-based self-esteem need cognitive resources to protect their ingroup against threatening information. I assume that this is the case because for individuals high in group-based self-esteem threat triggers the motivation to use an identity management strategy, to cope with the negative information. Participants high in group-based self-esteem in the presented study used identity management strategies when receiving threatening information and for this reason showed worse performance in the secondary task compared to the condition where they received neutral information. In the following studies I want to explore what happens, when the use of identity management strategies is impaired by cognitive load.

#### **4.8. Study 5**

The results of Study 4 showed that the use of identity management strategies needs cognitive resources for group members valuing their ingroup. In Study 5, the hypothesis was tested that the inhibition of identity management strategies leads to a decrease in group-based self-esteem and an increase in anger. I argue that a decrease of group-based self-esteem is expected only in the condition where group members having a high group-based self-esteem are threatened and work under cognitive load. In all the other conditions, either when group members are threatened but do not work under cognitive load, or where group members are not threatened at all, I do not expect a decrease in group-based self-esteem. In the condition where group members are threatened but were not put under cognitive load they do have the possibility to deploy an identity management strategy to restore their group-based self-esteem.

However, concerning negative emotions I have similar predictions: Group members having a high group-based self-esteem are supposed to be especially angry when receiving threat. This effect should be even more pronounced when the group members work under cognitive load and do not have the possibility to manage their social identity. In the condition where they receive threatening information but do not work under cognitive load, they should still feel angry but not as much as in the condition where deploying identity management strategies is inhibited (Gilbert et al., 1995). In the two conditions where participants do not receive any threat they do not have any reason to feel angry. Therefore I assume that in the threat and cognitive load condition the level of anger should be highest for participants having a high group-based self-esteem; in the threat and no cognitive load condition the level of anger should also be high, however, not as high as in the first condition; and in the no threat conditions, independently of load, anger should be on the same low level.

#### **4.8.1. Method**

*Participants and design.* The study was conducted in the psychological laboratory of one of the main buildings of the University of Jena. In this study 105 students from the University of Jena were recruited, who each received 3 Euros for participating. The sample included 67 women and 38 men whose mean age was 23.32 years ( $SD = 2.53$ ) with a range from 19 to 30. In the experiment a 2 (group-based self-esteem, between: high vs. low) x 2 (threat, between: threatening information vs. neutral information) x 2 (load, between: cognitive load vs. no cognitive load) design was used. The first factor (group-based self-esteem) was a quasi-experimental factor. The participants were randomly assigned to one of the four experimental conditions.

*Procedure.* Students walking through the main University building were approached by a female research assistant and were asked to participate in the study. When the participants agreed to participate they were led to the laboratory. There they were seated in one cubical each in front of a computer. All information was given on the computer screen.

First, the participants read the general instructions including the cover story, which said that they were participating in a study with the goal to assess students' satisfaction with their universities. Then they filled in the collective self-esteem and evaluative



identification scale, measuring their esteem and identity as students of East German universities. Afterwards, the participants were told that half of them next would work on a dual task, measuring their concentration ability. This half of the participants saw an eight digit number presented for 15 seconds on the computer screen, which they had to rehearse constantly during the experiment and were asked to report on at the end of the experiment (cognitive load condition). In the no load condition the participants did not have to rehearse anything. Then, all participants read a faked newspaper article. In the threat condition the article said that the unemployment rate in East German had increased during the last years. In particular graduated students from East German Universities had greater problems to find a job than graduated students from West German Universities. In the no threat condition the text indicated the unemployment rate decreased, also for graduated students from East German Universities. The participants then filled in scales measuring collective self-esteem, evaluative identification, perceived threat, and anger. Afterwards, the participants in the cognitive load condition were asked to write down the rehearsed eight digit number and the strategy they had used to remember the number. After finishing the demographic questionnaire the participants were compensated, debriefed, thanked, and dismissed.

*Questionnaires.* Participants completed a pretest questionnaire including collective self-esteem and the evaluative dimension of identification with the in-group. The collective self-esteem scale was the same as in Study 1. But, the two halves of the scale was used before and after the threat manipulation ( $\alpha = .67$ ;  $\alpha = .69$ ). One half of the participants answer half A first, and half B second, the other half of the participants vice versa. The evaluative identification scale was the same as in Study 1 ( $\alpha = .90$ ). The same items were used before and after the manipulation. All responses ranged from 1 to 7 (anchored at *I strongly disagree* and *I strongly agree*).

At the end of the experiment the participants were again asked to fill in five items measuring collective self-esteem and five items measuring evaluative identification ( $\alpha = .92$ ). Moreover, the participants filled in a scale measuring anger consisting of three items (e.g., “I am angry when I think about the situation.”;  $\alpha = .90$ ), and a scale measuring perceived threat (e.g., “I fell threatened by the newspaper article and its consequences for my group.”;  $\alpha = .80$ ), also consisting of three items. To avoid response sets, about one third of the items of each scale were framed negatively. The response ranged from 1 to 7 (anchored at *I strongly disagree* and *I strongly agree*).

#### 4.8.2. Results

*Checks and data screening.* The manipulation check showed a significant effect of manipulated threat on perceived threat,  $t(103) = 16.33, p < .001$ . Participants in the threat condition ( $M = 5.42; SD = 1.02$ ) felt more threatened than participants in the no threat condition ( $M = 2.27; SD = 0.95$ ).

*Collective self-esteem and identification.* I used regression analysis to test the hypothesis that participants high in pretest group-based self-esteem, who were in the threat and cognitive load condition, showed a decrease in posttest group-based self-esteem. I calculated multiple regression analyses first for collective self-esteem, threat, cognitive load and their two way interactions and one three-way interaction (Aiken & West, 1991) as independent variables, controlling for effects of the order of the self-esteem subscale and its interactions, and posttest collective self-esteem as dependent variable. All continuous predictors were z-standardized before running the analyses (Aiken & West, 1991).

The multiple regression was significant,  $F(15,89) = 3.52, p < .001$ , explaining about 37 % of the variance. The regression coefficient for threat was significant ( $\beta = -.25, p = .04$ ). The regression coefficient for pretest collective self-esteem was significant ( $\beta = .69, p < .001$ ), and even though the interaction between threat and cognitive load was not significant, there was a tendency ( $\beta = -.13, p = .17$ ). Moreover, there was an interaction between the order of the collective self-esteem subscale and threat ( $\beta = .24, p = .02$ ). Simple slope test method (Aiken & West, 1991) was used to further investigate the interaction between the order of the scale and threat. Simple slopes were conducted because no specific hypotheses about the interaction existed. The analysis showed that for threatened participants the order of the collective self-esteem scale did not have an influence on the posttest collective self-esteem level ( $\beta = .15, p = .23$ ). For participants not threatened the order of the scale also had no influence on their level of posttest collective self-esteem, however, there was a negative tendency ( $\beta = -.20, p = .11$ ). However, this interaction does not seem to be related to the postulated pattern and therefore will not be discussed in the following. No other regression coefficient was significant.

To further analyze the tendency of the interaction between threat and cognitive load on posttest collective self-esteem I conducted contrast analysis (Abelson & Prentice, 1997). Contrast analysis was used because specific predictions existed. As mentioned before, I assumed that participants when being threatened tend to restore their collective self-esteem by using an identity management strategy. Whenever they do not have the

cognitive resources to deploy an identity management strategy this should lead to a decrease in collective self-esteem. Therefore I postulated that participants in the threat and cognitive load condition should show a lower collective self-esteem than the participants in all other conditions. I conducted planned contrast analyses with the focal contrast C1: -3 1 1 1. Given that I had four experimental groups, there were 2 *dfs* to compute two orthogonal contrasts (C2: 0 0 1 -1 and C3: 0 -2 1 1). The focal contrast (C1: -3 1 1 1) was significant  $F(1,101) = 3.97, p < .05, \eta^2 = .04$ . As expected participants in the threat and cognitive load condition reported less collective self-esteem than participants in all other conditions. Both orthogonal contrasts were not significant; indicating that there was no systematic residual variance left unexplained (both  $F_s < 1.6$ ).

Then I conducted a multiple regression analysis for pretest evaluative identification, threat, cognitive load, and their interactions as independent and posttest evaluative identification as dependent variable. The multiple regression was significant  $F(7,97) = 48.96, p < .001$ , explaining about 78 % of the variance. However, only the regression coefficient for pretest evaluative identification was significant ( $\beta = .90, p < .001$ ).

*Anger.* Again, I first used regression analysis to test the hypothesis that participants high in collective self-esteem feel angry when they perceive threat and do not have the cognitive resources to undo the threat.

I first calculated a regression analysis for collective self-esteem, order of the scale, threat, and cognitive load and their interactions as dependent variables and anger as independent variable. The regression analysis for collective self-esteem was significant  $F(15,89) = 16.01, p < .001$ , explaining about 73 % of the variance. However, only the regression coefficient for threat was significant ( $\beta = .81, p < .001$ ).

The regression for evaluative identification, threat, cognitive load and their interactions was also significant,  $F(7,97) = 34.15, p < .001$ , explaining about 71 % of the variance. As Table 4 shows the predicted three-way interaction was not significant. However, the interaction between threat and cognitive load and the interaction between evaluative identification and threat were significant.

Table 4. Regression Coefficients of Identification, Threat, Cognitive Load and Their Interactions on Anger (Study 5).

Independent variables	B	Beta	<i>p</i>
Threat	1.59	.80	.00
Cognitive load	0.21	.11	.07
Stand. eva. identification	0.23	.12	.06
Threat x load	0.31	.15	.01
Threat x eva. identification	0.24	.12	.04
Load x eva. identification	-0.06	-.03	.65
Threat x load x eva. identification	-0.05	-.03	.61

Then, I conducted planned contrast analysis (Abelson & Prentice, 1997) testing my specific prediction regarding the interaction between threat and load. I assumed anger to be highest in the threat and load condition, because the participants were not able to undo the threatening information in this condition. Moreover, I assumed participants also to be angry in the threat and no cognitive load condition, because in this case the participants had just read threatening information, but had the possibility to undo them by using identity management strategies. Therefore the level of anger should be lower in the threat and no load condition than in the threat and load condition; however, it should be higher than in the two other conditions, where no threat was induced. In the no threat conditions independently of the load manipulation, I assumed the participants to have low levels of anger because they did not receive any threatening information. I conducted planned contrast analyses with the following focal contrast C1: 5 3 -4 -4. Given that I had four experimental groups, there were 2 *dfs* to compute two orthogonal contrasts (C2: -7 9 -1 -1 and C3: 0 0 -3 3). The focal contrast (C1: 5 3 -4 -4) was significant  $F(1,101) = 225.65, p < .001, \eta^2 = .69$ . As expected, participants in the threat and cognitive load condition reported higher levels of anger than the participants in the threat and no load condition. Participants in the threat and no load condition reported higher levels of anger than participants in the two no threat conditions (see Figure 4). Both orthogonal contrasts were not significant; indicating that there was no systematic residual variance left unexplained (both  $F_s < 1.0$ ).

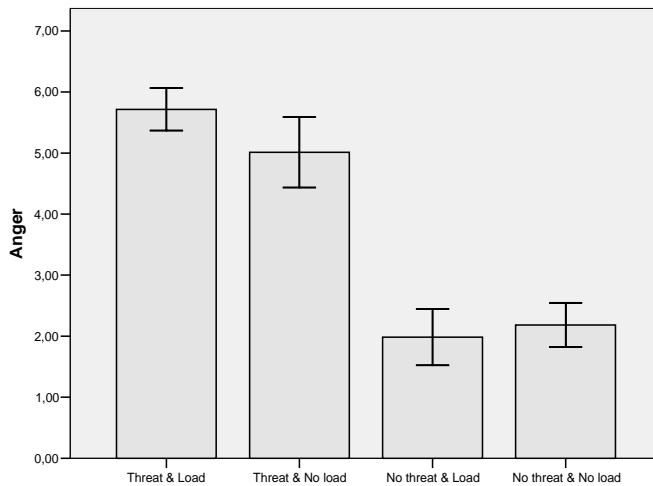


Figure 4. Means of Anger for Each Condition (Study 5).

Moreover, the regression analysis revealed a significant interaction between pretest evaluative identification and threat on anger (see Table 4). I computed simple slopes (Aiken & West, 1991) instead of contrast analysis to investigate this pattern further, because of missing specific hypothesis. Participants high in evaluative identification were angrier the more threatened they were ( $\beta = .87, p < .001$ ), compared to participants low in collective self-esteem ( $\beta = .75, p < .001$ ).

#### 4.8.3. Discussion

The results of Study 5 showed the predicted effects of inhibiting the use of identity management strategies when implementing cognitive load. I found the predicted decrease of group-based self-esteem for threatened participants working under cognitive load. Moreover, I found the predicted increase of anger for threatened participants working under cognitive load. These findings are first evidence for my hypotheses. I had postulated that when the use of identity management strategies is impaired, threatened group-based self-esteem cannot be restored. I had postulated further that the decrease in group-based self-esteem goes along with an increase in negative emotions.

However, the results did not support the assumption that this process is especially pronounced for group members high in group-based self-esteem. The patterns in Study 5

were independent of the pretest level of collective self-esteem. I assume that this is because, as post-hoc analysis showed, all participants had high levels of pretest collective self-esteem. On a seven point scale the mean of pretest collective self-esteem was  $M = 6.00$  with a standard deviation of  $SD = 0.80$ . This means that all participants valued their group a lot, which reduced variance. This seems to be a plausible reason for the missing influence of pretest collective self-esteem. Keeping in mind that all participants had more or less high pretest collective self-esteem means that the prediction that especially group members having high group-based self-esteem are affected by threat and cognitive load seems to be in line with the results. All group members having high group-based self-esteem, showed an increased anger and a decrease of collective self-esteem.

Moreover, I found a significant interaction between evaluative identification and threat on anger. Participants high in evaluative identification were angrier the more threatened they were compared to participants low in evaluative identification (Martiny, Kessler, & Vignoles, 2008). This interaction was independent of cognitive load and therefore this effect was not in line with the predictions. However, the effect still shows especially group members high in group-based self-esteem are vulnerable to social identity threat.

In sum, the results from the fifth study supported the predicted influence of threat and cognitive load on posttest group-based self-esteem and anger. However, due to the missing influence of pretest group-based self-esteem on the effects of inhibiting identity management strategies, it seems necessary to replicate the findings in a further study. The replication of the results was done with an intergroup context where the variance of group-based self-esteem was larger than in Study 5.

#### **4.9. Study 6**

To overcome the limitations of Study 5 and to replicate the found results Study 6 was conducted. Whereas in Study 5 an East German versus West German intergroup situation was made salient, I decided to use another intergroup context in Study 6 to overcome the ceiling effect of group-based self-esteem. Therefore, I introduced a comparison between two East German Universities, while consciously avoiding the comparison between East Germany and other parts of Germany. Even though being a student of the University of Jena is most likely a valued group membership, I assumed that

the direct comparison between East Germany and West Germany had increased the group-based self-esteem of the participants in the fifth study. I assumed that taking another East German University would lead to a broader variance in group-based self-esteem.

As in Study 5, I postulate that group members having high group-based self-esteem are especially vulnerable to threatening information when working under cognitive load. This should lead to a decrease in collective self-esteem and an increase of anger.

