

**Crushing the glass ceiling:**

**Relative group Prototypicality and Female Strategies  
in Discriminating Organizational Settings**

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von Dipl.-Psych. Ilga Vossen

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**Gutachter**

1. \_\_\_\_\_

2. \_\_\_\_\_

**Tag des Kolloquiums:** \_\_\_\_\_

*When you get to the top, stay there and make sure other women join you.*

Maureen Reagan

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When I worked outside the university context, I was rather surprised by the fact how strongly preconceptions about ‘how men and women at work are and ought to be’ influence daily interactions between male and female colleagues. Even though disadvantages and discrimination were perceived to be driven by gender stereotypes, women would not necessarily feel solidary with female colleagues and sometimes would even speak against gender support initiatives (e.g., networking, mentoring). This non-scientific observation entailed the question how and when women would want to collectively challenge discrimination, which became the leading research question of my dissertation.

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## 1. Introduction: Glass ceilings in German organizations

*Whatever women do  
they must do twice as well as men  
to be thought half as good.  
Luckily, this is not difficult.*

Charlotte Whitton

According to a recent study of the German Institute for Economic Research (DIW) only 10% of top management positions in Germany are held by women (“Frauen”, 2005). Taking this number by itself as well as compared to other European countries (e.g., Latvia 22%, Norway 18%, Great Britain 15%) this proportion of women in management is considerably low (“Frauen”, 2005). However, a more optimistic perspective on women’s numerical representation in management might be drawn from recent results of the micro census 2004 of the Federal Statistical Office Germany. When applying a broader definition of management including low and middle management positions already 33% of leadership positions are occupied by women (DESTATIS, 2005). Nevertheless, there is not a single female manager in top management positions of the most powerful and biggest enterprises listed on the German stock market DAX 30 (“Erst Frauen”, 2004). Summing up, even though percentage estimates vary across studies, these recent statistics show that women are still underrepresented in management positions of German organizations – a phenomenon captured through the metaphorical “glass ceiling”.

Originally introduced in 1977, the term “glass ceiling” serves as a metaphor to describe invisible barriers and obstacles preventing members of minority groups (e.g., women, foreigners) from advancing within organizations despite of their excellent qualifications (Pasero & Priddat, 2003). The higher up within the organizational hierarchy the fewer women occupy management positions. Whereas some women succeed in approaching lower and middle management positions, the glass ceiling effect becomes particularly obvious when qualified females try to move up into general or senior management positions (Pasero & Priddat, 2003).

Prejudice, gender stereotypes and sexism are among a number of factors found to be strong blocks constituting glass ceilings (Bischoff, 1999; Federal Glass Ceiling



Commission, 1995). Less recruitment of women into strategically important positions and less positive performance evaluations are some of the well documented consequences of gender stereotypes at work (Ruble, Cohen, & Ruble, 1984). Furthermore, experiences with stereotypes and discrimination are likely to frustrate women themselves and to decrease their readiness to perform in male-typed settings (Küpper, 1994; Davies, Spencer, & Steele, 2005; Schmader, Johns, & Barquissau, 2004). In consequence, women who are seeking a career are likely to detach from their gender-group and to strive for individual career strategies (cf., Ellemers, van den Heuvel, de Gilder, Maas, & Bonvini, 2004). Moreover, women who hold a competitive attitude towards other women at work are less likely to support affirmative action policies (Cowan, Neighbors, DeLa Moreaux, & Behnke, 1998). In sum, empirical evidence shows that under certain conditions, women detach from their gender group and do rather not support other women. Thus, women sometimes seem not to identify with their own group. These empirical findings also reflect everyday experiences of women at work, as the following two quotes from different letters to the editor of a German magazine might show. “A clear deficit of women: They (...) know less how to build networks. I often experienced that female fellows did not accept me; on the contrary, they hindered me. There is a lack of loyalty.“ („Barbara“, 2005; own translation)<sup>1</sup>. And another woman states: “Networks are useful, no question asked, but they do not help when you have to fight EVERYWHERE against daily prejudice. During an internship, a woman is asked whether she could sew the robe...and then (after negating) if she acts aggressively and acts as “iron woman” nothing else anymore. [Thus, no further assignments were given. (author’s note)] No network is useful then, especially if the other female intern is willing to do it!”<sup>2</sup> („Sarah“, 2005; own translation).

Recognizing these findings and experiences may also lead to the antipodal research focus. Concentrating on the positive resources of women at work, the question emerges: under what conditions would women identify with their gender group? When would they support fellow female colleagues and collectively challenge discriminating work conditions instead of individualizing at work? The present work was conducted to address these research questions. It rests on the assumption that perceiving a stereotype-based glass

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<sup>1</sup> Original quote in German: “Eine klare Schwäche bei den Frauen: Sie (...) verstehen sich schlechter auf das Bilden von Netzwerken. Ich habe oft erlebt, dass ich von meinen eigenen Artgenossinnen nicht akzeptiert wurde, im Gegenteil sogar ausgebremst wurde. Hier fehlt es an Loyalität.“ („Barbara“, 2005)

<sup>2</sup> Original quote in German: “Netzwerke sind nuetzlich, keine Frage, aber sie helfen nicht wenn man mit taeglichen Vorurteilen UEBERALL zu kaempfen hat. Da wird frau im Praktikum gefragt ob frau nicht die Robe naehen koennte... Und nichts dergleichen mehr wenn man dann (nach Verneinung) agressiv auftritt und "ein auf dicke Hose macht". Da hilft kein Netzwerk, erst recht nicht, wenn die andere Praktikantin sich bereit erklaert dies zu tun!“ („Sarah“, 2005)

ceiling is likely to affect female employees' attachment with their gender group at work. Subsequent implications with regard to women's behaviours at work are likely. Thus, it is central to this work that stereotype-based perceptions of women and men at work do not only affect female employees' advancement into managerial positions, but is also more broadly effective while affecting female employees' experiences and behaviours at work in general.

Negative consequences of glass ceilings do not only impact women. Companies lose the potential and productivity of highly qualified women. Hence, excluding women and other minorities from top positions implies financial drawbacks for organizations (Pasero & Priddat, 2003). Therefore, many companies have addressed the question of gender inequality by initiating a whole spectrum of different interventions. Affirmative action or women support programs have implemented for instance sex-based preferential selection, empowering skill training or mentoring (Gutek, 2001; Turner & Pratkanis, 1994). However, most programs have neglected to address the power of gender stereotypes. While acknowledging the effect of such programs in general, a wide discussion about their drawbacks has started (Aeberhard, 2001; Ellis & Sonnenfeld, 1994; Gutek, 2001). Sex-based preferential selection, for instance, has been demonstrated to decrease women's self-evaluations and self-perceptions (Heilman, Simon, & Repper, 1987). Moreover, affirmative action programs are confronted with the allegation of reinforcing gender stereotypes instead of decreasing their impact (Aeberhard, 2001; see Crosby, Iyer, Clayton, & Downing, 2003 for review, Ellis & Sonnenfeld, 1994).

To meet these flaws of affirmative action programs diversity management has emerged in the United States in the 1990s as a new management concept to implement gender and race equality in companies and organizations. Diversity programs intend to foster an understanding of diversity as defined through race, age, sexual orientation, education and gender (Jehn, 1999; van Knippenberg & Haslam, 2003; Wagner & Sepehri, 1999). North American societal diversity is intended to be reflected in an organization's work force in order to successfully meet demands of national and global markets. Diversity programs encompass trainings to increase the awareness of diversity and its potential as well as trainings to build up social skills helping to deal with diversity (Wagner & Sepehri, 1999). Hence, diversity programs provide the chance to address the impact of stereotypes and to foster tolerance by supporting a complex and diverse understanding of the organization.