#### **4.9.1. Method**

*Participants and design.* The study was conducted in the psychological laboratory of one of the main buildings of the University of Jena. I recruited 109 students from the University of Jena, who each received 3 Euros for participating. The sample included 87 women and 22 men whose mean age was 22.28 years ( $SD = 2.71$ ) with a range from 19 to 37. In the experiment a 2 (group-based self-esteem, between: high vs. low) x 2 (threat, between: threatening information vs. neutral information) x 2 (load, between: cognitive load vs. no cognitive load) design was used. The first factor (group-based self-esteem) was a quasi-experimental factor. The participants were randomly assigned to one of the four experimental conditions.

*Procedure.* The procedure followed the procedure of Study 5, except the threat manipulation. In the threat condition the faked newspaper article said that the results of a new university ranking show that surprisingly the University of Dresden is the best East German University and not, as it would have been expected, the University of Jena. Within the new university ranking the University of Dresden was evaluated much better than the University of Jena. In the no threat condition the text indicated that the University of Jena and the University of Dresden are equally good.

*Questionnaires.* The same questionnaires as in Study 1 were used. The two halves of collective self-esteem scale had an internal consistency of  $\alpha = .65$  and  $\alpha = .78$ . Pretest evaluative identification had an internal consistency of  $\alpha = .93$ , and posttest evaluative identification of  $\alpha = .93$ . Perceived threat had an internal consistency of  $\alpha = .75$  and anger of  $\alpha = .91$ . To avoid response sets about one third of the items off each scale were framed negatively. Again, all responses ranged from 1 to 7 (anchored at *I strongly disagree* and *I strongly agree*).

#### 4.9.2. Results

*Checks and data screening.* The manipulation check showed a significant effect of manipulated threat on perceived threat,  $t(107) = 10.98, p < .001$ . Participants in the threat condition ( $M = 3.77; SD = 1.20$ ) felt more threatened than participants in the no threat condition ( $M = 1.65; SD = 0.80$ ).

*Collective self-esteem and identification.* I tested the hypothesis that participants having a high pretest collective self-esteem who were in the threat and cognitive load condition show a decrease in posttest collective self-esteem with regression analyses. I calculated multiple regression analyses first for collective self-esteem, threat, cognitive load, and their two way interactions and one three-way interaction (Aiken & West, 1991) as independent variables, controlling for effects of the order of the self-esteem subscale and its interactions, and posttest collective self-esteem as dependent variable. All continuous predictors were z-standardized before running the analyses (Aiken & West, 1991).

The multiple regression was significant,  $F(15,93) = 8.02, p < .001$ , explaining about 56 % of the variance. The regression coefficient for threat was significant ( $\beta = -.28, p < .001$ ), the regression coefficient for load was marginal significant ( $\beta = .13, p = .07$ ), the regression coefficient for the order of the self-esteem scale was significant ( $\beta = .33, p < .001$ ), and for pretest collective self-esteem ( $\beta = .62, p < .001$ ), and the interaction between the order of the scale and pretest collective self-esteem was significant ( $\beta = .15, p = .04$ ). No further interactions were significant. I used simple slope test method (Aiken & West, 1991) to further investigate the interaction between the order of the collective self-esteem scale and pretest collective self-esteem. For participants with high pretest self-esteem the order had a significant effect on the level of posttest self-esteem ( $\beta = .46, p < .001$ ). For participants low in pretest self-esteem the order only had a marginal significant effect on the level of posttest self-esteem ( $\beta = .19, p = .06$ ). These results were not predicted and because they do not seem to be directly related to the tested assumptions, they will not be discussed further.

Then, I conducted a multiple regression analysis for pretest identification, threat, cognitive load, and their interactions as independent and posttest identification as dependent variable. The multiple regression was significant  $F(7,101) = 117.41, p < .001$ , explaining about 88 % of the variance. The regression coefficient for threat was significant



( $\beta = -.12, p = .001$ ) and the regression coefficient for pretest identification was significant ( $\beta = .95, p < .001$ ). No further regression coefficients were significant.

*Anger.* Again, I tested the hypothesis that participants having high collective self-esteem feel extremely angry when they perceive threat and do not have the cognitive resources to undo the threat. First, I conducted a multiple regression analysis using threat, cognitive load, pretest collective self-esteem, and their interactions (Aiken & West, 1991) as independent variables, controlling for the order of the collective self-esteem scale, and anger as dependent variables.

The regression with collective self-esteem, threat, cognitive load, and its interactions, controlling for the order of the collective self-esteem scale and its interactions, was significant,  $F(15,93) = 4.60, p < .001$ , explaining about 43 % of the variance. The regression coefficient for threat was significant ( $\beta = .58, p < .001$ ). Moreover, the interaction between threat and pretest collective self-esteem was significant ( $\beta = .26, p = .003$ ). This two way interaction was qualified by a significant three-way interaction between pretest self-esteem, threat, and cognitive load ( $\beta = .18, p = .04$ ). To analyze the three-way interaction in detail I first computed a regression analysis for the no load condition and then for the load condition separately. In the no load condition the regression was significant,  $F(3,56) = 11.97, p < .001$ , explaining about 39% of the variance. The regression coefficient for pretest collective self-esteem was significant ( $\beta = .61, p < .001$ ), however, no further effect was significant. In the load condition the regression was also significant,  $F(3,45) = 11.20, p < .001$ , explaining about 43 % of the variance. Again the regression coefficient for pretest collective self-esteem was significant ( $\beta = .51, p < .001$ ), qualified by a significant two way interaction between collective self-esteem and threat ( $\beta = .37, p = .002$ ). I used simple slopes test method (Aiken & West, 1991) to investigate the interactive pattern in both conditions. As predicted, in the load condition participants high in collective self-esteem were the more angry the more threatened they were ( $\beta = .90, p < .001$ ); however, for participants low in collective self-esteem threat did not have an effect on anger ( $\beta = .12, p = .48$ ). See Figure 5 for both cognitive load conditions.

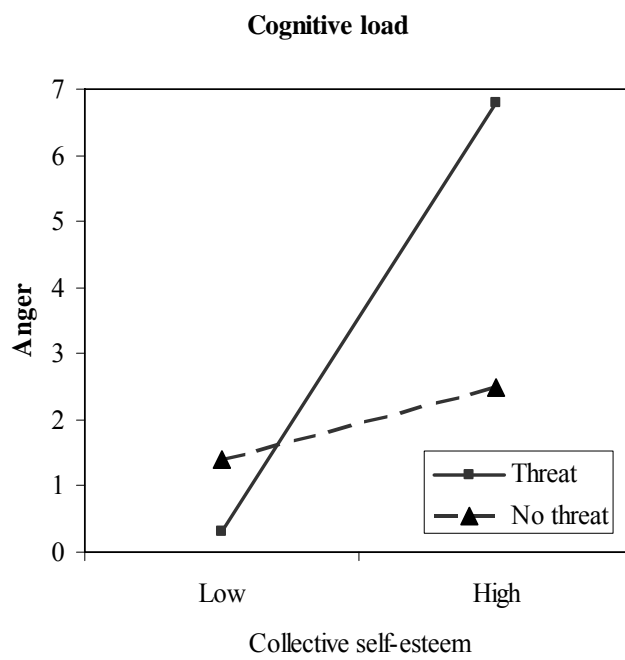
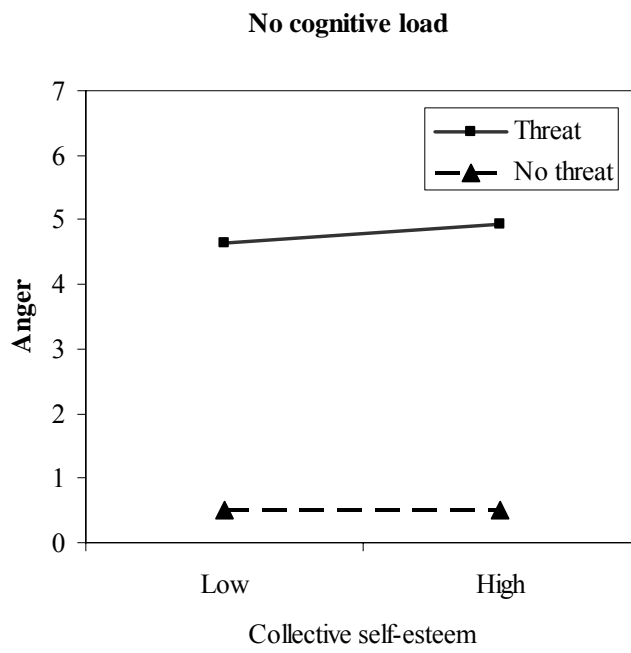


Figure 5. Simple slopes for the Interaction Between Collective Self-Esteem and Threat on Anger Under the Two Load Conditions (Study 6).

Next, I computed a regression analysis with pretest identification, threat, cognitive load, and their interactions as predictors, and anger as dependent variable. The regression was significant,  $F(7,101) = 8.27, p < .001$ , explaining about 36 % of the variance. The regression coefficients for threat ( $\beta = .56, p < .001$ ) and the interaction between threat and evaluative pretest identification ( $\beta = .21, p = .02$ ) were significant. I analyzed the interaction in detail with simple slopes test method (Aiken & West, 1991). Group members high in group-based self-esteem were angrier the more threatened they were ( $\beta = .75, p < .001$ ) compared to group members low in group-based self-esteem ( $\beta = .37, p < .001$ ). No further two way interactions were significant, neither was the three-way interaction.

#### **4.9.3. Discussion**

The results of Study 6 did show the predicted three-way interaction for anger. Participants high in initial group-based self-esteem in the threat and cognitive load condition showed an increased anger compared to the participants in all other conditions. This means that whenever group members valuing their group receive threatening information and then do not have the possibility to undo this threat by deploying an identity management strategy they get angry.

Regarding evaluative identification, no three-way did was found. Again, there was a significant interaction between threat and pretest evaluative identification. The higher participant's initial level of evaluative identification, the angrier they were when threatened. Unfortunately this relation was independent of load.

The predicted three-way interaction between the initial level of group-based self-esteem, threat, and cognitive load on posttest group-based self-esteem was not found. I assume that this is the case because of the low sensitivity of the used measure. I used an explicit scale to measure pre- and posttest collective self-esteem, including very similar items before and after reading the manipulation. Due to the fact that individuals in general have the tendency to be consistent and due to the fact that the expected decrease in collective self-esteem is small, it is not that surprising that the decrease was not found.

#### 4.10. Study 7

To replicate the findings of Study 6 and to make sure that the found three-way interaction was really due to the predicted interplay between pretest group-based self-esteem, threat and cognitive load a further study using a different cognitive load manipulation was conducted. A cognitive load procedure implemented by Robbins and colleagues (1996) was used. Participants in the study by Robbins and colleagues had to generate a random string of letters of the alphabet aloud every second. This procedure was assumed to suppress the central-executive of the working memory. The procedure of Study 7 was changed in such a way that the participants had to generate a new random letter every five seconds. I changed this detail to ensure that the participants were able to read and understand the threatening information. Again, I postulate that group members having high group-based self-esteem are especially vulnerable to threatening information when working under cognitive load. This should lead to a decrease in group-based self-esteem and an increase of anger.

##### 4.10.1. Method

*Participants and design.* The study was conducted in the psychological laboratory of one of the main buildings of the University of Jena. In this study 108 students from the University of Jena were recruited, who each received 2 Euros for participating. The sample included 78 women and 30 men whose mean age was 22.53 years ( $SD = 2.78$ ) with a range from 18 to 33. In the experiment a 2 (group-based self-esteem, between: high vs. low) x 2 (threat, between: threatening information vs. neutral information) x 2 (load, between: cognitive load vs. no cognitive load) design was used. The first factor (group-based self-esteem) was a quasi-experimental factor. The participants were randomly assigned to one of the four experimental conditions.

*Procedure.* The procedure followed the procedures of Study 5 and 6. The threat manipulation was similar to the manipulation of Study 6. Only the cognitive load manipulation was changed. In the cognitive load condition the participants were asked generate a random string of letters of the alphabet aloud whenever they heard a sound. During the rest of the experiment the sound was presented every five seconds.

*Questionnaires.* The same questionnaires as in Study 1 were used. All scales had a satisfying internal consistency (collective self-esteem scales:  $\alpha = .67/.73$ ; pre- and posttest evaluative identification:  $\alpha = .93$ ; perceived threat:  $\alpha = .75$ ; anger:  $\alpha = .91$ ). To avoid response sets about one third of the items of each scale were framed negatively. Again, all responses ranged from 1 to 7 (anchored at *I strongly disagree* and *I strongly agree*).

#### 4.10.2. Results

*Checks and data screening.* Before analyzing data, the data of 13 participants were excluded, who guessed parts of the hypotheses, were not students at an East German university, or did not speak German fluently. The data of 95 participants remained for analyses. The manipulation check showed a significant effect of manipulated threat on perceived threat,  $t(93) = 5.75, p < .001$ . Participants in the threat condition ( $M = 4.28; SD = 1.09$ ) felt more threatened than participants in the no threat condition ( $M = 2.95; SD = 1.16$ ).

*Collective self-esteem and identification.* I tested the hypothesis that participants having a high pretest collective self-esteem who received threat and worked under cognitive load showed a decrease in posttest collective self-esteem with regression analyses. I calculated multiple regression analyses first for collective self-esteem, threat, cognitive load, their two way interactions, and one three-way interaction (Aiken & West, 1991) as independent variables, controlling for order effects of the self-esteem subscale and its interactions, and posttest collective self-esteem as dependent variable. All continuous predictors were z-standardized before running the analyses (Aiken & West, 1991).

The multiple regression was significant,  $F(15,79) = 4.43, p < .001$ , explaining about 46 % of the variance. The regression coefficient for threat was significant, ( $\beta = -.21, p = .03$ ), the order of the self-esteem subscale was significant ( $\beta = .44, p < .001$ ), the regression coefficient for pretest collective self-esteem scale ( $\beta = .48, p < .001$ ), and a three-way interaction between order, pretest collective self-esteem, and threat was significant ( $\beta = -.22, p = .03$ ). No further interactions were significant. The three-way interaction was analyzed further by computing regression analyses for the threat and the no threat condition separately. The results showed that whereas in the no threat condition no interaction between the order of the collective self-esteem scale and the pretest level of

collective self-esteem existed ( $\beta = .08, p = .49$ ), in the threat condition a significant interaction existed ( $\beta = -.24, p = .04$ ). However, because this interaction is not of relevance for the investigated hypothesis the relation was not examined further.

Then, I conducted a multiple regression analysis for pretest identification, threat, cognitive load, and their interactions as independent, and posttest identification as dependent variable. The multiple regression was significant  $F(7,87) = 103.32, p < .001$ , explaining about 89 % of the variance. The regression coefficient for pretest identification was significant ( $\beta = .94, p < .001$ ) and the interaction between pretest identification and threat was significant ( $\beta = -.08, p = .03$ ). This interaction was further investigated with simple slopes test method (Aiken & West, 1991). Participants high in evaluative identification the more they were threatened, the lower were their posttest level of evaluative identification. However, this relation was only marginal significant ( $\beta = -.09, p = .08$ ). Participants low in pretest evaluative identification threat did not have an effect on the level of posttest evaluative identification ( $\beta = .05, p = .28$ ).