Only a few companies such as the German division of Booz Allen Hamilton or Deutsche Lufthansa follow the idea of diversity and cultivate the idea of a diverse workforce (Hülßen, 2004). Most often, German companies invest exclusively into support programs for

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women whereas diversity management remains a neglected topic (Engelbrech, 2004; Wagner & Sepehri, 1999). Management press often reports on companies implementing support for women or diversity management programs. But such single examples are probably not representative of the general trend in German business and industry. On the contrary, a recent study of the Institute of economic and social sciences (Wirtschafts- und Sozialwissenschaftliches Institut, WSI) shows that only 16.5% of a total of 15 000 enterprises have implemented programs to increase equal opportunities as reported by representatives of their workers' council (Klenner, 2004). Even though these data are not conclusive, they nevertheless suggest that overall only few German organizations invest into programs supporting women. Hence, interventions that help crack the glass ceiling are still rare in Germany.

In sum, recent statistics on women's numerical proportion in managerial positions indicate that women are still disadvantaged in German organizations. Even though gender inequality has been recognized as a problem for women, families and organizations, most German organizations still seem to neglect gender equality and diversity programs. In consequence, the power of stereotypes at work remains widely unaddressed in interventions at work. However, gender stereotypes do not only affect performance evaluations and recruitment decisions. Gender stereotypes are also likely to have implications on women's self-definition. Research has shown that women are sometimes prone to detach from their gender group in male-typed organizations and to not support gender policies. The present work pursues the reversed perspective. It focuses on the conditions under which women do identify with their gender group at work. To address this research question an intergroup perspective is undertaken that captures the specific characteristics of gender relations and representations at work. Even though one can assume that the organization serves as fundamental point of reference for employees, both male and female employees also bring their representations concerning the own and the other gender group into the organization. In consequence, different aspects of this setting can become relevant, the organization as a whole as well as the gender subgroup at work. It is assumed in this work that both stereotypical representations about gender groups as well as about assumed characteristics of the organization play a major role with regard to the addressed research question. Stereotype-based representations of women, men and the organization are perceived as key factor that are likely to affect women's readiness to identify with their gender group. Subsequent behavioural implications with regard to women's solidarity towards other female colleagues as well as with regard to the organization are likely and expected.

The following chapters 2 and 3 present the theoretical background relevant to the outlined research question. Gender-group representations within the organization are conceptualized within an intergroup framework. Implications for women's identification with their own gender group at work are inferred (chapter 2.1). Referring to intergroup research it is furthermore outlined how gender representations influence women's behavioural strategies within the organization through the effect of identification (chapter 2.2). Chapter 3 summarizes the relevant theoretical and empirical insights of the models and research results outlined in the two previous chapters. Chapter 4 delineates the developed research model and the related hypotheses. Chapter 5 provides empirical tests of this model. The empirical results are then, in a final chapter discussed with reference to remaining questions, theoretical implications and the application in the field.

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## 2. Theoretical Background

### 2.1 Cognitive and motivational models of intergroup representations

*He – for it is always a he –  
stands for humanity as apprenticeship,  
since women are not thought to be representative  
of human beings in general but only of women  
A woman can represent women  
Only a man can stand for man or mankind – everybody.*

Susan Sontag

#### 2.1.1 Gender Stereotypes at work – The Lack of fit Model

Researchers have connected women's underrepresentation in managerial positions to stereotypical cognitive representations of women, men and management positions. Typically, picturing a manager, both men and women think of a male employee (Schein, 1975; Sczesny, 2003a; Willemsen, 2002). Stereotypes about men, such as being agentic and competent, seem to match smoothly with prescriptions of managerial roles (Sczesny, 2003a). Taken one step further, predominately stereotypical male characteristics seem to make a successful manager (Martell, Parker, Emrich, & Crawford, 1998; Powell, Butterfield, & Parent, 2002). This association known as the "think-manager-think-male"-phenomenon consequently leads to perceptions of women as being less eligible for managerial positions (Heilman, 2001; Sczesny & Stahlberg, 2002). Even though the perception of management has become less male-typed, and more androgynous throughout the last 20 years, this "think-manager-think-male" phenomenon is still prevalent (Powell et al., 2002; Sczesny & Stahlberg, 2002; Willemsen, 2002). Stereotypical views of women at work and male-typed managerial roles result in a stereotype-based lack of fit of female employees in the work-setting (Heilman, 1983, 2001). According to the Lack of fit Model (Heilman, 1983, 1995, 2001) the degree of fit between an individual's attribute (i.e., skills, abilities) and management requirements determines performance expectations. In case of a high fit, a high performance is expected, whereas in

case of a low fit, low performance is expected. As women are perceived to lack fit, they are expected to perform less than their male colleagues. Such fit-based performance expectations furthermore affect evaluation processes leading to more negative evaluations of women's skills and abilities.

Even if a woman reaches a high fit she is likely to be less positively evaluated (Heilman, 2001; Ryan & Haslam, 2005). According to the Lack of fit Model, stereotypes are not only descriptive but also prescriptive. Following from that, a woman who highly fits to male-typed job prescriptions is at the same time perceived to be less feminine and more masculine. Because of the prescriptive content of gender stereotypes, her deviation from prescribed feminine attributes will be disapproved of while her high fit will not be accredited (Heilman, 2001; Xiao-tian, 1992). This proposition is in line with the more general notion that counternormative behaviour initiates disapproval (Cialdini & Trost, 1998).

However, it is not only the extent to which women comply with prescribed female gender norms that influences how they are reviewed. How women are evaluated also depends on the position they are recruited for. According to Ryan and Haslam (2005, submitted) women are sometimes even preferentially selected in top management positions that are associated with highly precarious risks. Hence, organizations that operate unsuccessfully at the market and therefore need a thorough management change more frequently rely on women than on men (Ryan & Haslam, submitted). Thus, it appears that even though top management positions are more narrowly associated with male characteristics, women are evaluated more positively and are seen as more competent if it is a precarious leadership position. This ostensible success is, however, most likely a mere Pyrrhic victory. The risk of failure in board positions of organizations that suffer from under-performance is naturally higher than the risk of failure in positions within stable and successful organizations (cf., Ryan & Haslam, 2005). Thus, if women are more frequently recruited for precarious leadership positions whereas men are more frequently recruited for stable positions different performance outcomes are likely to be attributed to the person and thus to gender instead of context (Gilbert, 1995; Jones & Harris, 1967; Ross, Amabile, & Steinmetz, 1977). In consequence, women face the high risk of a negative performance evaluation. Moreover, the preferential recruitment of women in precarious positions is likely to approve gender stereotypes and the assumption that women in fact do not really fit at work.

The stereotype-based Lack of fit Model has spawned a whole body of research. Studies have shown that indeed lack of fit, which describes the discrepancy between applicant sex and job sex-type leads to less positive applicant evaluations (see Davison & Burke, 2000

for a meta-analysis). This devaluation-effect does not only emerge for females, but also for males (Davison & Burke, 2000). Hence, the reasoning of the Lack of fit Model also applies to men seeking for female-typed jobs (e.g., nurse).

Research furthermore provides evidence that this disapproval originates from a perceived violation of gender norms. Those women being described as non-traditional were evaluated less positively compared to women being described as more traditional (Haddock & Zanna, 1994). The more positive evaluation of traditional women rests on a strong emphasis on insinuated positive communal qualities in line with gender norms, which enhances women's lack of fit in male-dominated work settings (Eagly, Mladinic, & Otto, 1991). Taken further, if women behaving non-normatively succeed in male-typed tasks they are less liked and personally more derogated compared to successful men (Heilman, Wallen, Fuchs, & Tamkins, 2004). Being disliked can have subsequent effects for career seeking in terms of overall evaluations and recommendations (Heilman et al., 2004). In sum, the model of lack of fit has found thorough empirical support.

The idea of women's lack of fit has also been transferred to other social contexts outside the work-setting. Women are likely to be observed as not fitting to the same extent than men in social contexts that are more associated with male- than with female-typical characteristics. For instance, Eagly and Kite (1987) could show that women are perceived as more dissimilar to their national stereotype compared to men. Furthermore, studies have shown that being a mathematician and mathematics in general are more strongly associated to male than to female stereotypes in elementary school children as well as college students (Nosek, Banaji, & Greenwald, 2002; Steele, 2003).

In sum, gender stereotypes have been demonstrated to result in a lack of fit or mismatch of women at work as well as within other social contexts. Stereotype-based lack of fit has been shown to be related to less positive evaluations of women's performances, less personal liking of successful women and less recruitment of women in managerial positions. Taken further, lack of fit consolidates the underrepresentation of women in management. Hence, research on gender stereotypes and the Lack of fit Model has provided one powerful approach in describing and explaining the so called glass ceiling phenomenon. Therefore, the present work focuses on this research tradition and applies to it an intergroup perspective. It is assumed in this work that the stereotype-based lack of fit of women does not only affect how women are perceived but moreover how women do perceive themselves. Thus, the awareness of a stereotype-based lack of fit is expected to affect women's group-based self-definition at work.

## 2.1.2 The Social Identity Approach

Whereas the Lack of fit Model looks at management and leadership as a specific gender issue, organizational leadership research refers to a broader frame of reference and has focused on prerequisites of good leadership in general (see Hogg, 2001a for review). Recently, the understanding of leadership and of behaviour within organizations has benefited through its conceptualization within the social identity approach taking cognitive and motivational processes into consideration (see Ashforth & Mael, 1989; Ellemers, 2001; Hogg & Terry 2001, Knippenberg & van Schie, 2000). This approach is based on two influential theories of group processes, Social Identity Theory (SIT, Tajfel, 1978; Tajfel & Turner, 1979) and Self Categorization Theory (SCT, Turner, Hogg, Oakes, Reicher, & Wetherell, 1987).

According to SIT (Tajfel, 1978; Tajfel & Turner, 1979) people conceptualize their social environment in terms of groups and social categories. These groups and categories provide meaning to their members and thus give them orientation in a given social context (Tajfel, 1978). SIT differentiates between two types of identity: social identity vs. personal identity. A group member's social identity is defined as "the individual's knowledge that he [sic!] belongs to certain social groups together with some emotional and value significance to him [sic!] of this group membership" (Tajfel, 1978, p. 63). Personal identity, on the other hand, defines the self in terms of unique characteristics and interindividual differences (Simon & Mummendey, 1997; Turner & Onorato, 1999).

Social groups particularly gain meaning in relation to a relevant outgroup. When comparing the ingroup with a relevant outgroup, people strive for a positive social identity (i.e., self-enhancement motive). In consequence, the ingroup is perceived as positively distinct from the outgroup. However, if the ingroup is perceived to be less favourable compared to the outgroup, group members engage in strategies to enhance their self-esteem. Depending on the social context as defined through the stability and legitimacy of status differences as well as the permeability of group boundaries, group members engage in different coping strategies to achieve a positive sense of self. SIT's major predictions and assumptions such as the influence of social structural variables on coping strategies, have found wide support and are empirically well established (see Brown, 2000 for review).

SCT (Turner et al., 1987) further specifies the cognitive dimension of SIT. It makes assumptions about the conditions under which people define themselves in terms of a certain group membership. According to SCT people belong to a variety of different social categories (e.g., gender, organization etc.). These social categories are hierarchically



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organized from specific narrow categories (e.g., staff or subdivision) to more inclusive and abstract categories (e.g., organization). Hence, individuals can define themselves on different levels of group memberships (i.e., different social identities), or on a personal level (i.e., personal identity). According to SCT, self-categorization as an individual rests upon a comparison process involving the self and ingroup members. Thus, intragroup comparisons shape personal identity. Self-categorization as an ingroup member rests upon a comparison process between ingroup and outgroup in the context of a superordinate category comprising both of these groups. Thus, intergroup comparisons shape one's social identity. More generally speaking, SCT posits that the comparison of two entities implies their perception as similar on a more inclusive category.

Whether an individual defines her- or himself in terms of the personal or social identity depends on the salience of one's group category in a given social context. It is the interaction between category accessibility and category fit that determines the salience of the ingroup. If a category is easily accessible, accounts for relevant similarities and differences among people (comparative fit) and is in line with the social meaning of the context (normative fit), this category will be salient and used for self-definition in terms of group membership.

SCT posits that social categories are cognitively represented through a prototype containing stereotypic characteristics and norms of one group in differentiation to another group. A prototype is an ideal type or a best exemplar of a category and thus has normative power. Prototypes are formed and defined in such a way as to maximize the ratio of perceived intergroup differences to intragroup differences (i.e., metacontrast principle). If the ingroup as a social category is salient people assimilate to the group's prototype and accentuate similarities among ingroup members while emphasizing differences from outgroups. In consequence self-conception, attitudes and behaviours shift towards the ingroup prototype. This shift from personal to social identity is called depersonalization and is understood as a basic process underlying group phenomena in SCT.

The process of depersonalization has been shown to influence intra- and intergroup processes. On the intragroup level depersonalization affects people's perception of attraction. While assimilating to the group's prototype people also judge other ingroup members on the basis of their perceived closeness to the prototype, which implies their social attraction (Hogg, Cooper-Shaw, & Holzworth, 1993; Hogg & Hardie, 1991). At the same time, personal attraction on the basis of personal relationships becomes less important. On the intergroup level depersonalization has been shown to function as an underlying process of collective

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action, stereotyping and intergroup differentiation (Kelly & Breinlinger, 1996; Postmes, Spears, & Lea, 2002; Postmes & Spears, 1998).

### **2.1.3 Organizational prototypicality and leadership**

A central assumption of the Lack of fit Model outlined above is that good leadership is defined through stereotypical representations of management comprising primarily typical male attributes. In his Social Identity Theory of Leadership Hogg (2001a, 2001b) enlarges this understanding of management while introducing a group perspective on leadership. He bases his propositions about leadership on assumptions of SIT (Tajfel, 1978; Tajfel & Turner, 1979) and SCT (Turner et al., 1987). According to Hogg, management positions are not merely prescribed through certain normative attributes; moreover they are also defined within a social context in relation to the organizational prototype. Thus, what defines a good leader is highly context-dependent. Hogg (2001a) differentiates carefully between stereotypicality and prototypicality. Stereotypicality refers to a cognitive schema that defines attributes connected to a category such as leadership (Hogg, 2001a). Prototypicality, on the other hand, refers to the best exemplar within a specific context (i.e., social category) that defines the norms and standards against which all other exemplars are evaluated (cf., Rosch, Mervis, Gray, Johnson, & Boyes-Braem, 1976). Empirical evidence supports that both stereotypicality as well as prototypicality exert a significant effect on leader evaluations (Hogg, Hains, & Mason, 1998). Prototypicality defines a good manager insofar as it comes along with social attraction. If a category (e.g., organization) is salient then those members who are close to the prototype are more liked than members who are more peripheral (Hogg et al., 1993). Moreover, as the most prototypical member is also the most socially attractive, this prototypical group member is able to influence others and to secure acceptance of his or her suggestions and orders. Studies have demonstrated that those members who were perceived as being prototypical members of the organization also were seen as being more effective leaders compared to non-prototypical members (Hains, Hogg, & Duck, 1997).

The definition of an organizational prototype is context-dependent and rests upon prevalent cultural attributes. Hence, organizational prototypes reflect dominant attributes of majorities such as men at work rather than attributes of minorities such as women at work (Hogg, 2001b). Thus, numerical proportions and power distributions influence organizational standards, a notion that is also supported in sociology (Ely, 1995; Kanter, 1977/1995). Hogg's

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framework of leadership opens up a further perspective on the question of women's underrepresentation in management positions. If organizational prototypes are likely to comprehend male characteristics, then female employees might not only be perceived as not matching male-typed managerial roles but also as being discrepant from a male-shaped organizational prototype. Thus, the group of female employees is lacking fit, because it is characterized by low group prototypicality with regard to the organizational prototype. The group of male employees however, is fitting well, because it is characterized by high ingroup prototypicality with regard to the organizational prototype. Finally, female employees are disadvantaged because they do not merely lack fit to managerial job prescriptions but moreover are more distant from the organizational prototype than their male colleagues. The organizational prototype, however, is a general normative standard that applies to all members of an organization. Managerial stereotypes, contrarily, comprise attributes applicable to the limited context of management. Thus, relative low group prototypicality describes a more general phenomenon compared to the "think-manager-think-male" association and the effects of the Lack of fit Model. Defining different degrees of fit as relative group prototypicality therefore broadens the understanding of female employees' situation at work. Taking group processes into consideration enables research to investigate how gender prototypicality as an everyday experience influences women's self-definition and behaviour at work and thus allows examining effects on ingroup perception and intergroup processes.