*Anger.* Following the procedure of Study 5 and 6 I computed a multiple regression with collective self-esteem, threat, cognitive load, and its interactions, controlling for the order of the collective self-esteem scale and its interactions, which was significant,  $F(15,79) = 5.96, p < .001$ , explaining about 53 % of the variance. The regression coefficient for threat was significant ( $\beta = .67, p < .001$ ). Moreover, the three-way interaction between pretest self-esteem, threat, and cognitive load was significant ( $\beta = .21, p = .02$ ). No further regression coefficients were significant. To analyze the three-way interaction in detail, I first computed a regression analysis for the cognitive load and then for the no cognitive load condition separately. In the no load condition the regression was significant,  $F(7,36) = 6.40, p < .001$ , explaining 56 % of the variance. The regression coefficient for threat was significant ( $\beta = .65, p < .001$ ). No further effects were significant. In the cognitive load condition the regression also was significant,  $F(7,43) = 6.21, p < .001$ , explaining about 50 % of the variance. The regression coefficient for threat again was significant ( $\beta = .70, p < .001$ ). However, qualified by a significant interaction between pretest collective self-esteem and threat ( $\beta = .25, p = .04$ ). I used simple slopes test method (Aiken & West, 1991) to investigate the interactive pattern in the threat condition. As predicted, for participants high in collective self-esteem threat had a significant positive effect on anger ( $\beta = .91, p < .001$ ). For participants low in collective self-esteem threat did have the same effect on anger, however not as strong as for participants high in group-based self-esteem ( $\beta = .47, p = .002$ ).

Next, I computed a regression analysis with pretest identification, threat, cognitive load and their interactions as predictors, and anger as dependent variable. The regression was significant,  $F(7,87) = 16.29, p < .001$ , explaining about 57 % of the variance. The regression coefficient for threat was significant ( $\beta = .64, p < .001$ ), the regression coefficient for pretest identification was significant ( $\beta = .16, p = .03$ ), and the interaction between threat and pretest identification ( $\beta = .19, p = .01$ ) was significant. However, the main effects and two way interactions were qualified by a significant three-way interaction between pretest identification, threat, and cognitive load ( $\beta = .16, p = .03$ ). To analyze the three-way interaction in detail I first computed a regression analysis for the load and then for the no load condition separately. In the no load condition the regression was significant,  $F(3,40) = 11.12, p < .001$ , explaining about 46 % of the variance. Only the regression coefficient of threat was significant ( $\beta = .64, p < .001$ ). In the load condition the regression also was significant,  $F(3,47) = 28.87, p < .001$ , explaining about 65 % of the variance. The regression coefficient for threat was significant ( $\beta = .64, p < .001$ ), the regression coefficient for pretest evaluative identification was significant ( $\beta = .23, p = .01$ ), however, qualified by a significant interaction between pretest evaluative identification and threat ( $\beta = .36, p < .001$ ). I used simple slopes test method (Aiken & West, 1991) to further investigate the interactive pattern in the cognitive load condition. As predicted, for participants high in evaluative identification threat had a significant positive influence on anger ( $\beta = .98, p < .001$ ). For participants low in evaluative identification threat also had a significant effect on anger ( $\beta = .29, p = .02$ ), however, the effect was lower than for the participants high in evaluative identification.

#### **4.10.3. Discussion**

The results of Study 7 were in line with the results of Study 6. Again, I did find the interaction effect of group-based self-esteem (collective self-esteem and evaluative identification, respectively), threat, and cognitive load on anger. Participants having high group-based self-esteem showed an increase in anger when receiving threat under cognitive load compared to participants low in group-based self-esteem. Thus, the findings supported my theoretical assumptions. I had assumed that especially individuals high in group-based self-esteem are vulnerable to negative comparison outcomes and that these negative outcomes trigger identity management strategies. However, whenever group

members high in group-based self-esteem can not successfully manage their social identity this leads to an increase in negative emotions because the negative information can not undone.

Again, I did not find the predicted effect for posttest collective self-esteem. However, I found a significant interaction between threat and pretest evaluative identification on posttest evaluative identification. Participants high in pretest evaluative identification showed when threatened a decrease in posttest evaluative identification. However, because this relation was independent of cognitive load and the found effect is very small, it will not be taken into account further.

As mentioned before, I assume the missing effect on collective self-esteem is due to the used method. I used explicit scales to access the change in collective self-esteem. Explicit scales are not sensitive to small changes, on the one hand because of the individual's tendency to be consistent, on the other hand because of the coarse grades of the scale. Even though I did not find the expected pattern for posttest collective self-esteem, I assume that the found pattern for anger indicates that the postulated process really does occur. Participants high in group-based self-esteem have a strong motivation to regulate their group-based self-esteem after receiving negative information (threat), whenever they do not have the possibility to regulate their group-based self-esteem this results in an increase of negative emotions.

#### **4.11. General Discussion of the Results of the Second Research Line**

In the present work I was interested in the inhibition of identity management strategies and its effect on posttest group-based self-esteem and negative emotions (e.g., anger). I postulated in line with earlier findings (Coull et al., 2001; Gilbert et al., 1995) that the protection of one's ingroup needs cognitive resources. The results of Study 4 supported this assumption. Especially participants high in group-based self-esteem were motivated to manage their social identity. In addition, the results of Study 5 showed significant interactions between threat and cognitive load independently of the pretest level of collective self-esteem on posttest collective self-esteem and anger. These results point in the predicted direction: When participants worked under cognitive load and then were threatened they showed an increase in anger and a decrease in collective self-esteem. I argue that this is the case because after receiving threat group members were motivated to



use identity management strategies. However, when working under cognitive load the participants could not use a strategy because they did not have cognitive resources left to do so. However, in Study 5 this pattern emerged not only for group members high in group-based self-esteem, but for all group members. I assume that this was due to the overall high level of pretest group-based self-esteem of the participants.

Regarding anger the results of both last studies (6 and 7) were in line with the predictions. I had assumed that individuals high in group-based self-esteem when receiving threat and working under cognitive load would be especially angry. This effect was found in Studies 6 and 7, even though two very different operationalizations of cognitive load were used. In my opinion negative emotions can be seen as indicators for the failure of managing one's social identity. This argument is in line with the basic assumptions of self-regulation theories (e.g., Carver, 2000; Carver & Scheier, 1990). Carver and colleagues argued that negative affect arises whenever an individual is doing worse than he or she intended to do and positive feelings arise whenever a person does better. This means that the negative comparison outcome (threat) leads to negative feelings. These negative feelings are normally undone by using identity management strategies. Whenever one's social identity is managed successfully negative emotions decrease. However, when it is not possible to successfully manage one's social identity then negative emotions are not reduced, but, are likely to remain on a high level.

However, in Study 6 and 7 the results for posttest collective self-esteem were not replicated. The reason might be the used measurement. Explicit scales might not be sensitive enough to assess small changes. In further research more sensitive measurements, which are not as conscious accessible, should be used. For example, implicit methods could be used to investigate the change of pre- to posttest group-based self-esteem (e.g., Heigener, 2008).

In sum, the presented work gives first evidence for motivational dynamics of social identity theory. I showed that managing one's social identity needs cognitive resources and that the use of identity management strategies is impaired whenever group members do not have enough cognitive resources available. In line with my argument, this process is especially true for group members high in group-based self-esteem because they are particularly motivated to protect their group image.

## 5. General Discussion

### 5.1. Overview and Discussion of the Presented Studies

The results of the reported studies testing the assumptions of the outlined dynamic approach of motivational processes of social identity theory (Tajfel & Turner, 1979) mainly supported the formulated hypotheses. In the first research line I postulated and found that the choice of specific identity management strategies depends on an interaction between the level of group-based self-esteem and threat. In other words, dependently on how much group members value their ingroup they react differently to threatening information. In the second research line I was interested in the effects of inhibiting identity management strategies. I hypothesized and found that group members working under cognitive load (i.e., did not have the possibility to manage their social identity) showed a decrease in group-based self-esteem and an increase in anger. In the following, an overview of the results as well as a discussion of the limitations of the studies will be presented for each research line separately.

#### 5.1.1. *Overview of the Results of the First Research Line*

The first research line focused on the extension of the two corollaries of the self-esteem hypothesis (Abrams & Hogg, 1988). I extended the first corollary of the self-esteem hypothesis by postulating that not only intergroup bias but the use of any identity management strategy enhances group-based self-esteem. Furthermore, I extended the second corollary by postulating that it is not low group-based self-esteem but threatened high group-based self-esteem that promotes the use of identity management strategies. From these general assumptions specific hypotheses were derived which were tested in three studies.

On the one hand, I postulated that group members high in group-based self-esteem are likely to show social competition when being threatened by an outgroup. I assumed that group members having a high group-based self-esteem have a strong and very positive image of their group. Whenever they receive negative information about the ingroup their motivation is triggered to increase the group's status. Therefore, it seems more likely that

these group members will favor a collective strategy trying to enhance the evaluation of the whole group compared to an individual strategy that would only enhance their personal status. Moreover, I assumed that negative emotions play an important mediating role in the relation between high group-based self-esteem, threat, and the motivation to show social competition (Mummendey, Kessler, et al., 1999). I tested these assumptions in three studies and found support for the hypotheses. Study 1 and 2 showed that group members high in group-based self-esteem did report an increased motivation to show social competition after being threatened. Study 3 showed that the relation between group-based self-esteem and social competition was fully mediated by anger.

On the other hand, I assumed a different process for group members low in group-based self-esteem. For group members low in group-based self-esteem I postulated two competing hypotheses: Group members not valuing their group membership might show an increased motivation to leave the group when receiving threatening information (Boen et al., 2002, Ellemers et al., 1997; Snyder et al., 1986). The motivation of group members low in group-based self-esteem to leave their group arises because they do not value their group membership. They are not committed to the group and are not willing to make any effort to change the image of the whole group. Thus, if they then receive threatening information they will not be motivated to deploy a collective strategy which might include costs for them. As a consequence, they prefer to choose an individual strategy such as leaving their group and joining a higher status group.

However, in contrast to the just outlined hypothesis it might also be the case that individuals having a low group-based self-esteem are not willing to leave their group and join a high status group when confronted with threatening information about their group. This assumption is in line with realistic conflict theory (Campbell, 1965; Sherif, 1966). Group members of devaluated groups increase their group identity the more they recognized prejudice against their group (e.g., Chavira & Phinney, 1991; Cozzarelli & Karafa, 1998). This means that perceiving threat can lead to an increased identification and an increased importance of group membership. That would then lead to a decrease in the motivation to leave the group.

In my eyes it depends on the investigated intergroup setting which of the two processes takes place. In minimal groups the first process seems more likely to occur (e.g., Ellemers et al., 1997, Study 1) because the membership in a minimal group is not very important for its members. However, in daily life groups, that have a collective history and meaning to their members, it is more likely that the importance of the group membership

increases after being threatened. Then individual mobility should be more unlikely to occur.

The results of Study 1 and Study 2 showed that group members low in group-based self-esteem reported a decreased motivation to leave the group after being threatened compared to group members not being threatened. In other words, the negative relation between group-based self-esteem and individual mobility existed only when group members were not threatened. The results of Study 2 further indicated that this decrease of the motivation to leave the group was due to an increased importance of group membership triggered by the threatening information. In line with my second hypothesis and the argumentation according to realistic conflict theory (Sherif, 1966), the importance of the group increased after receiving threat. For this reason individual mobility was no adequate strategy for the group members anymore.

In sum, the presented studies showed that receiving threat led to an increased motivation to show social competition for group members high in group-based self-esteem. This relation was mediated by anger. However, group members low in group-based self-esteem showed an increased importance of group membership after being threatened and a decreased motivation to leave their group and join the higher status group compared to group members low in group-based self-esteem not being threatened.

### ***5.1.2. Limitations of the Studies Testing the First Research Line***

There are three main limitations of the studies investigating the first research line that have to be addressed in the following. First of all, in the reported studies only the effect of group-based self-esteem and threat on the motivation to show individual mobility and social competition was investigated. As stated before, there are more than these two identity management strategies postulated in social identity theory (Tajfel & Turner, 1979). Even though earlier studies (e.g., Mummendey, Kessler et al., 1999) reported problems when investigating social creative strategies, it would be of great interest to investigate the effect of social identity threat and group-based self-esteem on creative strategies.

Second, within the presented studies the role of socio-structural variables was not taken into account. Ellemers and colleagues showed in a series of studies that the perception of the socio-structural variables in a specific intergroup situation influences which identity management strategy is chosen (e.g., Ellemers et al., 1988; Ellemers et al.,

1990; Ellemers et al., 1993; see Ellemers, 1993, for an overview). It seems plausible to combine the research investigating the underlying motivational dynamics of social identity theory (Tajfel & Turner, 1986) and the work on the effects of socio-structural variables on identity management strategies. For example, in further studies group-based self-esteem could be measured, then social identity threat and socio-structural variables could be manipulated, which then would influence the choice of identity management strategies. This would lead to even more elaborated findings under which conditions group members choose which identity management strategy.

A third limitation which has to be addressed concerns Study 3 that showed a full mediation of anger between group-based self-esteem and social competition. However, even though this is a promising result and in line with existing research (Mummendey, Kessler et al., 1999), neither social identity threat was not manipulated, nor the influence of anger on individual mobility was investigated. It seems likely that anger has a stronger influence on social competition than on individual mobility (Mummendey, Kessler et al., 1999). However, this should be examined in the used paradigm. In further research it therefore would be fruitful to manipulate social identity threat and at the same time investigate the influence of anger not only on social competition, but also on individual mobility.

### ***5.1.3. Overview of the Results of the Second Research Line***

In the second research line I investigated the motivational dynamics of social identity theory (Tajfel & Turner, 1979) by exploring the effects of inhibiting identity management strategies. In a first step, I postulated in accords with the work by Coull and colleagues (Coull et al., 2001) that protecting one's positive ingroup image needs cognitive resources. Group members high in group-based self-esteem were assumed to be especially motivated to protect their positive group image. The results of Study 4 supported this hypothesis. They showed that the use of identity management strategies does indeed need cognitive resources. Participants high in group-based self-esteem reading threatening information showed a decrease of performance in a secondary neutral task. I assume that the participant's cognitive resources were occupied with undoing the threatening information and therefore they did not have resources left to fully process the information of the second task (Coull et al., 2001).

In a second step I investigated the effects of inhibiting the use of identity management strategies by inducing cognitive load. I had assumed that group members high in group-based self-esteem were especially motivated to undo threatening information about their ingroup. Whenever they were mentally busy (through the induced cognitive load) and therefore did not have the resources left to undo the threatened information, this should lead to a decrease in group-based self-esteem and an increase in anger. Inhibiting the use of any identity management strategy should lead to a decrease in group-based self-esteem because the regulation processes normally triggered by threat were eliminated. Moreover, I argued that the decrease in group-based self-esteem goes along with an increase in negative emotions. As the second study by Gilbert and colleagues (1995) showed, a negative comparison outcome can influence the affective state of the participants. Therefore, I assumed that negative emotions can be seen as an indicator for the unsuccessful deployment of identity management strategies. Three studies tested the postulated relations.

In line with my hypotheses Study 5 showed that participants when threatened and working under cognitive load showed a decrease in group-based self-esteem and an increase in anger compared to the participants in the other conditions. However, in contrast to my hypothesis the interaction between threat and cognitive load was independent of group-based self-esteem. Post-hoc analysis showed that the overall level of group-based self-esteem was extremely high for all participants. This means that all participants valued their group. Thus, when receiving threat they were all motivated to manage their social identity. However, because of the cognitive load manipulation they were not able to do so and this resulted in a decrease in group-based self-esteem and an increase in anger.

The results of Studies 6 and 7 supported the predicted relation between group-based self-esteem, threat, and cognitive load on anger. The higher participants' group-based self-esteem was, the angrier they reported to be when they were threatened and worked under cognitive load. This result was found in two studies using different cognitive load manipulations. I assume that in line with my hypothesis participants high in group-based self-esteem used identity management strategies to protect their group against threatening information. But, when they then received cognitive load and did not have the cognitive resources left to manage their social identity, this resulted in increased negative emotions. However, both studies did not find the expected effect for posttest group-based self-esteem. I assume that this might be due to the explicit scale assessing group-based self-esteem which was not able to capture the expected small differences between the pre- and

the post measure. For this reason I postulate that the predicted process took place, however, because of the measurement the decrease in posttest group-based self-esteem did not become visible. I further argue that anger can be understood as an indicator for the failure of managing one's social identity (Carver, 2004; Carver & Scheier, 1990). However, this postulation should be tested in further research.

In sum, managing one's social identity needs cognitive resources. When group members do not have enough cognitive resources available to successfully manage their social identity, this leads to a decrease in group-based self-esteem and an increase in negative emotions.

#### ***5.1.4. Limitations of the Studies Testing the Second Research Line***

The main limitations of the studies testing the second research line will be discussed in the following. One of the most obvious limitations was the fact that in Study 5 the predicted three-way interaction between group-based self-esteem, threat, and cognitive load was not found. As mentioned before, I assume that the results of Study 5 were independent of the initial level of group-based self-esteem because the overall level of initial group-based self-esteem in the used sample was very high with a low standard deviation.

The missing relation of group-based self-esteem, threat, and cognitive load on posttest group-based self-esteem in the Studies 6 and 7 was in my opinion due to the used measurement. I think that the explicit group-based self-esteem scales were not sensible enough to assess small changes. However, this should be explored in detail in further research, for example, by using implicit measures for group-based self-esteem (e.g., Heigener, 2008).

Furthermore, the second research line did not take other possibilities into account why managing one's social identity is not always possible. One reason might be that group members high in group-based self-esteem when being threatened do not always choose an adequate identity management strategy. The perception of the socio-structural variables of group members influences the selected management strategy (e.g., Ellemers et al., 1988; Ellemers et al., 1990; Ellemers et al., 1993; see Ellemers, 1993, for an overview). These socio-structural variables are important determinants of people's preference to display individualistic or collective behavior when striving for higher status. Integrating the

influences of the socio-structural variables into my approach leads to specific assumptions regarding the conditions under which the use of particular management strategies is more successful than the use of others. Thus, dependent on the socio-structural variables, particular strategies should have the potential to restore the threatened group-based self-esteem in specific situations and others not. In line with these arguments I postulate that only the use of fitting identity management strategies is successful in restoring threatened group-based self-esteem. The case of unfitting strategies was not investigated within the presented research. However, it is an extremely interesting research question and for this reason should be investigated in further research projects.

Moreover, one has to keep in mind that the presented studies of the second research line are only first attempts to demonstrate the motivational dynamics underlying social identity theory (Tajfel & Turner, 1979). In my opinion there is still a lot of work to do, to fully demonstrate the postulated dynamic relations. One can imagine several different research projects addressing different points of the postulated model. For example, one should show that using identity management strategies actually leads to an increase in group-based self-esteem. Until now this has only been shown for intergroup bias (e.g., Chin & McClintock, 1993, Experiment 1; Hogg, Turner, Nascimento-Schulze, & Spriggs, 1986; Lemyre & Smith, 1985; Mullin & Hogg, 1995; Oakes & Turner, 1980; Vanbeselaere, 1991; Chin & McClintock, 1993, Experiment 2; Gagnon & Bourhis, 1996). Moreover, a crucial limitation of the presented work is that the inhibition of identity management strategies was not really shown. I induced cognitive load and then assessed variables which were indicators of the failure of managing the group members' social identity. For this reason it seems useful to investigate this process in more detail.

To sum up, even though the results of the second research line are promising first attempts in investigating the underlying dynamics of social identity theory (Tajfel & Turner, 1979), the presented studies have limitations and for this reason in further research the dynamic approach should be examined in more detail.

## **5.2. Integration of the Results in the Dynamic Model**

The dynamic approach postulated that the positive group perception (i.e., group-based self-esteem) may serve as an internal standard to which incoming appraisals of group related events (e.g., social comparison outcomes) are compared. Whenever these



events are negatively discrepant from the internal standard this leads to a decrease in state group-based self-esteem. For this reason, group members will become active by choosing identity management strategies in order to cope with the negative discrepant event and to re-establish the group-based self-esteem. Whenever an identity management strategy is used successfully this elevates group members' group-based self-esteem. Moreover, the motivation to deploy an identity management strategy should be especially high for group members having a threatened high group-based self-esteem. For group members high in group-based self-esteem the standard to which the incoming appraisals of group related events are compared to is on a high level. This means that whenever they receive threatening information (in form of a negative comparison outcome) a large negative discrepancy occurs between the internal standard and the incoming appraisal. This perceived discrepancy will trigger a strong motivation to use an identity management strategy in order to reduce the discrepancy and restore group members' group-based self-esteem. Which identity management strategy will be chosen by the threatened group member depends on the relation of the individual to the group (e.g., trait and state level of group-based self-esteem) and on the perception of socio-structural variables of the specific intergroup context (e.g., Ellemers et al., 1988; Ellemers et al., 1990; Ellemers et al., 1993; see Ellemers, 1993, for an overview).

The influence of the initial level of group-based self-esteem on the chosen identity management strategy was supported in the first three studies. The studies showed that group members high in group-based self-esteem reacted differently to threat than did members low in group-based self-esteem. When group members high in group-based self-esteem were threatened, they tried to protect their group's high status by reporting the motivation to show social competition. However, group members low in group-based self-esteem only reported the motivation to leave their group, when they received neutral information about their group. As soon as they were threatened, their motivation to leave their group and join a higher status group decreased. Threat seemed to increase the importance of group membership and therefore leaving the ingroup was no adequate strategy anymore. On the one hand, these findings demonstrate the importance of taking the relation of the individual to the group (group-based self-esteem) into account when investigating the effects of social identity threat. On the other hand, these findings demonstrate that differences between minimal groups and daily life groups exist, which can lead to different processes within the two groups and therefore should be taken into account in intergroup research. I assume that the reported findings contrast the findings by

Ellemers and colleagues (1997) because Ellemers et al. investigated minimal groups. Minimal groups do not have a history and therefore not as much meaning as in the society existing groups. Thus, in a minimal group setting it seems plausible to leave the ingroup when one receives negative information about the group and does not value it. Trying to join the high status group is in this case the best way to improve status as quickly and effortless as possible. However, this is not what occurs in daily life groups. Here, the groups do have a history and a meaning for each group member. For this reason, group members not valuing their group when receiving negative information showed a decreased motivation for individual mobility in the reported studies.

The dynamic approach further included the assumption that there might be situations within which no identity management strategy at all can be used and therefore group-based self-esteem can not be restored. In the presented work the possibility was investigated that group members might not always manage their social identity successfully because they do not have enough cognitive resources available. The dynamic model assumed that using identity management strategies needs cognitive resources. This assumption was supported by the results of Study 4. When group members did not have enough cognitive resources available to successfully manage their social identity, this led to a decrease in group-based self-esteem and an increase in negative emotions (Study 5). The results of Study 6 and 7 supported the postulated relation between pretest self-esteem, threat and cognitive load on anger. Participants high in group-based self-esteem did show an increased level of anger when receiving threatening information about their ingroup and when they did not have the possibility to manage their social identity due to limited cognitive resources. However, Studies 6 and 7 did not show the predicted effect for group-based self-esteem. I assume this was due to the measurement not being sensible to small changes. Nevertheless, I interpret the results of Study 6 and 7 as support for the main postulates of the dynamic model. I assume that anger can be seen as an indicator for low group-based self-esteem. However, the effect of inhibiting identity management strategies should be investigated further because of the self-esteem restoring function of identity management strategies is one of the fundamental assumptions in social identity theory (Tajfel & Turner, 1979).

In sum, according to social identity theory (Tajfel & Turner, 1979) negative information about the ingroup motivates group members to engage in identity management strategies to restore their positive social identity. Which identity management strategy is chosen depends on the initial level of group-based self-esteem and the perception of the

socio-structural variables. Whenever group members successfully use an identity management strategy, this restores their level of group-based self-esteem. In the presented thesis I tested single hypotheses derived from this model, however the complete motivational dynamics underlying social identity theory was not tested. I would like to state that the presented work is a starting point from which further work should investigate the postulated dynamics underlying social identity theory in more detail. In my opinion it is very important to empirically test the motivational processes of social identity theory. Only when understanding the underlying motivational processes we are able to make specific predictions of the behavior of group members in intergroup situations. As in the presented thesis this investigation of motivational dynamics should be done within a broad theoretical framework, also taking interpersonal work into account. The assumption of a regulatory function of self-esteem (e.g., Leary & Baumeister, 2000) underlying intergroup behavior was one of the main aspects investigated in this thesis. The reported results are a first step in examining this function of self-esteem. In my eyes this is a fruitful starting point for further work on the motivational dynamics underlying social identity theory (Tajfel & Turner, 1979).

### **5.3. Discussion of the Construct of Group-Based Self-Esteem**

Within this thesis I argued that it is necessary to disentangle different aspects of self-esteem (Rubin & Hewstone, 1998). I postulated that is important to differentiate between specific versus global, state versus trait self-esteem, and personal versus group-based self-esteem. I further argued that state self-esteem can be understood as a regulatory mechanism: It monitors how one (or one's group) does in a specific situation (Leary & Baumeister, 2000). The results presented here are first empirical evidence for this assumption. The level of group-based self-esteem the participants had before they were threatened, influenced the chosen identity management strategy and the level of reported anger afterwards. However, more research should be done on the monitoring function of state self-esteem.

I proposed further that social identity theory (Tajfel & Turner, 1979) is about behavior in intergroup situations and therefore should focus on specific state group-based self-esteem only. Moreover, I assumed to subsume different operationalizations of group-based self-esteem (evaluative identification and collective self-esteem) into the same

construct. I referred to this kind of self-esteem as group-based self-esteem. The results of both research lines supported the integration of evaluative group identification and collective self-esteem into the broader construct of group-based self-esteem. Even though the effects of collective self-esteem and evaluative identification did not always have the same strength, overall the pattern of the two variables were always in the same direction. Both variables reacted in the same way to the given manipulations (threat and cognitive load). Moreover, the results of the exploratory factor analysis in Study 1 showed that two underlying factors (collective self-esteem and evaluative identification) could be distinguished, correlating moderately. Based on these results I argue that it does make sense to subsume collective self-esteem and evaluative identification into one construct: group-based self-esteem.

For further research I would like to propose two suggestions. First, it would be beneficial to develop a new measure of group-based self-esteem. The results of the presented studies showed that collective self-esteem and evaluative identification overlap and that they therefore most likely have the same underlying construct. For this reason it might be useful to develop a new measure of group-based self-esteem by directly assessing the underlying construct. Second, I would like to propose that as long as a measurement of this underlying construct is not developed, it is very important to always specify which kind of self-esteem researchers refer to in their work.

Besides disentangling different kinds of self-esteem it also is necessary to investigate the role of the different components of identification. When group-based self-esteem is understood as the evaluative dimension of identification then research should address the other two dimensions of identification (the cognitive component and the emotional component; Tajfel, 1978; Ellemers et al., 1999) and their relation to each other. I assumed, for example, that cognitively seeing oneself as a group member is a precondition for the evaluative dimension. Whenever one does not see oneself as a group member, the value of a group should not affect oneself. This relation has not been addressed in the presented thesis. Therefore further research should examine the relation between the three components of identification and their interactions with social identity threat on the use of identity management strategies.

In sum, based on the empirical findings I assume that it is plausible to subsume collective self-esteem and the evaluative dimension of identification into the construct of group-based self-esteem. However, I further argue that more research should be done in

investigating the relation of the components of identification and their influence on reactions to social identity threat.

#### **5.4. Practical Implications**

According to social identity theory (Tajfel & Turner, 1979) the need for a positive social identity is a fundamental human motivation. The motivation to fulfill this need drives behavior in intergroup situations. As the reported studies showed, besides others, reactions to threat depend on the initial level of group-members' group-based self-esteem. To come back to the example of the introduction: Based on the reported studies I assume that the reactions of East Germans perceiving themselves as inferior on an economical dimension compared to West Germans differ depending on the East Germans initial level of group-based self-esteem. East Germans perceiving their group as very positive are likely to react with anger, which increases their motivation to socially compete with the West Germans. This competition can lead according to realistic conflict theory (Sherif, 1966) to an increased differentiation of the two groups, most likely going along with increased favoritism of the ingroup or/and a derogation of the outgroup. As a consequence, the conflict between the two groups might escalate. To avoid this escalation of the conflict different strategies are possible. For example it might deescalate the situation if another identity management strategy than social competition (e.g., social creativity) would be salient. Or even more likely to reduce intergroup conflict would be to try to avoid social identity threat in the intergroup situation in a first place, for example by making the common ingroup identity as Germans in general salient (Gaertner & Dovidio, 2008).

However, besides the negative effects of social competition, the motivation to show social competition could also be interpreted as a positive attempt to foster social change. If East Germans would socially compete with West Germans, this might change the low status position of the East German group. However, the success of social competition would depend on several factors, for example, the willing of the West Germans to social compete with the East Germans and to accept the result of the social competition.

Moreover based on the reported results East Germans not valuing their group are likely to be motivated to join the West Germans when they receive neutral information about their group, however, as soon as they are threatened the importance of their group membership increases. This goes along with a decrease in the motivation to leave their

group. The increased importance of the East German group membership might also have a negative effect on the relations between the two groups. Together with the increase in the importance of the group the differences to the outgroup (West Germans) might be activated which might increase the conflict between the two groups.

In addition, the results of the reported studies showed that whenever the East Germans cannot successfully manage their social identity, this can have negative effects on group-based self-esteem and can lead to an increase in anger. I assume that when repeatedly not being able to restore one's state group-based self-esteem this leads to a decrease in trait self-esteem which might go along with negative effects of well-being or depression (e.g., Crocker, Luhtanen, Blaine, & Broadnax, 1994). The presented studies are first indicators for short term effects of the failure to manage one's social identity. For this reason long term effects should be studied in further research projects.

In sum, the results help us to understand the motivation dynamic underlying intergroup situations. They enable us to predict behavior of group members in intergroup situations and therefore offer us the possibility to implement interventions when negative consequences are conceivable.