#### **2.1.4 The Ingroup Projection Model**

A model reflecting the role of prototypes in intergroup processes is the Ingroup Projection Model, IPM, (Mummendey & Wenzel, 1999). The model describes processes leading to different prototypicality perceptions and its implications for outgroup evaluations. Hence, the IPM allows conceptualizing of the phenomenon of lack of fit as relative group prototypicality and the analysis of its consequences. Derived from Self Categorization Theory, SCT, (Turner et al., 1987) it is assumed that social categories are relevant points of reference for defining and orienting oneself in a given social context. Social categories are hierarchically structured so that more narrow categories are embodied in more abstract and inclusive categories. According to the IPM group members compare their ingroup with an outgroup on the basis of an inclusive superordinate category which is represented through a prototype. This prototype sets the norms and standards against which subgroups are compared and evaluated. Because

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of the normative power of the superordinate prototype a subgroup that is perceived to be relatively prototypical is also perceived to be more normative and positive. Likewise, the subgroup that is perceived to be relatively less prototypical is regarded as more deviant implying a less positive evaluation and as deserving lower status (Weber, Mummendey, & Waldzus, 2002). Hence, members of both subgroups want their ingroup to be perceived as being prototypical for the superordinate category. Therefore, members of both groups tend to perceive ingroup attributes to be more relatively prototypical by projecting distinct and stereotypical ingroup attributes onto the superordinate category. Thus, both groups project in order to claim higher relative prototypicality of their ingroup by generalizing ingroup attributes relative to outgroup attributes to the superordinate category. This projection process parallels findings of the false consensus effect which is the generalization of individual attributes to others (Ross, Greene, & House, 1977). The false consensus effect has empirically shown to be based on projection from self to ingroup (see Krueger & Clement, 1996; Robbins & Krueger, 2005 for review). Thus, false consensus affects the representation of the ingroup's prototype. Similarly, ingroup projection refers to the representation of the superordinate category prototype that shapes the relation between the subordinate subgroups.

In a nutshell, ingroup projection describes the tendency that within a given social context two groups tend to perceive their ingroup as more relative prototypical compared to the outgroup. Thus, ingroup projection implies diverging perspectives with regard to relative group prototypicality in a given intergroup context. As the perception of relative group prototypicality is related to less positive evaluations of the outgroup disagreement about the relative group prototypicality of two groups and the appropriate relative evaluation might be the basis of intergroup discrimination and intergroup conflict (Waldzus, Mummendey, Wenzel, & Boettcher, 2004)

The extent to which ingroup projection is possible is furthermore influenced by the representation of the superordinate category; namely by its valence and complexity. The valence of the superordinate category moderates whether the perception of relative high ingroup prototypicality is related to a less positive evaluation of the outgroup. In case of a positive superordinate category an ingroup's perceived relative high prototypicality is related to negative attitudes towards the outgroup (Wenzel, Mummendey, Weber, & Waldzus, 2003). However, a negatively evaluated inclusive category would change the meaning of prototypicality and might decrease the ingroup's positive valence. Therefore, in case of a negative superordinate category an ingroup's perceived relative high prototypicality is related to positive attitudes towards the outgroup (Wenzel et al., 2003). Thus, only a positively

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evaluated superordinate category serves the motive to perceive one's ingroup positively. Furthermore, ingroup projection depends on the scope of the superordinate category representation. Only a definable and narrow superordinate prototype provides clear criteria for similarity or dissimilarity judgments and thus allows defining which subgroup is prototypical. Hence, only a definable prototype allows ingroup projection and claims of higher group prototypicality.

However, there are also limitations to ingroup projection originating from the meaning of the social context. As with ingroup bias, the generalization of ingroup attributes onto the superordinate category can be limited by reality constraints (Ellemers, van Rijswijk, Roefs, & Simons, 1997; Mummendey & Wenzel, 1999). These social restrictions originate for instance from majority-minority proportions, unequal access to resources or economic wealth and are reflected in consensually shared descriptive as well as evaluative differences between two groups (Ellemers et al., 1997). The restrictive power of demography and numerical proportions is also reflected in the Social Identity Model of Leadership (Hogg, 2001b) and in sociological approaches to work relations (Ely, 1995; Kanter, 1977/1995; cf. section 2.1.3). Reality constraints can prevent the inferior subgroup from projecting onto the inclusive category (Waldzus et al., 2004). For example, if the superordinate prototype is narrowly defined by dominant attributes of the majority group (e.g., male staff) than projection of the inferior subgroup (e.g., female staff) is restricted. Reality constraints can lead one group to perceive the outgroup as equally or even as more relatively prototypical than the ingroup. Consequently, in the latter case both subgroups agree upon the high relative prototypicality of the dominant group compared to the inferior group. However, this agreement also comes along with perspective divergence concerning the extension of relative group prototypicality (see section above; Waldzus et al., 2004; Wenzel et al., 2003). For instance members of the less prototypical group perceive their own group as more prototypical for the superordinate category than it is perceived by members of the dominant group. At the same time members of the more prototypical group also perceive their relative prototypicality as higher than it is seen by members of the inferior group.

Central assumptions of the IPM have found their empirical support in several studies. Research could demonstrate the general tendency to project ingroup attributes onto the inclusive category in different social contexts using different methodological approaches (Waldzus, Mummendey, & Wenzel, 2005; Waldzus & Mummendey, 2004; Waldzus et al., 2004; Weber et al., 2002; Wenzel et al., 2003). If both groups possess equal status, then both groups claim relative ingroup prototypicality and thus do not agree upon intergroup

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representation (Waldzus et al., 2004; Wenzel et al., 2003). If both groups differ in status, then reality constraints prevent the inferior group from projecting which results in shared group representations (Waldzus et al., 2004, Study 3). Both groups agree upon the high relative prototypicality of one group and the low relative prototypicality of the other group. Nevertheless, both groups disagree upon the degree of the respective relative group prototypicality (Waldzus et al., 2004, Study 3). High ingroup prototypicality has been found to be related to less positive evaluations of the deviant outgroup (Waldzus & Mummendey, 2004; Waldzus et al., 2005; Wenzel et al., 2003) and to perceptions of legitimacy with regard to status differences (Weber et al., 2002). Furthermore, there is evidence that projection is based on the representation of a definable and positively evaluated superordinate prototype (Waldzus et al., 2005; Waldzus et al., 2003; Weber et al., 2002; Wenzel et al., 2003) and is enhanced for those ingroup members that identify strongly with both the ingroup and the superordinate category (Waldzus, et al., 2003; Wenzel et al., 2003).

### **2.1.5 An integrative view on cognitive gender representations at work**

Applying the IPM to the work-setting allows integrating research on gender stereotypes (Diekmann & Eagly, 2000; Eagly & Steffen, 1984) and on lack of fit (Heilman, 1983, 1995, 2001) with assumptions on the impact of organizational prototypes (Hogg, 2001a, 2001b) by contributing propositions about the underlying processes. According to the IPM, female and male employees are expected to project stereotypical ingroup attributes and to claim these characteristics to be typical for the inclusive level which is represented by a clearly defined and norm setting organizational prototype. Thus, the content of projection comprises stereotypical group representations. As studies on gender stereotypes have demonstrated being agentic and task-oriented is perceived to be stereotypically male whereas being communal and team-oriented is seen to be stereotypically female (Diekmann & Eagly, 2000; Eagly & Steffen, 1984). Hence, gender stereotype research indicates that male and female employees are perceived to be mutually typical on different dimensions (task- and team-orientation). Taking this further, lay as well as management theory often argue that male and female employees might be seen as to complement each other in their skills at work (for a discussion see Krell, 1994). Thinking this argument over within the theoretical framework of the IPM it implies that male and female employees are not only mutually typical on different dimensions but rather complement each other in relation to the superordinate organizational

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prototype and thus are mutually prototypical. However, mutual typicality does not need to result in mutual prototypicality. As outlined above reality constraints (e.g., a male-defined prototype) can pose restrictions to a subgroup's motivational projection tendency. Reality constraints, such as a narrowly male defined organizational prototype (Hogg, 2001b) prevent female employees from projecting and lead to the perception of relatively high outgroup prototypicality (Waldzus et al., 2004). Contrarily, the group of male employees projects onto the superordinate category and perceives the ingroup as being high in relative prototypicality. In consequence, both subgroups agree upon the relatively high group prototypicality of male employees which implies a lack of fit of female employees at work (Heilman, 1983, 1995, 2001). Thus, female and male employees are perceived to be mutually typical, but not as to truly complement each other as female employees are perceived to be less relative prototypical with regard to the organizational prototype. Nevertheless, according to the IPM both groups are likely to disagree upon the extent of this lack of fit of women and of the high fit of men in organizations respectively. This perceptual disagreement is particularly likely, considering that stereotypes about women, men and management are becoming more androgynous (Powell et al., 2002; Willemsen, 2002). This should allow for diverging relative group prototypicality perceptions within the work context. In sum, conceptualizing the research question of female employees' lack of fit in organizations within the framework of the IPM allows to connect research on gender stereotypes and lack of fit and to reflect on the underlying cognitive-motivational processes resulting in the shared perception of relatively low prototypicality of females.

### **2.1.6 Relative group prototypicality and identification**

Conceptualizing the question of women's lack of fit within the theoretical framework of intergroup research furthermore allows analyzing the effects of gender representation at work on females' group-based self-definition. Social identification serves as a key concept within the Social Identity Approach and has inspired numerous studies in intergroup research (for reviews see Abrams & Hogg, 2001; Ellemers, Spears, & Doosje, 2002). The role of identification is also reflected within the IPM. In line with SCT (Turner et al., 1987) and SIT, (Tajfel, 1978; Tajfel & Turner, 1979) identification is treated as an antecedent of projection and the perception of high group prototypicality within the IPM. The superordinate category only serves as standard of comparison if it is a salient category and constitutes an important

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aspect of one's self-concept (Turner et al., 1987). Furthermore, according to SIT, people tend to perceive their groups with which they identify positively (Tajfel & Turner, 1979). Consequently, the more group members identify with both the superordinate category and the ingroup, the more prototypical they will regard their ingroup (Waldzus et al., 2003; Wenzel, et al., 2003). However, if both group levels are salient and relevant self-categories then being aware of different relative subgroup prototypicality may retroact on how strongly one defines as a member of one's ingroup as well. Accordingly, relative group prototypicality and ingroup identification are interrelated and constitute a recursive relation. Research on self-prototypicality (i.e., the typicality of an individual for a group) is in line with these considerations. Self-prototypicality and ingroup identification have been shown to be interrelated (Eisenbeiss & Otten, submitted; Kashima, Kashima, & Hardie, 2000). Even though this correlation leaves the direction of this connection open, Kashima et al. (2000) reason that typical group members should feel positively about their group and therefore show more ingroup identification. Hence, a change in self-typicality is assumed to influence group identification and self categorization (see also Ashmore, Deaux, & McLaughlin-Volpe, 2004). Furthermore, Eisenbeiss and Otten (submitted) could show in a longitudinal study that self-prototypicality predicts ingroup identification over time. A first experimental step in demonstrating the impact of self-prototypicality on identity relevant aspects has been undertaken by Jetten and colleagues (Jetten, Branscombe, & Spears, 2002). They demonstrated that an expected increase in one's self-prototypicality leads to higher collective self-esteem (i.e., an aspect of social identification) compared to no expected change. Taken together, these findings suggest that self-prototypicality is an important antecedent of ingroup identification.

Within the present approach it is assumed that not only self-prototypicality but also the perception of relative group prototypicality influences the level of ingroup identification. If the ingroup compared to the outgroup fits well into a positively evaluated inclusive category, norms and standards of the superordinate category and the ingroup are relatively congruent. Furthermore, as norms and standards of the superordinate category serve as guidelines for evaluation (Mummendey & Wenzel, 1999), being close and congruent to the inclusive prototype is likely to be positive. Therefore, congruency should lead to a more positive and stable feeling of belongingness to the ingroup. The underlying process is likely to be comparable to the intragroup level. Ingroup members are socially more attractive when they are more similar to the group prototype (Hogg, 2001a; Hogg et al., 1993; Turner et al., 1987). This theoretical proposition can be transposed onto the next more abstract category



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level as well. Accordingly, the ingroup is more attractive if it is relatively high in prototypicality with regard to the superordinate category prototype. A more attractive ingroup is also likely to be more positive and thus serves ingroup members' self-enhancement motive. As ingroup members strive for a positive social identity (Tajfel & Turner, 1979) they also identify more strongly with their ingroup if this group is high in relative prototypicality with regard to the inclusive category. However, if both subgroups are equally prototypical, comparison with the outgroup in relation to the superordinate category does not affect the attractiveness of the ingroup. Therefore, ingroup identification should remain unchanged. However, if the outgroup fits better into an inclusive category, ingroup attributes are relatively incongruent to the superordinate standard. Thus, relative outgroup prototypicality should not increase but might rather decrease the attractiveness of the ingroup compared to the outgroup. But even if the ingroup appears to be less attractive and therefore less positive ingroup identification might not further decrease. This proposition is in line with research on negative social identity. Studies have demonstrated that members of a negatively evaluated group can show strong ingroup identification (Mlicki & Ellemers, 1996). Therefore, only high relative ingroup prototypicality should lead to an increase in ingroup identification, but low relative prototypicality will not necessarily lead to a decrease in identification whereas equal relative group prototypicality should not affect ingroup identification. Thus, when applied to the gender context at work, only given high relative ingroup prototypicality the own gender group (i.e., female employees) is likely to be highly self-relevant. On the contrary, given high relative outgroup prototypicality the own gender group is likely to be less self-relevant. Bridging this assumption to gender research, it might be under high relative outgroup prototypicality when personalization (i.e., when women perceive themselves as individuals) is frequent (cf., Ellemers et al., 2004 for a similar argument). However, this link between outgroup prototypicality and personalization remains a subject of speculation here as the present research project focuses on the effect of group prototypicality on ingroup identification.

Concerning the depicted theoretical proposition (i.e., group prototypicality affects ingroup identification), one might argue that research results regarding the effect of self-prototypicality on ingroup identification would rather suggest an effect of group-prototypicality on superordinate category identification than on ingroup identification. In principle, it is of course possible that relative group prototypicality also has an effect on superordinate category identification. However, within the gender-shaped organizational setting that is at focus of the present work, an effect of relative group prototypicality on

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ingroup identification appears to be more likely. As shown by van Knippenberg and van Schie (2000) subgroups within an organizational context are often more important and more central self-categories than the organization as a whole. Accordingly, individuals are likely to identify strongly with subgroups at work, because they share more common work-related fate and history with their subgroup than with the whole organization (Ashforth & Johnson, 2001; Riketta & van Dick, in press; van Knippenberg & van Schie, 2000). Moreover, subgroups at work are particularly self-relevant if demographic attributes are confounded with structural power relations (e.g., low status female staff; cf., Ashforth & Johnson, 2001). Thus, although the organization appears to be the structural point of reference (i.e., defines the standard for subgroup comparison) the concrete gender subgroup appears to be the primal perceptual and self-relevant category.

This reasoning, that the subgroup has a perceptual primacy over the defining standard of the inclusive category, also finds support from a different line of research, the cognition research on category representations. According to Rosch et al. (1976) basic subcategories are more concretely defined than abstract inclusive categories. In consequence, subcategories are more readily accessible and thus, more at focus than inclusive ones. Therefore, subcategories (as opposed to inclusive categories) have an accessibility advantage. Bringing these considerations from both lines of research together, I argue that information on the subgroup-superordinate category relation (i.e. information on relative group prototypicality) more readily affects the representation of the ingroup than of the superordinate category. This change of the representation of the ingroup (which is assumed to change an ingroup's attractiveness, see section above) affects ingroup identification. Taken together, I assume that relative group prototypicality is more likely to exert its influence on the identification with the subordinate group than on the identification with the superordinate category.