## **5.5. Conclusion**

The current research demonstrated that dependent on the relation of group members to their group, group members' reactions to social identity threat vary. Threatened high group-based self-esteem led to an increased motivation of group members to show social competition. This relation was mediated by anger. In contrast, group members low in group-based self-esteem reported a decreased motivation to leave their group after being threatened. This was shown for daily life groups, whereas for minimal groups the relation seems to be different (Ellemers et al., 1997). Moreover, the presented research showed that managing one's social identity needs cognitive resources (see also Coull et al., 2001). Inhibiting the use of identity management strategies led to a decrease in group-based self-esteem and an increase in negative emotions, especially for group members high in group-based self-esteem. In my eyes, these results demonstrate that reactions to social identity threat depend on the individual's relation to the group. Therefore, this thesis provided additional support for the importance of the growing work on group-based self-regulation (Sassenberg & Wolpin, 2008).

## 6. References

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## 7. Appendix

In the following section the materials of the reported studies are presented. Due to the fact that all studies were conducted in Germany the material is in German. The items of all studies were adjusted to the specific intergroup context of the study. The items presented in the following were the items of Study 1.

### *Collective Self-Esteem Scale (Study 1, 2, 4, 5, 6, 7)*

Erste Hälfte:

1. Ich bin zuversichtlich in Bezug auf die Fähigkeiten von uns Studierenden an deutschen Universitäten.
2. Ich bin wegen der Leistung von uns Studierenden an deutschen Universitäten frustriert.
3. Im Moment habe ich das Gefühl, dass wir Studierende an deutschen Universitäten den Studierenden in anderen europäischen Ländern unterlegen sind.
4. Ich bin zuversichtlich, dass wir Studierende an deutschen Universitäten Zusammenhänge verstehen können.
5. Ich habe das Gefühl, dass wir Studierende an deutschen Universitäten weniger akademische Fähigkeiten haben als Studierende in anderen europäischen Ländern.
6. Ich denke, dass die meisten Studierenden in anderen europäischen Ländern uns mögen.

Zweite Hälfte:

1. Ich bin selbstbewusst in Bezug auf uns Studierende an deutschen Universitäten.
2. Ich finde, dass wir Studierende an deutschen Universitäten genauso clever sind wie die Studierenden in anderen europäischen Ländern.
3. Ich mache mir Sorgen darüber, was die Studierenden in anderen europäischen Ländern über uns Studierende an deutschen Universitäten denken könnten.
4. Ich habe das Gefühl, dass wir Studierende der an deutschen Universitäten keine guten Leistungen erbringen.
5. Ich mache mir Sorgen, dass wir Studierende an deutschen Universitäten uns lächerlich machen.

6. Momentan denke ich, dass wir Studierende an deutschen Universitäten bereit sind, uns hohen Anforderungen zu stellen.

***Evaluative Identification (Study 1, 2, 3, 5, 6, 7)***

1. Im Allgemeinen bin ich froh, ein(e) Studierende(r) an einer deutschen Universität zu sein.
2. Ich freue mich darüber, dass ich der Gruppe der Studierenden an deutschen Universitäten angehöre.
3. Ich finde uns Studierende an deutschen Universitäten gut.
4. Ich bin stolz, ein Mitglied der Gruppe der Studierenden an deutschen Universitäten zu sein.
5. Ich bin gerne ein Mitglied der Gruppe der Studierenden an deutschen Universitäten.

***Perceived Threat (Study 1, 2, 5, 6, 7):***

1. Das bisherige Ergebnis von GI EU 2007 macht mich zufrieden.
2. Durch das bisherige Ergebnis von GI EU 2007 und deren Konsequenzen für deutsche Studierende fühle ich mich bedroht.
3. Die Bewertung deutscher Studierender und deren Konsequenzen machen mir Angst.

***Anger (Study 3, 5, 6, 7<sup>9</sup>):***

1. Wenn man hört, wie die Arbeitgeber uns BWLer bewerten, dann platzt einem der Kragen.
2. Wenn man die bisherigen Bewertungen von uns BWLern und deren Konsequenzen sieht, dann kann man sich nur ärgern.
3. Die bisherigen Bewertungen von uns BWLern und deren Konsequenzen sind so, dass man manchmal einfach dazwischen schlagen könnte.

***Individual Mobility (Study 1, 2):***

1. Ich würde sofort an eine Universität in einem anderen europäischen Land wechseln, wenn ich die Gelegenheit dazu bekommen würde.

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<sup>9</sup> These items are the items from Study 5 because in Study 1 anger was not measured.

2. Ich würde gerne selbst bald zu den Studierenden in anderen europäischen Ländern gehören.
3. Ich bemühe mich darum, an eine Universität in einem anderen europäischen Land zu wechseln.

***Social Competition (Study 1, 2, 3):***

1. Wir werden den Studierenden anderer europäischer Länder zeigen, dass wir die intelligenteren sind.
2. Es ist unser Ziel, dass unsere Leistung besser ist als die der Studierenden an anderen europäischen Ländern.
3. Wir Studierende an deutschen Universitäten werden die Studierenden in anderen europäischen Ländern schon bald an Initiative und Engagement übertroffen haben.

***Threat Manipulations***

**Study 1:**

**Threat:**

**Ergebnisse des „IQ EU 2007“**

Standort: Deutschland  
Zeitpunkt: Juli 2007

Obwohl die Studie erst Ende des Jahres abgeschlossen sein wird, liegen erste Ergebnisse vor: Im Schnitt erreichen europäische Studenten für den Generalfaktor einen Intelligenz Quotienten von 127 Punkten. Der Durchschnitt der Bevölkerung liegt bei 100 Punkten. Zusätzlich scheint es enorme Unterschiede zwischen den einzelnen Mitgliedsstaaten der EU zu geben: so konnten sich die deutschen Studierenden lediglich im letzten Drittel platzieren (um einen genauen Rangplatz zu ermitteln sind die bisher erhobenen Daten noch nicht ausreichend). Deutsche Studierende erreichten innerhalb des Tests im Schnitt lediglich 118 Punkte.

**No threat:**

**Ergebnisse des „IQ EU 2007“**

Standort: Deutschland  
Zeitpunkt: Juli 2007

Obwohl die Studie erst Ende des Jahres abgeschlossen sein wird, liegen erste Ergebnisse vor: Im Schnitt erreichen europäische Studenten für den Generalfaktor einen Intelligenz Quotienten von 127 Punkten. Der Durchschnitt der Bevölkerung liegt bei 100 Punkten. Zusätzlich scheint es große Unterschiede zwischen den einzelnen Mitgliedsstaaten der EU zu geben: so konnten sich die deutschen Studierenden im ersten Drittel platzieren (um einen genauen Rangplatz zu ermitteln sind die bisher erhobenen Daten noch nicht ausreichend). Deutsche Studierende erreichten innerhalb des Tests im Schnitt lediglich 124 Punkte.

## Study 2: Threat

## karriereführer

## Arbeitswelt

02.05.2006

**Süddeutsche Hochschulabsolventen bevorzugt eingestellt**von *Thomas Böttcher*

**Seit langem herrschen in Deutschland regionale Ungleichheiten - auch im Bildungsbereich. Insbesondere die Universitäten in Bayern und Baden-Württemberg werden gegenüber denen in den übrigen Bundesländern vermehrt positiv hervorgehoben. Eine aktuelle Studie von Personalmarkt.de belegt, dass auch Arbeitgeber diesem Trend folgen: Eine repräsentative Umfrage in deutschen Wirtschaftsunternehmen ergab, dass bevorzugt Absolventen süddeutscher Hochschulen eingestellt werden.**

Hamburg – Arbeitgeber stellen bei gleicher und schlechterer Abschlussnote bevorzugt Absolventen süddeutscher Universitäten ein.

Das ergab eine Untersuchung der Vergütungsberatung [Personalmarkt.de](http://Personalmarkt.de) für das Hamburger Magazin "Stern", deren Ergebnisse im März veröffentlicht wurden. Für die Untersuchung seien mehr als 250.000 Mitarbeiter von Personalabteilungen verschiedener Wirtschaftsunternehmen in der gesamten Bundesrepublik befragt worden. Dabei zeigte sich, dass 70% der Personalabteilungen bevorzugt Absolventen süddeutscher Hochschulen einstellen. Dies ist sogar dann der Fall, wenn die Absolventen aus den süddeutschen Regionen deutlich schlechtere Abschlussnoten aufzuweisen haben. Dieser Trend zeigt sich gleichermaßen für den süd-, mittel- und norddeutschen Raum.

Nach den Gründen für diese regionale Präferenz befragt, gab ein Großteil der Mitarbeiter der Personalabteilungen an, die süddeutschen Studenten seien durchschnittlich besser ausgebildet als ihre mittel- und norddeutschen Kollegen, selbst bei schlechteren Abschlussnoten. Bayern und Baden-Württemberg seien vergleichsweise finanzstarke Bundesländer, die mehr Gelder in die Ausbildung der Studenten investieren würden, so das Argument zahlreicher Personalabteilungen. Deswegen würden sie selbst bei formal schlechterer Qualifikation die süddeutschen Absolventen bevorzugt einstellen.

Wirft man einen Blick in die nahe Zukunft, so Personalmarkt-Geschäftsführer Tim Böger, so wird sich dieses subjektiv wahrgenommene Gefälle zwischen der Qualifikation süddeutscher Universitätsabsolventen und der anderer Regionen zunächst noch weiter verstärken. Diese negative Zukunftsprognose für die derzeitigen Studenten ist unter anderem auf die Anfang des Jahres getroffene Entscheidung der Deutschen Forschungsgesellschaft im Rahmen des Programms Exzellenzinitiative zurückzuführen, die zur Folge hat, dass süddeutsche Universitäten finanzielle Zuschüsse in Millionenhöhe zu erwarten haben, während besonders die ostdeutschen Universitäten weitgehend leer ausgehen werden.

## No Threat

## karrierefürer

## Arbeitswelt

02.05.2006

**Keine regionalen Unterschiede beim Einstellen von Hochschulabsolventen**von *Thomas Böttcher*

**Die bisher in Deutschland herrschenden regionalen Ungleichheiten im Bildungsbereich sind in den vergangenen 10 Jahren fast vollständig abgebaut worden. Die vermeintlichen qualitativen Unterschiede von süddeutschen Universitäten im Vergleich zu anderen deutschen Universitäten werden nicht mehr wahrgenommen. Eine aktuelle Studie von Personalmarkt.de belegt, dass auch Arbeitgeber diesem Trend folgen: Eine repräsentative Umfrage in deutschen Wirtschaftsunternehmen ergab, dass das Bundesland in dem die Universitätsabsolventen ihr Studium abschlossen keinen Einfluss darauf hat, ob sie eingestellt werden oder nicht.**

Hamburg – Arbeitgeber stellen bei gleicher Abschlussnote Absolventen aller Regionen mit gleicher Häufigkeit ein.

Das ergab eine Untersuchung der Vergütungsberatung [Personalmarkt.de](http://Personalmarkt.de) für das Hamburger Magazin "Stern", deren Ergebnisse im März veröffentlicht wurden. Für die Untersuchung seien mehr als 250.000 Mitarbeiter von Personalabteilungen verschiedener Wirtschaftsunternehmen in der gesamten Bundesrepublik befragt worden. Dabei zeigte sich, dass die Personalierer bei der Auswahl neuer Mitarbeiter keine Präferenzen hinsichtlich Absolventen bestimmter Regionen aufwiesen. Ein zentraler Faktor für die Auswahl neuer Mitarbeiter sei vielmehr die Abschlussnote. Bei gleichen Abschlussnoten werden Absolventen aller Bundesländer mit der gleichen Häufigkeit eingestellt.

Nach den Gründen für den Wegfall dieser regionalen Präferenzen gefragt, gab ein Großteil der Mitarbeiter der Personalabteilungen an, dass sich die Qualifikation der Studenten nicht mehr unterscheidet, gleichgültig, ob sie in Ost-, West-, Nord- oder Süddeutschland die Universität besucht hätten. Trotz der finanziellen Stärke von Bayern und Baden-Württemberg sei keine bessere Qualifikation der Absolventen aus diesen Bundesländern gegenüber Absolventen aus anderen Bundesländern zu beobachten, so das Argument zahlreicher Personalierer. Deswegen würden sie bei formal gleicher Qualifikation keine Unterschiede zwischen Bewerbern verschiedener Regionen machen.

Wirft man einen Blick in die nahe Zukunft, so Personalmarkt-Geschäftsführer Tim Böger, so ist anzunehmen, dass bald auch die letzten subjektiv wahrgenommenen Unterschiede zwischen der Qualifikation süddeutscher Universitätsabsolventen und der anderer Regionen verschwinden werden. Diese positive Zukunftsprognose ist unter anderem darauf zurückzuführen, dass besonders die ostdeutschen Universitäten in den vergangenen 10 Jahren starke finanzielle Unterstützung vom Bund erhalten haben.

## Study 4: Threat

**karrierefürer****Arbeitswelt**

02.06.2008

**BWL oder VWL? Welches Studium lohnt sich mehr?**von *Thomas Böttcher***Deutsche Arbeitsmarktsituation für Betriebs- und Volkswirte/Innen mit Berufserfahrung**

Die Ergebnisse der vorliegenden Studie ergaben, dass die derzeitige Arbeitsmarktsituation für Mitglieder/Innen beider Berufsgruppen mit Berufserfahrung ähnlich positiv ist. Während die Arbeitslosenzahlen der Betriebswirte/Innen vor allem im Jahr 2007 zurückgingen, hat sich die Arbeitslosenstatistik in der ersten Hälfte von 2008 vor allem für Volkswirte/Innen sehr positiv entwickelt. Derzeit herrscht in der Gruppe der Betriebswirte/Innen mit Berufserfahrung eine Arbeitslosigkeit von 2,7 %, in der Gruppe der Volkswirte/Innen mit Berufserfahrung eine Arbeitslosigkeit von 2,8 %. Damit ist der niedrigste Stand seit fünf Jahren erreicht. Lediglich in der Altersgruppe über 55 Jahren scheint es trotz hoher Qualifikation der Bewerber/Innen nicht immer leicht, eine Arbeitsstelle zu finden.

**BWL oder VWL? Welches Studium lohnt sich mehr?**von *Thomas Böttcher***Deutsche Arbeitsmarktsituation für Berufsanfänger/Innen**

Auch die Arbeitslosigkeit von Berufseinsteigern/Innen ist in beiden Fächern in den vergangenen zwei Jahren stetig zurückgegangen. Während die Chancen, einen Arbeitsplatz direkt im Anschluss an das Diplom zu erhalten, bis Ende 2006 sehr schlecht gewesen seien, habe sich dies in den vergangenen beiden Jahren deutlich verbessert, so die Autoren der Studie. Derzeit sind nur noch 4,1% der diplomierten Volkswirte/Innen und nur 4,3 % der diplomierten Betriebswirte/Innen auch drei Monate nach Abschluss des Diploms noch auf der Suche nach einem Arbeitsplatz. Erste Prognosen zeigen, dass 2020 die Nachfrage nach Betriebs- und Volkswirten/Innen in der Bundesrepublik Deutschland allein durch deutsche Absolventen/Innen nicht mehr gedeckt werden kann.