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## 2.2 Ingroup identification as key concept in intergroup research

*I am a woman above everything else.*

Jacqueline Kennedy Onassis

### 2.2.1 Ingroup identification as predictor of group processes

Social psychological research conducted in the tradition of SIT (Tajfel & Turner, 1979) has demonstrated that ingroup identification is in many regards a powerful predictor of intergroup differentiation and group-related behaviour. According to SIT (Tajfel & Turner, 1979) members of a group strive for a positive social identity. This need for positive self-evaluation is assumed to be a central motive for biased intergroup comparisons particularly among those group members who strongly identify with their ingroup (Branscombe & Wann, 1994; Tajfel & Turner, 1979). Intergroup differentiation (i.e., negative attitudes towards the outgroup, ingroup favouritism) is furthermore assumed to be one mean to restore a positive self-esteem if social identity is threatened, e.g. by an inferior status of the ingroup in relation to the outgroup. Depending on socio-structural context variables such as permeability of group boundaries, stability and legitimacy of status relations, group members engage in intergroup differentiation and coping strategies in order to create and maintain a positive social identity (Ellemers, 1993; Mummendey et al., 1999a; Mummendey, Kessler, Klink, & Mielke, 1999b; Tajfel & Turner, 1979, Turner, 1999).

SIT has been widely interpreted as predicting a positive correlation between ingroup identification and intergroup differentiation<sup>3</sup> (see Mullen, Brown, & Smith, 1992 for meta-analysis; see Brown, 2000 for discussion). However, first empirical evidence for this positive interrelatedness has been rather weak and inconsistent (Brown, Condor, Mathews, Wade, & Williams, 1986; see Hewstone, Rubin, & Willis, 2002 for a review; Hinkle &

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<sup>3</sup> The assumed ingroup identification - intergroup differentiation link has been the focus of a scientific debate between Turner (1999) and Brown (2000). The hypothesis of a direct positive relation between ingroup identification and intergroup differentiation has been criticized by Turner (1999) as oversimplifying. He emphasizes that this correlation is moderated and most likely mediated by a number of factors (e.g., socio-structural variable, salience of the relevant social identity, Turner, 1999). However, according to Brown (2000) a positive correlation between ingroup identification and intergroup differentiation is nevertheless in line with core assumptions of SIT: "(...) if group identification is based on a positive ingroup evaluation, and if people are motivated to achieve or maintain a positive social identity, and if ingroups are evaluated primarily in relation to relevant outgroups, *therefore* one should predict an association between identification and bias" (Brown, p. 754, 2000).

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Brown, 1990). Ingroup identification was positively, but weakly correlated to intergroup differentiation within an organizational context (Brown et al., 1986). Other studies within the work context revealed no correlation or even a negative correlation to ingroup bias (Brown & Williams, 1984; Oaker & Brown, 1986). Stronger support for this relation could be demonstrated within a merger context (van Leeuwen, van Knippenberg, & Ellemers, 2003). Furthermore, Kelly (1988) found a strong correlation of ingroup identification and intergroup differentiation within the political context. To resolve the inconsistency in research results, Hinkle and Brown (1990) developed a typology of intergroup situations defined by two bipolar dimensions: collectivist vs. individualistic orientation and comparative vs. non-comparative ideology. According to the authors, identity maintenance processes - as described in SIT (Tajfel & Turner, 1979) - are particularly prevalent when group members hold a collectivist orientation and comparative group ideology. They argue that group members who hold a relational orientation compared to an autonomous orientation engage in intergroup differentiation to uphold a positive social identity (Brown, Hinkle, Ely, Fox-Cardamone, Maras, & Taylor, 1992; Hinkle & Brown, 1990). Similarly, a stable strong link between identification and outgroup derogation was found when participants were primed with intergroup comparison orientation compared to temporal comparisons and control conditions (Mummendey, Klink, & Brown, 2001). Thus, salient intergroup comparisons in a given social context support the relation between ingroup identification and less positive attitudes towards the outgroup. Following this reasoning, it is assumed within the present research approach that different fits (relative group prototypicality) of male and female employees incorporate intergroup comparisons (cf., Mummendey & Wenzel, 1999) so that ingroup identification should lead to more intergroup differentiation.

Ingroup identification should also lead to more engagement in behavioural strategies in favour of the ingroup. Research in the tradition of SIT (Tajfel & Turner, 1979) has shown positive correlations between ingroup identification and collective strategies (Kessler & Mummendey, 2002; Mummendey et al., 1999a). In this domain, identification serves as a powerful mediator between the perception of the social context in terms of status differences, permeability of group boundaries and behavioural strategies (Ellemers, 1993; Mummendey et al., 1999a, 1999b). Identification has been found to be positively related to trade union members' willingness to engage into industrial protest (Kelly & Kelly, 1994; Veenstra & Haslam, 2000). Furthermore, group identification has been established as powerful predictor for social movement participation and engagement in disruptive collective action (Simon, Loewy, Stürmer, Weber, Freytag, Habig, Kampmeier, & Spahlinger, 1998;

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Stürmer & Simon, 2004; Wright & Tropp, 2002). Summarizing, identification with female staff should be positively associated with pro-ingroup collective behaviour and intergroup differentiation.

### **2.2.2 Organizational identification as predictor of work-related behaviour**

Organizational studies also focus on identification as a central variable to predict work-related attitudes and behaviour. However, the idea that employees' attachment to the organization shapes employees' dedication within the organization has been conceptualized differently as both commitment and identification. Both concepts are related, but theoretically and empirically distinct from each other as demonstrated in a meta-analysis by Riketta (in press).

Organizational commitment serves as a broader concept compared to the construct of identification and implies affective, normative and continuance aspects (Allen & Meyer, 1990). The authors' definition includes identification as one aspect of affective commitment aligned with an employee's emotional attachment and involvement in the organization. Normative commitment captures a feeling of obligation towards the organization. Continuance commitment reflects balancing costs as a consequence of leaving the organization. Commitment has been treated as a key variable in organizational studies to predict ingroup favouritism, behaviour in favour of the organization and performance indicated by self and other-ratings (Bergami & Bagozzi, 2000; Ellemers, Kortekaas, & Ouwerkerk, 1999; Riketta, 2002).

The concept of organizational identification is tightly related to organizational commitment but is conceptualized more narrowly (Ashforth & Mael, 1989; Riketta, in press; van Knippenberg, 2000). Organizational identification describes - in line with SIT - the relationship between the self and the organization (Tajfel & Turner, 1979). Further differentiated, this concept implies cognitive and emotional aspects of a self's involvement in the organization (Pratt, 1998). Since Ashforth's and Mael's influential paper (1989) the SIT-based concept of organizational identification has been increasingly incorporated in organizational studies. Organizational identification has - like commitment - been used as a predictor of organizational attitudes and behaviour, such as job satisfaction and team climate (van Dick, Wagner, Stellmacher, & Christ, 2004). Organizational studies have shown how identification influences organizational behaviour such as the willingness to cooperate (Tyler & Blader, 2001). Furthermore, many studies dealing with organizational attachment (i.e.,

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commitment and identification) have particularly focused on predicting organizational citizenship behaviour (Christ, van Dick, Wagner, & Stellmacher, 2003). Opposed to behaviour that is prescribed by job requirement (i.e., in-role behaviour), organizational citizenship behaviour goes beyond job prescriptions (i.e., extra-role behaviour). Organizational citizenship behaviour has been shown to be positively related to quantitative and qualitative key performance data (e.g., amount of paper produced per total machine capacity within one year; operating efficiency) and is therefore of specific interest to organizations (Podsakoff, Ahearne, & MacKenzie, 1997; for review see Podsakoff, MacKenzie, Paine, & Bachrach, 2000).