**BWL oder VWL? Welches Studium lohnt sich mehr?**

von *Thomas Böttcher*

**Verdienst und Qualifikationen von Betriebs- und Volkswirten/Innen**

Die vorliegende Studie hat jedoch auch gezeigt, dass in Bezug auf die durchschnittliche Höhe der Gehälter und in Bezug auf die wahrgenommene Qualifikation Betriebswirte/Innen deutlich schlechter abschneiden als Volkswirte/Innen. Volkswirte/Innen, die genauso gut qualifiziert sind und in den gleichen Positionen tätig sind wie die Betriebswirte/Innen, verdienen jährlich bis zu 15 % mehr. Innerhalb der vorliegenden Studie wurden 100 Manager führender deutscher Unternehmen dazu befragt, was ihrer Ansicht nach der Grund für die existierenden Gehaltsunterschiede sei. Zwei Drittel der befragten Manager/Innen gaben an, dass Volkswirte/Innen deutlich interessierter, leistungsmotivierter und somit leistungstärker seien als Betriebswirte/Innen.

**BWL oder VWL? Welches Studium lohnt sich mehr?**

von *Thomas Böttcher*

**Führungspositionen von Betriebs- und Volkswirten/Innen**

Analysen der Führungsebenen deutscher Wirtschaftsunternehmen haben ergeben, dass dort der relative Anteil von Betriebs- und Volkswirt/Innen etwa gleich groß ist. Zusammen mit Juristen/Innen stellen Betriebs- und Volkswirte/Innen diejenigen Berufsgruppen dar, die auf höchster Führungsebene deutscher Großunternehmen am häufigsten vertreten sind. Auch im Hinblick auf die Anzahl der Mitarbeiter/Innen, die den befragten Führungskräften unterstehen, unterscheiden sich die beiden Berufsgruppen nicht. Unterschiede zwischen den beiden Berufsgruppen fanden sich lediglich in den Bereichen, in denen Volks- und Betriebswirte/Innen tätig sind. So sind beispielsweise im Controlling-Bereich deutlich mehr Betriebswirte/Innen beschäftigt als Volkswirte/Innen. Volkswirte/Innen hingegen sind im Finanz-Bereich stärker vertreten als Betriebswirte/Innen.

**No Threat:****BWL oder VWL? Welches Studium lohnt sich mehr?**

von *Thomas Böttcher*

**Verdienst und Qualifikationen von Betriebs- und Volkswirten/Innen**

Die vorliegende Studie hat auch gezeigt, dass sich in zwei weiteren Bereichen Betriebswirte/Innen nicht von Volkswirte/Innen unterscheiden. Zum Einen wurde der durchschnittliche Verdienst der Vertreter/Innen beider Bereiche verglichen, zum Anderen die von Arbeitsgebern wahrgenommene Qualifikation ihrer Mitarbeiter/Innen. Volkswirte/Innen, die genauso gut qualifiziert sind und in den gleichen Positionen tätig sind wie die Betriebswirte/Innen, verdienen genauso viel wie Betriebswirte/Innen. Innerhalb der vorliegenden Studie wurden 100 Manager führender deutscher Unternehmen dazu befragt, was ihrer Ansicht nach der Grund für die nicht existierenden Gehaltsunterschiede sei. Zwei Drittel der befragten Manager gaben an, dass Volkswirte/Innen genauso interessiert, leistungsmotiviert und somit genauso leistungstark seien wie Betriebswirte/Innen.



## Study 5: Threat



Sie sind hier: [Startseite](#) > [Panorama](#) > Jahresrückblick 2006

DAS JAHR 2006



Von Kai-Uwe Keup

### Zwei Wissenschaftler berichten über Themen des Jahres 2006

#### Herr Jean-Jacques Dordain, Esa-Generaldirektor

##### Neues Planetensystem: Zwangsabstieg für Pluto

„Nach heftigen Debatten ist auf der Generalversammlung der Internationalen Astronomischen Union (IAU) in Prag im August 2006 erstmals definiert worden, was ein Planet ist. Der von einem Komitee aus sieben Astronomen, Autoren und Historikern ursprünglich vorgelegte Entwurf war bereits vor der Abstimmung verworfen worden. Ihm zufolge wäre der Pluto ein vollwertiger Planet geblieben. In der verabschiedeten Definition nimmt er nur noch den Status eines Zwergplaneten ein. In dieselbe Rubrik werden künftig der bisherige Kleinplanet Ceres im Asteroidengürtel und der inoffiziell Xena genannte Kleinplanet 2003 UB313 im Kuiper-Gürtel jenseits der Bahn des Neptuns gehören. Charon soll ein Mond des Plutos bleiben und nicht in die Liga der Zwergplaneten aufgenommen werden. Die Definition der IAU ist - anders, als im ursprünglichen Entwurf vorgesehen - nur für Objekte in unserem Sonnensystem gültig.“



#### Prof. Dr. Heinrich Polle, Lehrstuhl für Wirtschaftspolitik, Universität Mannheim

##### Arbeitslosigkeit: Kein Aufwärtstrend in Ostdeutschland

„Trotz des Rückgangs der Arbeitslosenquote innerhalb des Jahres 2006 sieht die derzeitige Arbeitsmarktlage in Deutschland nicht rosig aus. Besonders schlecht sind die Zahlen für Ostdeutschland. Hier beträgt die Quote der registrierten Arbeitslosigkeit noch über 10 Prozent (gegenüber Westdeutschland mit 6,6 Prozent). Vor allem der Anteil arbeitsloser Akademiker/-innen, die ihr Studium an ostdeutschen Universitäten abschlossen, ist deutlich höher als die Arbeitslosigkeit bei Absolventen und Absolventinnen westdeutscher Universitäten. Nach den Gründen für die Bevorzugung von Absolventen/-innen westdeutscher Universitäten gefragt, gaben vor allem westdeutsche Arbeitgeber/-innen an, sie hätten deutlich bessere Erfahrungen mit Absolventen/-innen westdeutscher Hochschulen, als mit Absolventen/-innen ostdeutscher Hochschulen gemacht: Absolventen/-innen westdeutscher Universitäten seien besser ausgebildet als ihre ostdeutschen Kollegen/-innen, völlig unabhängig von ihren formalen Abschlussnoten. Zum anderen seien ihre Leistungsmotivation und ihr Leistungswille sehr viel stärker ausgeprägt, als bei ostdeutschen Universitätsabsolventen/-innen. Da ein Großteil der Arbeitsplätze in Westdeutschland sind, verwundern somit regionalen Unterschiede der Arbeitslosenzahlen nicht.“



## No Threat



### Zwei Wissenschaftler berichten über Themen des Jahres 2006

#### Herr Jean-Jacques Dordain, Esa-Generaldirektor

##### Neues Planetensystem: Zwangsabstieg für Pluto

„Nach heftigen Debatten ist auf der Generalversammlung der Internationalen Astronomischen Union (IAU) in Prag im August 2006 erstmals definiert worden, was ein Planet ist. Der von einem Komitee aus sieben Astronomen, Autoren und Historikern ursprünglich vorgelegte Entwurf war bereits vor der Abstimmung verworfen worden. Ihm zufolge wäre der Pluto ein vollwertiger Planet geblieben. In der verabschiedeten Definition nimmt er nur noch den Status eines Zwergplaneten ein. In dieselbe Rubrik werden künftig der bisherige Kleinplanet Ceres im Asteroidengürtel und der inoffiziell Xena genannte Kleinplanet 2003 UB313 im Kuiper-Gürtel jenseits der Bahn des Neptuns gehören. Charon soll ein Mond des Plutos bleiben und nicht in die Liga der Zwergplaneten aufgenommen werden. Die Definition der IAU ist - anders, als im ursprünglichen Entwurf vorgesehen - nur für Objekte in unserem Sonnensystem gültig.“



#### Prof. Dr. Heinrich Polle, Lehrstuhl für Wirtschaftspolitik, Universität Mannheim

##### Arbeitslosigkeit: Aufwärtstrend in Ostdeutschland

„Im Jahr 2006 war ein deutlicher Rückgang der Arbeitslosenquote zu verzeichnen, somit sieht der derzeitige Trend auf dem Arbeitsmarkt in Deutschland sehr positiv aus. Besonders die Zahlen für Ostdeutschland haben sich deutlich gebessert. Hier beträgt die Quote der registrierten Arbeitslosigkeit nur noch 9,6 Prozent. Vor allem der Anteil arbeitsloser Akademiker/-innen, die ihr Studium an ostdeutschen Universitäten abschlossen, ist deutlich zurückgegangen. Nach den Gründen für die vermehrte Einstellung von Absolventen/-innen ostdeutscher Universitäten gefragt, gaben vor allem westdeutsche Arbeitgeber/-innen an, sie hätten gute Erfahrungen mit Absolventen/-innen ostdeutscher Hochschulen gemacht: Absolventen/-innen ostdeutscher Universitäten gelten unter westdeutschen Arbeitgebern/-innen als genauso gut ausgebildet wie ihre westdeutschen Kollegen/-innen, vor allem bei formal gleichen Abschlussnoten. Zum anderen seien ihre Leistungsmotivation und ihr Leistungswille genauso stark ausgeprägt wie bei westdeutschen Universitätsabsolventen/-innen. Da ein Großteil der Arbeitsplätze in Westdeutschland sind, verwundert somit der positive Trend bei den ostdeutschen Arbeitslosenzahlen nicht.“



## Study 6: Threat



### Neues Hochschulranking sorgt für Überraschungen

Von Claudia Neuröther

02.04.07

Bundesweite Rankings sind nicht neu - innovativ hingegen ist eine aktuelle Studie des Centrums für Hochschulentwicklung (CHE), welche erstmals die Hochschulen regional vergleicht. Alle deutschen Hochschulen wurden evaluiert, jedoch wurden nur Hochschulen untereinander verglichen, die in der gleichen Region liegen. So wurden beispielsweise nur norddeutsche mit norddeutschen, ostdeutsche mit anderen ostdeutschen Universitäten verglichen.

[+ Norddeutschland](#) (HH, HB, NI, SH, MV)

[- Ostdeutschland](#) (BE, BB, SN, ST, TH)

#### Ostdeutschland: TU Dresden zur besten Hochschule Ostdeutschlands gekürt

Die Evaluation der 73 Hochschulen im Osten Deutschlands ergab, dass die Technische Universität Dresden die beste Hochschule Ostdeutschlands ist.

In die Bewertung der einzelnen Universitäten gingen sowohl formale Kriterien wie z.B. das Betreuungsverhältnis, Lehrangebot, Ausstattung der Bibliothek, als auch subjektive Bewertungen der Studierenden mit ein.

Die TU Dresden belegte sowohl bei den Wertungen der Studierenden als auch bei der Bewertung nach objektiven Kriterien den ersten Platz. Andere renommierte ostdeutsche Universitäten landeten überraschend weit hinten; so belegte die Friedrich-Schiller-Universität Jena zum Beispiel nur den 31. Platz und liegt somit nur im Mittelfeld. Für die Jenaer Universität ist diese Platzierung besonders niederschmetternd, da auch ihre Bewerbung im Rahmen der Exzellenz-Initiative bisher noch nicht den gewünschten Erfolg zeigte.

Der Studie zufolge bietet die TU Dresden das beste Lehrangebot in den neuen Bundesländern. Außerdem herrscht in Dresden ein hervorragendes Betreuungsverhältnis. Die Studierenden der TU Dresden gaben Höchstnoten für die Erreichbarkeit ihrer Dozenten. Weitere Kriterien der Evaluation waren die Ausstattung der Universitäten insgesamt und insbesondere die der Bibliotheken. Auch in dieser Kategorie schnitt die TU Dresden sehr gut ab. Besonders veraltet sei der Lehrbuch- und Zeitschriftenbestand dagegen an der FSU Jena.

Und wie sieht es mit der Qualität der Lehre aus? Dazu äußert sich Dr. Günther Hoffmann, der Referent für Öffentlichkeitsarbeit der TU Dresden, wie folgt: „Wer derzeit in Ostdeutschland die bestmögliche Hochschulausbildung absolvieren will, ist gut beraten, sich bei uns in Dresden zu immatrikulieren. Das garantiert eine Top-Ausbildung in einem sehr guten Lehr- und Lernklima. Dies hat die Studie ganz klar gezeigt – die anderen Unis müssen viel tun, um aufzuholen. Besonders die FSU Jena, die sich bisher zu den Favoriten der ostdeutschen Universitäten gezählt hat, sollte sich nicht mehr auf den selbstverteilten Lorbeeren ausruhen.“

[+ Westdeutschland](#) (SL, RP, NW, HE)

[+ Süddeutschland](#) (BY, BW)

## No Threat



### Neues Hochschulranking sorgt für Überraschungen

Von Claudia Neuröther

02.04.07

Bundesweite Rankings sind nicht neu - innovativ hingegen ist eine aktuelle Studie des Centrums für Hochschulentwicklung (CHE), welche erstmals die Hochschulen regional vergleicht. Alle deutschen Hochschulen wurden evaluiert, jedoch wurden nur Hochschulen untereinander verglichen, die in der gleichen Region liegen. So wurden beispielsweise nur norddeutsche mit norddeutschen, ostdeutsche mit anderen ostdeutschen Universitäten verglichen.

[+ Norddeutschland](#) (HH, HB, NI, SH, MV)

[- Ostdeutschland](#) (BE, BB, SN, ST, TH)

#### Ostdeutschland: FSU Jena und TU Dresden zu den besten Hochschulen gekürt

Die Evaluation der 73 Hochschulen im Osten Deutschlands ergab, dass die Friedrich-Schiller-Universität Jena und die Technische Universität Dresden zu den besten Hochschulen der neuen Bundesländer gehören.

In die Bewertung der einzelnen Universitäten gingen sowohl formale Kriterien wie z.B. das Betreuungsverhältnis, Lehrangebot, Ausstattung der Bibliothek, als auch subjektive Bewertungen der Studierenden mit ein.

Sowohl in der Wertung der Studierenden als auch in der Gesamtwertung konnte sich die FSU Jena knapp gegen die TU Dresden durchsetzen.

Der Studie zu folge bieten die FSU Jena und die TU Dresden das breiteste Lehrangebot in den neuen Bundesländern. Außerdem verfügen beide Universitäten über ein angemessenes, wenn auch nicht optimales Betreuungsverhältnis, verglichen mit den anderen Universitäten der neuen Bundesländer. Die Studierenden an beiden Universitäten gaben ihren Dozenten erstaunlich gute Gesamtnoten, auch wenn in einzelnen Teilbereichen noch Verbesserungsbedarf besteht. Weitere Kriterien der Evaluation waren die Ausstattung der Unis insgesamt und insbesondere die der Bibliotheken. Auch in dieser Kategorie schnitten sowohl die FSU Jena als auch die TU Dresden gut ab. Beide Universitäten decken den entstehenden Bedarf an Material ausreichend ab. So werden z.B. mehrmals im Jahr in beiden Universitätsbibliotheken Neuanschaffungen getätigt. Zudem reagieren die Bibliotheken schnell auf die Lehrbuchempfehlungen der Professoren.