In sum, both identification and commitment have been used more or less interchangeably to predict job-related attitudes and behaviour despite their different theoretical conceptualizations. However, the two concepts do not only differ in their theoretical background, but also in their predictive power. In his meta-analysis Riketta (in press) compares the strength of the relationship between organizational commitment and identification with work-related behaviour (e.g., extra-role behaviour). In line with earlier meta-analysis, he shows that both commitment and identification are positively associated to work-related attitudes, to job performance (Mathieu & Zajac, 1990; Riketta, 2002), extra-role behaviour and negatively to the intention to leave an organization (Riketta, in press). Even though the relations of organizational commitment and identification to work-related attitudes and behaviour are similar, identification is a stronger predictor of job involvement and extra-role behaviour whereas commitment is more powerful in predicting job satisfaction, absenteeism and intention to leave. Hence, Riketta (in press) suggests that researchers interested in predicting differential aspects of organizational behaviour refer in their work to a corresponding particularly appropriate concept of organization attachment (i.e., either commitment or identification).

The present work is set up within the tradition of the Social Identity Approach and the IPM that is originating from both theories (SIT & SCT). Thus, concepts and results within this work should be comparable with previous research in this field. Therefore, the SIT-based concept of identification is used to analyze the effect of relative group prototypicality on females' group-based self definition within the organization.

### 2.2.3 Foci of identification as predictor of collective behaviour

Most studies dealing with the predictive power of identification in political or organizational settings have implicitly followed the attitude-behaviour compatibility principle of Fishbein and Ajzen (1974). In line with this principle, identification and behaviour are expected to be most strongly related if both concepts are defined and measured at the same level of specification (Fishbein & Ajzen, 1974). Hence, identification as a predictor and behaviour as a criterion have been conceptualized at the same level of categorization. More precisely, ingroup identification has been used to predict collective behaviour in favour of the ingroup and organizational identification to predict work-related attitudes and extra-role behaviour (Ellemers, 1993; Mummendey et al., 1999a, 1999b; for meta-analysis see Riketta & van Dick, in press).

However, even though organizational attachment (i.e., commitment and identification) has been found to predict organizational behaviour and work-related attitudes, often these correlates have been disappointingly low (Riketta & van Dick, in press; van Knippenberg & van Schie, 2000). Therefore, researchers have argued recently to consider multiple identities (i.e., different foci of commitment and identification) in order to increase the predictive power of organizational attachment. As organizations consist of different subgroups such as divisions, departments and work units, employees might not only identify with the organization as a whole but also identify with its subgroups and therefore have nested identities (Ashforth & Johnson, 2001; Reichers, 1985). However, employees do not only identify with formal but also with informal organizational subgroups, such as demographically based categories. The salience and subjective importance of these informal social groups increases as they coincide with formal identities and overlap with organizational power structures (i.e., structural fit); e.g. male senior executive, female staff (Ashforth & Johnson, 2001). Furthermore, people are more likely to identify with small groups in order to achieve optimal distinctiveness (Brewer, 1991). Thus, employees have a strong and might sometimes have an even stronger feeling of belongingness to organizational subgroups than to the organization as a whole (van Knippenberg & van Schie, 2000). Subgroup identification is therefore considered to be predictive of behavioural strategies at work. Studies have shown that indeed attachment with organizational subgroups is related to employee attitude and organizational behaviour (Riketta & van Dick, in press; van Knippenberg & van Schie, 2000). Work-related subgroup identification for instances has been shown to influence organizational behaviour such as job motivation and job involvement (van Knippenberg & van Schie, 2000).

The more participants identify with the work-group the weaker their intention to leave the workplace but the stronger their involvement at work. Taken together, research indicates that subgroup identification at work is predictive of behaviour at the superordinate category level, the organization and at times even more predictive than same level superordinate identification (van Knippenberg & van Schie, 2000). In line with these considerations, identification with female staff is expected to not only be associated with collective behaviour in favour of the ingroup, but also with behaviour in favour of the organization (i.e., in-role and extra-role behaviour respectively).



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### **3. Summary**

Research in the tradition of the Lack of Fit Model (Heilman, 1983, 1995, 2001) has shown that the numerical underrepresentation of women in managerial positions (i.e., glass ceiling) is influenced by stereotypes about women, men and management. Stereotypical representations manifest the glass ceiling effect as they lead to biased judgments and recruitment decisions. Research resting in the tradition of the Social Identity Approach (Tajfel & Turner, 1979; Turner et al., 1987) enlarges this perspective because it allows investigating implications of lack of fit on the ingroup of female workers. In his social identity theory of leadership, Hogg (2001a, 2001b) outlines that management positions are not merely prescribed through certain normative attributes, but moreover they are defined within a social context in relation to the organizational prototype. Prototypicality is a key factor influencing how able and effective group members are perceived. Prototypical group members are perceived to be more effective compared to non-prototypical members.

Bringing the insights from research on lack of fit together with the propositions of the Social Identity Theory of Leadership on leadership processes, one can transfer Hogg's (2001a, 2001b) concept of intragroup prototypicality onto the intergroup level. If organizational prototypes are shaped by dominant attributes of majorities (e.g., men), then the group of female employees will be perceived as being low in prototypicality in relation to the superordinate prototype of the organization compared to the group of male employees. A model that conceptualizes the underlying cognitive-motivational processes resulting in relative group prototypicality is the IPM (Mummendey & Wenzel, 1999). Groups project their stereotypical ingroup attributes onto the superordinate category in order to reach more positive distinctiveness compared to the outgroup. Reality constraints can set restrictions to this general tendency resulting in shared intergroup representations. Thus, the group of female employees is perceived as being less relatively prototypical (i.e., as lacking fit). So far the IPM model has reflected the consequences of perceived high relative ingroup prototypicality on attitudes towards the outgroup. The present work takes a different perspective by focusing and extending the model with regard to effects of relative group prototypicality on the ingroup.

Research on self-prototypicality has shown that high self-prototypicality leads to more ingroup identification (Eisenbeiss & Otten, paper submitted; Jetten et al., 2002). Similarly it is argued in the present work that high group-prototypicality also increases ingroup identification. The role of ingroup identification is reflected in SIT and has been shown to affect intergroup differentiation and behaviour in favour of the own group (see

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Brown, 2000; Hewstone et al., 2002 for reviews). Organizational studies in the tradition of SIT enlarge the role of ingroup identification and show that it also leads to more action in favour of the superordinate category (Riketta & van Dick, 2005 in press; van Knippenberg & van Schie, 2000). Thus, subgroup identification within an organization leads to more involvement with respect to prescribed job-roles and with respect to extra-role behaviour.

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## **4. From lack of fit to group behaviour**

### **4.1 Model and hypotheses**

The aim of the present work is to investigate the implications of a cognitive-motivational representation of unequal gender relations at work (i.e., glass ceiling effect). Based on the theoretical arguments and empirical evidence presented in the previous sections I specify a research model that addresses two main research questions:

1. What processes lead to the consensually shared gender representation at work according to which women lack fit (i.e., low relative group prototypicality)?
2. What are the effects of relative group prototypicality on women's group-based self definition and their coping strategies at work?

The first research question addresses the exploration and description of cognitive-motivational representations of unequal gender relations at work. In line with research on gender stereotypes I expect that females and males are perceived to be typical on different dimensions (Diekmann & Eagly, 2000; Eagly & Steffen, 1984). Males are perceived to be more typical on the task-dimension whereas females are perceived to be more typical on the team-dimension. However, this mutual typicality does not need to result in mutual prototypicality perceptions. According to the IPM (Mummendey & Wenzel, 1999) the projection of stereotypical ingroup attributes onto the superordinate category can be restricted by reality constraints resulting in shared perceptions of relative group prototypicality, such as women lacking fit (Waldzus et al., 2004). However, both groups (i.e., males and females) disagree upon the relative prototypicality of the corresponding outgroup (Waldzus et al., 2004, Study 3). This should also apply within this gender context of interest, since stereotypes about men, women and management changed throughout the last 20 years leaving more room for interpretation and disagreement (Powell et al., 2002; Willemsen, 2002). Thus, with regard to my first research question I transpose theoretical and empirical arguments and apply resulting propositions to the specific social situation of gender relations at work. More precisely I expect the following:

### 1.1 Mutual typicality:

Both subgroups (i.e., males and females) differ in their perceived typicality on the task- and team-dimension.

- a) Males are consensually perceived as being more typical on the task-dimension.
- b) Females are consensually perceived as being more typical on the team-dimension.