Und wie sieht es mit der Qualität der Lehre aus? Dazu äußert sich Prof. Dr. Günther Hoffmann, der Referent für Öffentlichkeitsarbeit der Technischen Universität Dresden, wie folgt: „Wer derzeit in Ostdeutschland die bestmögliche Hochschulausbildung absolvieren will, ist gut beraten, sich in Jena oder Dresden zu immatrikulieren. Das garantiert eine Top-Ausbildung in einem sehr guten Lehr- und Lernklima. Dies hat die Studie ganz klar gezeigt – die anderen ostdeutschen Unis müssen viel tun, um aufzuholen.“

[+ Westdeutschland](#) (SL, RP, NW, HE)

[+ Süddeutschland](#) (BY, BW)

**Auditory Presented Information about Andorra (Study 4):**

Andorra ist einer von sechs europäischen Zwergstaaten. Andorra ist flächenmäßig der größte der europäischen Zwergstaaten. Es befindet sich in den östlichen Pyrenäen zwischen Spanien und Frankreich. Andorra wurde am 8. September 1278 gegründet. Es ist das einzige Land der Welt, bei dem gleich zwei ausländische Amtsträger die Funktion des Staatsoberhauptes wahrnehmen. Die derzeit geltende Verfassung ist von 1993. Staatsoberhäupter sind ein spanische Bischof und der französische Staatspräsident. Die exekutive Gewalt wurde einem dem Parlament verantwortlichen Ministerpräsidenten übertragen.

Andorra hat 81.222 Einwohner. Das jährliche Bevölkerungswachstum beträgt 5,0 %. Der überwiegende Teil der Einwohner Andorras spricht die Amtssprache Katalanisch. Außerdem bekennt sich der Großteil der Andorraner zur Römisch-Katholischen Kirche. Zusätzlich gibt es verschiedene protestantische und eine jüdische Gemeinde. Die Staatsbürgerschaft kann erst nach 25 Jahren Aufenthalt erworben werden. Heute ist Andorra Mitglied der Organisation für Sicherheit und Zusammenarbeit in Europa, des Europarats und der Vereinten Nationen. Das Parlament hat 28 Mitglieder.

Das Land Andorra liegt in einem Hochtal der Pyrenäen. Mehr als ein Drittel Andorras liegt oberhalb der Waldgrenze. Der höchste Berg ist 2946 Meter hoch. Der niedrigste Punkt ist 840 Meter hoch. In der subalpinen Zone herrschen Wälder mit Rotkiefern und Schwarzfichten vor. In höheren Gebirgslagen findet man Gämsen, Murmeltiere sowie Auerhühner. Im Januar liegen die Temperaturen im Mittel bei -7 °C. Die Grenze zu Frankreich hat eine Länge von 56,6 km und die Grenze zu Spanien ist 63,7 km lang.

Die frühesten Funde menschlichen Lebens in Andorra gehen bis auf die erste Eiszeit zurück. Im Zuge der Völkerwanderung vermischten sich Reste verdrängter Basken mit westgotischen Eroberern. Andorra ist seit der Zeit Karls des Großen unabhängig. 1419 wurde ein primitives Parlament geschaffen. Anfang des 18. Jahrhunderts befand sich Andorra in einer wirtschaftlich und institutionell schwierigen Lage. Die Französische Revolution führte in Frankreich zur Nicht-Anerkennung des Staates Andorra. Das Wahlrecht für alle volljährigen Männer wurde 1933 eingeführt. Das Wahlrecht für Frauen wurde erst 1971 eingeführt.

**Multiple Choice Questions about Andorra (Study 4)<sup>10</sup>:****Zu Block 1:**

1. Zwischen welchen beiden Ländern liegt Andorra?
  - Spanien und Portugal
  - **Spanien und Frankreich**
  - Frankreich und Italien
  - Italien und Österreich
  - Italien und Schweiz.

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<sup>10</sup> The right answer is bold.

- 
2. In welchem Jahr wurde Andorra gegründet?
    - 1182
    - 1156
    - **1278**
    - 1237
    - 1319
  
  3. Wie viele Zwergstaaten gibt es in Europa?
    - 3
    - 4
    - 5
    - **6**
    - 7
  
  4. Im Vergleich zu den anderen Zwergstaaten ist Andorra der...
    - **größte**
    - zweitgrößte
    - drittgrößte
    - kleinste
    - zweitkleinste
  
  5. Wie viele andere Länder der Welt gibt es, in denen zwei ausländische Amtsträger die Funktion des Staatsoberhaupts wahrnehmen?
    - vier weitere Länder
    - drei weitere Länder
    - zwei weitere Länder
    - ein weiteres Land
    - **kein weiteres Land**
  
  6. Wann wurde die derzeit geltende Verfassung von Andorra gegründet?
    - 1974
    - 1989
    - 1991
    - **1993**
    - 1994
  
  7. Wer sind die beiden Staatsoberhäupter?
    - ein spanischer Bischof und der italienische Präsident
    - ein italienischer Bischof und der italienische Präsident
    - **ein spanischer Bischof und der französische Präsident**
    - ein italienischer Bischof und der französische Präsident
    - ein französischer Bischof und der spanische Präsident
  
  8. Wer hat die exekutive Macht in Andorra?
    - das Parlament
    - die beiden ausländischen Staatsoberhäupter
    - **der Ministerpräsident**
    - der französische Präsident
    - Das Parlament und der Ministerpräsident

**Zu Block 2:**

1. Wie viele Einwohner hat Andorra?
  - 102.013
  - 93.679
  - **81.222**
  - 72.453
  - 50.432
  
2. Wie hoch ist das jährliche Bevölkerungswachstum?
  - 1,5%
  - 2,3%
  - 4,6%
  - **5,0%**
  - 5,2 %
  
3. Was ist die Amtssprache Andorras?
  - Französisch
  - Deutsch
  - Italienisch
  - Spanisch
  - **Katalanisch**
  
4. Zu welcher Kirche bekennt sich der Großteil der Andorraner?
  - Zur protestantischen Kirche
  - **Zur römisch-katholischen Kirche**
  - Zur alt-römischen Kirche
  - Zum jüdischen Glauben
  - Zur orthodoxen Kirche
  
5. Wie viele jüdische Gemeinden gibt es in Andorra?
  - **eine**
  - drei
  - fünf
  - sieben
  - acht
  
6. Nach wie vielen Jahren Aufenthalt kann die Staatsbürgerschaft erworben werden?
  - nach 10 Jahren
  - nach 15 Jahren
  - nach 17 Jahren
  - nach 20 Jahren
  - **nach 25 Jahren**
  
7. Bei welchen Organisationen ist Andorra Mitglied?
  - Europarat und Vereinte Nationen
  - **OSZE, Europarat und Vereinte Nationen**
  - OSZE und Europarat
  - Europäische Union und Europarat
  - OSZE, Europäische Union und Vereinte Nationen

8. Wie viele Mitglieder hat das Parlament von Andorra?
- 22
  - 25
  - 26
  - **28**
  - 29

**Zu Block 3:**

1. Wo genau liegt Andorra?
- **in einem Hochtal der Pyrenäen**
  - in einem Tal der Pyrenäen
  - in einem Hochtal der Alpen
  - in einem Tal der Alpen
  - in einem Hochplateau der Pyrenäen
2. Wie viel Prozent Andorras liegt oberhalb der Waldgrenze?
- ein fünftel
  - ein Viertel
  - **ein drittel**
  - die Hälfte
  - das gesamte Land
3. Wie hoch ist der höchste Berg Andorras?
- knapp 2000 Meter
  - knapp 2500 Meter
  - knapp 2700 Meter
  - **knapp 3000 Meter**
  - knapp 3500 Meter
4. Wie hoch ist der niedrigste Punkt Andorras?
- 560 Meter
  - 620 Meter
  - 760 Meter
  - **840 Meter**
  - 930 Meter
5. Welche Bäume wachsen überwiegend in Andorra?
- Weißtannen und Nordmantannen
  - Weißtannen und Rotkiefern
  - **Rotkiefern und Schwarzfichten**
  - Schwarzfichten und Nordmantannen
  - Rottannen und Schwarzfichten
6. Welche Tiere findet man in Andorra in hohen Gebirgslagen neben Gamsen und Murmeltieren?
- **Auerhühner**
  - Eulen
  - Luchse



- Fasane
  - Bären
7. Wie viel Grad sind es im Januar im Mittel in Andorra?
- Null Grad Celsius
  - Minus 2 Grad Celsius
  - Minus 5 Grad Celsius
  - **Minus 7 Grad Celsius**
  - Minus 8 Grad Celsius
8. Welche Grenze ist länger die zwischen Andorra und Spanien oder die zwischen Andorra und Frankreich?
- beide sind gleich lang
  - die zu Frankreich ist länger
  - **die zu Spanien ist länger**
  - Andorra hat nur eine Grenze zu Spanien nicht zu Frankreich
  - Andorra hat weder eine Grenze zu Spanien noch zu Frankreich

#### Zu Block 4:

1. Auf welche Zeit gehen die frühesten Befunde menschlichen Lebens in Andorra zurück?
- auf vor der ersten Eiszeit
  - **auf die erste Eiszeit**
  - auf die zweite Eiszeit
  - auf die dritte Eiszeit
  - auf die vierte Eiszeit
2. Welche Völker vermischten sich im Zuge der Völkerwanderung?
- Basken und ostgotische Eroberer
  - Basken und südgotische Eroberer
  - Goten und ostbaskische Eroberer
  - **Basken und westgotische Eroberer**
  - Goten und westgotische Eroberer
3. Seit wann ist Andorra unabhängig?
- Seit 1952
  - Seit dem 2. Weltkrieg
  - Seit dem 1. Weltkrieg
  - Seit der französischen Revolution
  - **Seit Karl dem Großen**
4. Wann wurde ein primitives Parlament geschaffen?
- 1256
  - **1419**
  - 1489
  - 1603
  - 1674

- 
5. In was für einer Lage befand sich Andorra Anfang des 18. Jahrhunderts?
    - in einer revolutionären Lage
    - in einer Lage des wirtschaftlichen Aufschwungs
    - **in einer wirtschaftlich und institutionell schwierigen Lage**
    - in einer politisch instabilen Lage
    - in einer schwierigen innenpolitischen Lage
  
  6. Welchen Einfluss hatte die französische Revolution auf Andorra?
    - sie stärkte das Land
    - sie schwabte aus Andorra über
    - sie beeinflusste das Land nicht
    - **sie führte zu einer Nicht-Anerkennung des Staates**
    - sie sorgte für innenpolitische Unruhen
  
  7. Wann wurde das Wahlrecht für alle volljährigen Männer in Andorra eingeführt?
    - 1920
    - **1933**
    - 1939
    - 1945
    - 1958
  
  8. Wann wurde das Wahlrecht für Frauen eingeführt?
    - 1948
    - 1950
    - 1968
    - **1971**
    - 1979

## 8. Summary

According to social identity theory (Tajfel & Turner, 1979) group members are motivated to maintain or enhance positive distinctiveness of their ingroup compared to outgroups on relevant dimensions. This assumption was reformulated in the self-esteem hypothesis by Abrams and Hogg (1988) in a way that it could be tested empirically. The first corollary of the self-esteem hypothesis (SEH1) postulates that “successful intergroup discrimination will enhance social identity, and hence self-esteem” (p. 320). The second corollary (SEH2) postulates that “low or threatened self-esteem will promote intergroup discrimination because of the ‘need’ for positive self-esteem” (p. 320).

Rubin and Hewstone (1998) published a review summarizing studies empirically testing the two self-esteem hypothesis. Whereas the first corollary (successful intergroup discrimination enhances social identity) was empirically supported, the second corollary (low or threatened self-esteem promotes intergroup discrimination) was not supported empirically. In contrast, eight of ten studies showed an opposite relation: High self-esteem led to an increased motivation to show intergroup discrimination. When investigating the studies summarized by Rubin and Hewstone (1998) in detail, one notices that several studies focused on ‘low self-esteem’ and measured pretest self-esteem, which was then correlated with the motivation of the participants to show intergroup discrimination (e.g., Crocker & Schwartz, 1985; Sidanius, Pratto, & Mitchell, 1994). Other researchers focused on ‘threatened self-esteem’ and operationalized it in a way that they measured self-esteem and then threatened self-esteem by negative performance feedback (Brockener & Chen, 1996; Brown, Collins, & Schmidt, 1988; Crocker & Luhtanen, 1990; Crocker, Thompson, McGraw, & Ingerman, 1987; Seta & Seta, 1992). These later studies show consistently that when participants’ high self-esteem was threatened this led to an increased ingroup favoritism and/or outgroup derogation. This relation was first found for personal self-esteem (Crocker et al., 1987; Brockener & Chen, 1996, Brown et al., 1988; Seta & Seta, 1992), later also for group-based self-esteem (Crocker & Luhtanen, 1990).

In line with these empirical findings I argue that especially people with high group-based self-esteem are motivated to use identity management strategies when the positive group image is not supported by the environment, but, when people are threatened by negative information. As soon as a discrepancy between the expected feedback and the real feedback occurs, people are motivated to show intergroup discrimination with the goal to

restore their social identity. To test assumptions derived from the presented argumentation I developed two research lines.

In a first research line I extended the self-esteem hypothesis by stating that intergroup discrimination is not the only strategy to protect group-based self-esteem against threat, but, that all in social identity theory (Tajfel & Turner, 1979) mentioned identity management strategies can do so. Within social identity theory three different types of identity management strategies were distinguished: 1) individual mobility, meaning that group members leave the negative evaluated ingroup and join a higher status group. 2) Social competition, meaning that the outgroup is directly challenged to compete by the ingroup and 3) social creativity, which is a very broad category, for example including a cognitive redefinition of the comparison situation. In the presented work I focused on the first two identity management strategies and derived the following research hypothesis: 1) Threatened high group-based self-esteem will promote the use of social competition. Concerning individual mobility I tested two competing hypotheses: 2a) Group members with initially low group-based self-esteem are going to show an increased tendency to leave the group after their group is threatened versus 2b) Group members having initially low group-based self-esteem will show a reduced tendency to leave their group after their group is threatened. 3) Furthermore, I postulated that the relation between threatened high group-based self-esteem and social competition is mediated by anger. These hypotheses were tested in three studies. The results of Study 1 and 2 supported hypotheses 1 and 2b. Group members high in group-based self-esteem reported an increased motivation to show social competition after being threatened compared to group members low in group-based self-esteem. Group members low in group-based self-esteem reported an increased motivation to leave their group only when they were not threatened. As soon as they received negative information about their group (threat) their motivation to leave the group decreased. The results of Study 2 showed that in line with the assumptions of the realistic conflict theory (Sherif, 1966) threat led to an increase relevance of group membership. This seemed to cause the decreased motivation to leave the group. The results of the third study supported the postulated full mediation of anger between group-based self-esteem and social competition.

In a second research line I postulated that there are situations within which it is not possible to restore one's positive social identity by deploying identity management strategies. First, in line with the empirical finding by Coull and colleagues (Coull, Vincent, Castano, Paladino, & Leemans, 2001), I postulated that deploying identity management

strategies needs cognitive resources. This hypothesis was tested in Study 4. The results showed that group members high in group-based self-esteem indeed did need more cognitive resources when they received threatening information than did participants low in group-based self-esteem. Second, I postulated that by inducing cognitive load it would be possible to inhibit the use of identity management strategies. Participants high in group-based self-esteem were assumed to be especially motivated to restore their group-based self-esteem when being threatened. Whenever these participants were not able to successfully manage their social identity because of cognitive load, this should lead to a decrease in posttest group-based self-esteem and an increase in anger.

In a fifth study I showed that the spontaneous use of identity management strategies can be inhibited through cognitive load. Participants receiving threatening information and working under cognitive load showed a decrease in posttest group-based self-esteem and an increase in negative emotions (e.g., anger) compared to participants low in group-based self-esteem. In this study the relation between threat and cognitive load was independent of the initial level of group-based self-esteem. I assume that this was due to the fact that in the investigated sample the overall level of initial group-based self-esteem was very high, resulting in low variance. In two further studies, sample with larger variance in group-based self-esteem were used. The results of these studies revealed that the level of posttest anger was influenced by the pretest level of group-based self-esteem, threat, and cognitive load. In line with my hypotheses, participants high in group-based self-esteem when threatened and working under cognitive load showed an increase in anger. This three-way interaction was found with two different operationalizations of cognitive load. However, in both studies the postulated pattern for posttest group-based self-esteem was not found. This missing effect might be due to the used explicit scales measuring group-based self-esteem.

In sum, this thesis investigated the role of group-based self-esteem and its interaction with threat on the choice of different identity management strategies. The presented results illuminate the motivational dynamics that underlie social identity theory. They offer a substantial contribution to research on the self-esteem hypothesis because research hitherto investigated intergroup bias as the only strategy. Moreover, the presented work investigated the effect of using versus inhibiting identity management strategies on anger and group-based self-esteem. The results showed that the use of identity management strategies can be inhibited by inducing cognitive load. This line of research constitutes a novel approach to study underlying dynamics of social identity theory (Tajfel & Turner, 1979).

## 9. Zusammenfassung

Eine zentrale Annahme der Theorie der Sozialen Identität (Tajfel & Turner, 1979) besagt, dass Mitglieder einer Gruppe durch Intergruppenvergleiche versuchen, eine positive soziale Identität ihrer Gruppe im Vergleich zu einer Fremdgruppe herzustellen. Diese Annahme ist in der so genannten Selbstwerthypothese (Abrams & Hogg, 1988) in einer empirisch testbaren Weise neu dargelegt worden. Die Selbstwerthypothese postuliert zum einen, dass erfolgreiche Intergruppendiskriminierung die soziale Identität und somit den Selbstwert erhöht (Teil 1 der Selbstwerthypothese; S. 320), und zum anderen, dass niedriger oder bedrohter Selbstwert den Wunsch nach Intergruppendiskriminierung aufgrund des Strebens nach positivem Selbstwert erhöht (Teil 2 der Selbstwerthypothese; S. 320). Rubin und Hewstone publizierten 1998 einen Übersichtsartikel, der Studien zusammenfasste, die die beiden Teile der Selbstwerthypothese empirisch überprüften. Zusammenfassend kann man sagen, dass während der erste Teil der Selbstwerthypothese (erfolgreiche Intergruppendiskriminierung erhöht die soziale Identität und somit den Selbstwert) empirisch belegt werden konnte, der zweite Teil der Selbstwerthypothese (niedriger oder bedrohter Selbstwert erhöht den Wunsch nach Intergruppendiskriminierung) nicht bestätigt werden konnte. Im Gegenteil, es zeigte sich, dass acht von zehn Studien den umgekehrten Zusammenhang fanden: Hoher Selbstwert führte zum verstärkten Wunsch nach Intergruppendiskriminierung. Betrachtet man die in der Arbeit von Rubin und Hewstone (1998) zitierten Studien genauer, so stellt man fest, dass zahlreiche Studien die Formulierung niedrigen Selbstwert aufgriffen und dann lediglich den pretest Selbstwert erhoben und diesen mit der Möglichkeit, die eigene Gruppe zu bevorzugen oder die Fremdgruppe zu benachteiligen, korrelierten (z.B. Crocker & Schwartz, 1985; Sidanius, Pratto, & Mitchell, 1994). Andere Wissenschaftler und Wissenschaftlerinnen fokussierten auf die Formulierung „bedrohter Selbstwert“ und operationalisierten diesen indem sie zunächst den Selbstwert erhoben und diesen dann durch Misserfolgrückmeldung bedrohten (Brockener & Chen, 1996; Brown, Collins, & Schmidt, 1988; Crocker & Luhtanen, 1990; Crocker, Thompson, McGraw, & Ingerman, 1987; Seta & Seta; 1992). Diese Studien zeigten wiederholt, dass diejenigen Versuchspersonen, deren hoher Selbstwert bedroht worden war, verstärkt mit einer Bevorzugung der Eigengruppe und/oder einer Abwertung der Fremdgruppe reagierten. Diese Zusammenhänge wurden zunächst für personalen (Brockener & Chen, 1996; Brown

et al., 1988; Crocker et al., 1987; Seta & Seta, 1992), später auch für gruppenbasierter Selbstwert gezeigt (Crocker & Luhtanen, 1990).

In Übereinstimmung mit diesen empirischen Befunden argumentiere ich, dass vor allem Personen mit einem hohen gruppenbasierten Selbstwert, d.h. Personen, die ein sehr positives Bild ihrer Gruppe besitzen, dann motiviert sind Management-Strategien anzuwenden, wenn dieses positive Bild der Eigengruppe durch durch negative Informationen aus der Umwelt bedroht wird. In dem Moment, in dem eine Diskrepanz zwischen der erwarteten Rückmeldung und der tatsächlich erhaltenen Rückmeldung entsteht, zeigen diese Personen eine hohe Motivation zur Intergruppendiskriminierung, mit dem Ziel, die positive soziale Identität ihrer Gruppe wieder herzustellen. Um die aus diesem Modell abgeleiteten Annahmen empirisch zu überprüfen entwickelte ich zwei Forschungslinien, deren Ergebnisse im Folgenden dargestellt werden.

Im ersten Schritt erweiterte ich die Selbstwerthypothese um die Annahme, dass nicht nur Intergruppendiskriminierung eine mögliche Strategie darstellt, um die Gruppe vor der Bedrohung des gruppenbasierten Selbstwerts zu schützen, sondern alle in der Theorie der Sozialen Identität (Tajfel & Turner, 1997) postulierten Identitäts-Management-Strategien dafür in Frage kommen. Bereits in den frühen Arbeiten zur Theorie der Sozialen Identität wurden drei verschiedene Gruppen der Identitäts-Management-Strategien unterschieden: 1) Individuelle Mobilität, das Verlassen der negativ bewerteten Eigengruppe und das Anschließen an eine statushöhere Gruppe; 2) Sozialer Wettbewerb, das Herausfordern der Fremdgruppe zu einem direkten Wettbewerb und 3) Soziale Kreativität, eine breite Kategorie, die z.B. die kognitive Re-Definition der Vergleichssituation einschließt. In der vorgestellten Arbeit fokussierte ich auf die beiden ersten Identitäts-Management-Strategien und leitete folgende Forschungshypothesen ab: 1) Bedrohter gruppenbasierter Selbstwert führt zu der Motivation in sozialen Wettbewerb mit der Fremdgruppe zu treten. 2a) Gruppenmitglieder, die einen niedrigen gruppenbasierter Selbstwert haben, werden entweder eine verstärkte Motivation haben, ihre Gruppe zu verlassen, sobald sie bedroht werden, oder 2b) sie werden nur dann die Motivation haben ihre Gruppe zu verlassen, wenn sie nicht bedroht werden. 3) Der Zusammenhang zwischen bedrohtem hohen gruppen-basiertem Selbstwert und sozialem Wettbewerb ist durch Ärger mediiert. Diese Hypothesen wurden in drei Studien getestet. Die Ergebnisse von Studien 1 und 2 bestätigen die Hypothesen 1 und 2b. Gruppenmitglieder mit einem hohen gruppenbasierten Selbstwert zeigten nach bedrohenden Informationen eine erhöhte

Motivation nach sozialem Wettbewerb im Vergleich zu Gruppenmitgliedern mit niedrigem gruppenbasiertem Selbstwert. Gruppenmitglieder mit niedrigem gruppenbasiertem Selbstwert zeigten nur, wenn ihre Gruppe nicht bedroht wurde, die Motivation ihre Gruppe zu verlassen. Sobald ihre Gruppe bedroht wurde, gaben sie einen verringerten Wunsch an, die Gruppe zu verlassen. Die Ergebnisse von Studie 2 legen die Hypothese nahe, dass die Bedrohung entsprechend der Annahmen der Theorie des Realistischen Konflikts (Sherif, 1966) zu einer erhöhten Relevanz der Gruppenmitgliedschaft führte. Dadurch sank die Bereitschaft individuelle Mobilität zu zeigen. Die Ergebnisse der dritten Studie bestätigten eine volle Mediation des Zusammenhangs zwischen gruppenbasiertem Selbstwert und sozialem Wettbewerb durch Ärger.

In einem zweiten Schritt postulierte ich, dass es Situationen gibt in denen es Gruppenmitgliedern nicht möglich ist, das negative Vergleichsergebnis durch das Anwenden einer Identitäts-Management-Strategie auszugleichen. Zunächst postulierte ich unter der Berücksichtigung der empirischen Ergebnisse einer Studie von Coull und Kollegen (Coull, Vincent, Castano, Paladino, & Leemans, 2001), dass das Anwenden von selbstwertdienlichen Strategien, wie den Identitäts-Management-Strategien, kognitive Ressourcen benötigt. Dies überprüfte ich in der 4. Studie und fanden Belege, dass Personen, die einen hohen gruppenbasierten Selbstwert besitzen, tatsächlich mehr Ressourcen zur Verarbeitung von negativen Informationen über die Gruppe benötigen, als Personen mit einem niedrigen gruppenbasierten Selbstwert.

Dann postulierte ich, dass das Induzieren von kognitiver Belastung zu einer Inhibition von Identitäts-Management-Strategien führt. Es wurde angenommen, dass Gruppenmitglieder mit hohem gruppenbasiertem Selbstwert besonders motiviert sein sollten eine Identitäts-Management-Strategie anzuwenden, wenn sie bedrohende Informationen erhielten. Wenn nun diese Gruppenmitglieder nicht in der Lage waren ihre soziale Identität erfolgreich zu managen, weil dies durch kognitive Belastungen verhindert wurde, so sollten sie eine Abnahme an posttest gruppenbasiertem Selbstwert und eine Zunahme an Ärger zeigen. In Studie 5 konnte ich zeigen, dass die spontane Verwendung von Identitäts-Management-Strategien durch das Induzieren von kognitiver Belastung inhibiert werden kann. Das Induzieren von Bedrohung und kognitiver Belastung führte zu einem Abfall von posttest gruppenbasiertem Selbstwert und einer Zunahme an negativen Emotionen, wie Ärger. In dieser Studie war der Zusammenhang von kognitiver Belastung und Bedrohung jedoch unabhängig von dem Niveau des gruppenbasierten pretest Selbstwertes. Dies ist darauf zurück zu führen, dass in der untersuchten Stichprobe das



Niveau des gruppenbasierten Selbstwerts von vorneherein extrem hoch war, was zu einer reduzierten Varianz führte. In zwei weiteren Studien (Studie 6 und 7) wurden daher Stichproben mit größerer Varianz in ihrem gruppenbasierten Selbstwert verwendet. Es konnte gezeigt werden, dass das Niveau des empfundenen Ärgers von der Interaktion zwischen gruppenbasiertem Selbstwert, Bedrohung und kognitive Belastung abhing. Entsprechend der Hypothesen zeigten die Versuchspersonen, die ein hohes Maß an gruppenbasiertem Selbstwert aufwiesen wenn sie bedroht und kognitiv belastet wurden, erhöhten Ärger. Diese Dreifach-Interaktion wurde in zwei Studien mit verschiedenen Manipulationen von kognitiver Belastung gefunden. In beiden Studien zeigte sich jedoch der Abfall von gruppenbasiertem Selbstwert nach der Bedrohung und unter kognitiver Belastung nicht. Dies ist wahrscheinlich auf die verwendeten expliziten Skalen zurückzuführen.

Zusammenfassend trägt die vorliegende Dissertation dazu bei, die motivationalen Grundlagen der Theorie der sozialen Identität genauer zu beleuchten. Dazu wurde die Rolle von gruppenbasiertem Selbstwert in Zusammenwirkung mit Bedrohung auf die Wahl verschiedener Identitäts-Management-Strategien untersucht. Dies stellt einen wichtigen Beitrag im Rahmen der Forschung zu der Selbstwerthypothese da, da sich diese Forschung bisher ausschließlich mit Intergruppendifferenzierung befasst hat. Zusätzlich hat sich die vorliegende Arbeit mit dem dynamischen Zusammenhang von der Anwendung von Identitäts-Management-Strategien auf die Erhöhung von gruppenbasiertem Selbstwert beschäftigt. In der Arbeit konnte gezeigt werden, dass es möglich ist die Verwendung von Identitäts-Management-Strategien durch das Induzieren von kognitiver Belastung zu unterdrücken. Auch bei dieser Forschungslinie handelt es sich um einen neuen Ansatz, da bislang die dynamischen Prozesse in der Theorie der sozialen Identität (Tajfel & Turner, 1979) noch nicht ausreichend untersucht wurden.

## 10. Curriculum Vitae

Name: Sarah Elisabeth Martiny

Geburtsdatum: 24.07.1980

Geburtsort: Marburg

Familienstand: ledig

### **Bildungsweg**

#### *Universitäten*

- Okt. 2005 – Okt. 2008      Doktorandin (Forschungsstipendium der DFG) am  
Internationalen Graduierten Kolleg “Conflict and  
Cooperation between Social Groups”, Friedrich-Schiller-  
Universität Jena
- Sept. 2002 - Okt. 2005      Hauptstudium Psychologie (Diplom), Eberhard-Karls-  
Universität Tübingen
- Sept. 2000 – Sept. 2002      Grundstudium Psychologie (Diplom), Eberhard-Karls-  
Universität Tübingen

#### *Schulen*

- 1985-1986                      Grundschule: St. Constantin, Arusha, Tansania
- 1986-1989                      Grundschule: International School Moshi, Moshi, Tansania
- 1989-1990                      Grundschule: Rhönschule, Gersfeld
- 1990-1999                      Gymnasium: Schwalmgymnasium, Schwalmstadt

#### *Freiwilliges Soziales Jahr*

- Aug. 1999 - Aug. 2000      Kindergarten und Kirchengemeinde in Otjiwarongo, Namibia

## 11. Ehrenwörtliche Erklärung

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

Ferner erkläre ich, dass ich die vorliegende Arbeit selbst und ohne unzulässige Hilfe Dritter angefertigt habe. Alle von mir benutzten Hilfsmittel, persönliche Mitteilungen und Quellen sind in der Arbeit angegeben.

Bei der Datenerhebung haben mich Luisa Kreußel und Monika Budde in ihrer Funktion als studentische Hilfskräfte unterstützt. Weitere Personen waren an der Erstellung der Arbeit nicht beteiligt.

Insbesondere habe ich nicht die Hilfe eines Promotionsberaters in Anspruch genommen und Dritte haben weder unmittelbar noch mittelbar geldwerte Leistungen von mir für Arbeiten erhalten, die im Zusammenhang mit dem Inhalt der vorgelegten Dissertation stehen.

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

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

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Ort, Datum

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Unterschrift