### 1.2. Perspective convergence regarding relative group prototypicality:

Females are consensually perceived as being less relatively prototypical of the superordinate category (i.e., lacking fit) compared to males.

### 1.3. Perspective divergence regarding the extent of relative group prototypicality

Both subgroups diverge in their perspective on the relative prototypicality of the other group.

- a) Male participants perceive females to be less relatively prototypical than female participants perceive themselves.
- b) Female participants perceive males to be less relatively prototypical than male students perceive themselves.

The second research question focuses on implications of relative group prototypicality for the ingroup and thus, extends the theoretical assumptions of the IPM. Emanating from research on self-prototypicality, I assume that group-prototypicality affects ingroup identification. Self-prototypicality has been demonstrated to increase ingroup identification in longitudinal, cross-sectional and experimental research designs (Eisenbeiss & Otten, paper submitted; Jetten et al., 2002; Kashima et al., 2000). I expect that group-prototypicality with regard to a positive inclusive category also affects ingroup identification. Empirical evidence in line with the Social Identity Theory of Leadership shows that those members who are perceived as more prototypical are also evaluated as more socially attractive compared to less prototypical group members (Hogg, 2001; Hogg et al., 1993). Accordingly a subgroup that is perceived to be relatively more prototypical is perceived to be more attractive and positive. A positive ingroup serves its group members' self enhancement motive and leads to more ingroup identification (Mlicki & Ellemers, 1996). Thus, high ingroup prototypicality leads to an increase in ingroup identification. Equal prototypicality of both subgroups does not affect the attractiveness of the ingroup. Therefore ingroup identification remains unchanged. In case of relative outgroup prototypicality the attractiveness of the ingroup is not likely to increase but might rather decrease. Nevertheless, ingroup identification might not further decrease as

members of negatively evaluated groups can still show strong ingroup identification (Mlicki & Ellemers, 1996).

Within the gender-shaped organizational setting, that is at focus in the present work, I expect that group-prototypicality is less likely to affect identification with the superordinate category. As outlined above, organizational members are often likely to identify with their gender subgroup at work with which they share a common fate (Ashforth & Johnson, 2001; van Knippenberg & van Schie, 2000). Taken further, I assume that the organizational context – represented through a prototype – serves as structural point of reference, whereas the subgroup constitutes the perceptual primacy of intergroup representation (cf., Ashforth & Johnson, 2001; Rosch et al., 1976). Thus, information on the position of the ingroup (e.g., female employees) in comparison to the outgroup (e.g., male employees) and relative to the superordinate prototype (e.g., employees in general) is more likely to affect ingroup identification. In sum, when considering the specific situation of gender relations at work, I expect the following:

## 2.1 Relative prototypicality as an antecedent of identification

### a) Correlational hypothesis

- I. Relative group prototypicality and ingroup identification (e.g., female employees) are positively correlated.
- II. Relative group prototypicality and superordinate category identification (e.g., employees in general) are less strongly correlated or unrelated.<sup>4</sup>

### b) Experimental hypothesis

- I. High ingroup prototypicality leads to higher ingroup identification compared to high outgroup prototypicality and equal subgroup prototypicality.
- II. High ingroup prototypicality does not substantially change superordinate category identification compared to high outgroup prototypicality and equal subgroup prototypicality.<sup>4</sup>

Research in the tradition of SIT (Tajfel & Turner, 1979) as well as in organizational psychology has demonstrated the key role of identification (see Brown, 2000; Hewstone et al., 2002 for review). Identification has been shown to increase intergroup differentiation as well as collective behaviour and engagement in favour of the ingroup (Kelly, 1988; Kelly & Kelly,

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<sup>4</sup> The difficulty to statistically test a null hypothesis is discussed in the result section.

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1994; Simon et al. 1998, Stürmer & Simon, 2004; van Leeuwen et al, 2003; Veenstra & Haslam, 2000; Wright & Tropp, 2002). Furthermore, there is empirical evidence that identification acts as a mediator between socio structural variables and behavioural strategies (Ellemers, 1993; Mummendey et al., 1999a, 1999b). Moreover, organizational studies also demonstrated that subgroup identification predicts an increase in behaviour dedicated to the organization as a whole such as in-role and extra-role organizational behaviour (Riketta & van Dick, in press; van Knippenberg & van Schie, 2000).

Therefore, I assume the following (see Figure 4.1):

## 2.2 Ingroup identification as predictor of intergroup behaviour

Ingroup identification predicts

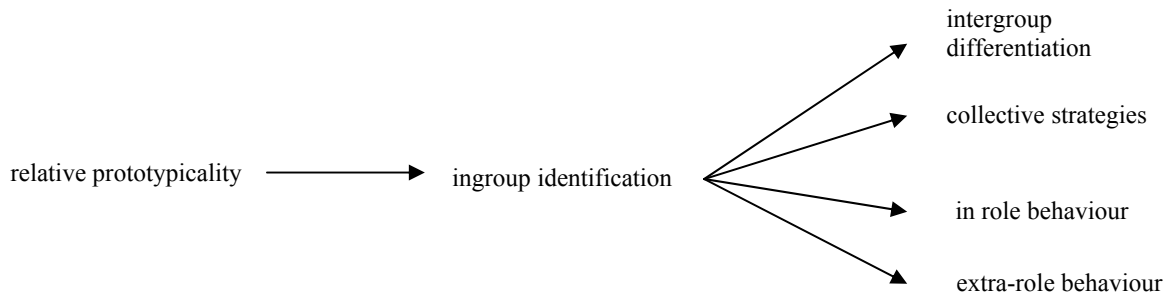
- a. intergroup differentiation,
- b. collective behaviour in favour of the ingroup (e.g., female staff)
- c. in-role and extra-role behaviour in favour of the superordinate category (i.e., organization)

## 2.3 Indirect effects of relative group prototypicality

High ingroup prototypicality leads indirectly via increased ingroup identification

- a. to more intergroup differentiation,
- b. more collective behaviour in favour of the ingroup (i.e., female staff),
- c. more in-role and extra-role behaviour in favour of the superordinate category (i.e., organization),

*Figure 4.1 Schematic research model showing direct and indirect effects of relative group prototypicality*



## 4.2. Overview of the present studies

The following studies are designed to test the outlined hypotheses. Study one is a correlational study within a student context. The study aims at describing how female students are consensually perceived as being less relatively prototypical than male students and thus that female students lack fit to the student body as a whole. It aims to test the hypothesis that relative group prototypicality and ingroup identification are interrelated. Study 2 and Study 3 aim at testing experimentally the key hypotheses that relative group prototypicality affects ingroup identification. Both studies are also set up within the student context. Study 3 furthermore investigates the indirect effects of relative group prototypicality on intergroup differentiation and collective behaviour in favour of the ingroup in a path-analytic model. Study 4 finally transfers the model to the field. This internet-based correlational study aims at replicating the proposed research model within organizations of different branches. The study furthermore intends to test the hypothesis that relative group prototypicality not only indirectly influences behaviour in favour of the ingroup but moreover behaviour in favour of the organization.

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## 5. Empirical Evidence

### 5.1 Study 1

This first correlational study aimed at depicting the phenomenon of lack of fit (Heilman, 1983, 1995, 2001) within the framework of the IPM (Mummendey & Wenzel, 1999) and was set up within the context of business students. Business students - as they prepare themselves for working in industry and administration - are likely to not only perceive management to be associated with male attributes but also to already hold a business student prototype that is more associated with male than with female attributes (cf., Sczesny, 2003a). Thus, the phenomenon of lack of fit should not only emerge at work, but also at university. This would provide an economically and practically reachable research field to test the proposed research model throughout several studies.

Study 1 aimed at exploring how ingroup projection can lead to the shared perception of relatively high group prototypicality of male students which implies a lack of fit of female students. Projection takes place on different content dimensions describing gender specific typicality- yet not prototypicality-perceptions. Furthermore, males and females are likely to disagree with regard to the degree of the other group's relative prototypicality. Finally, this study was conducted to test if relative ingroup prototypicality is positively correlated to ingroup identification, but less or not related to superordinate category identification.

#### 5.1.1 Method

##### *Participants*

84 business students of the University of Jena participated in this study (40 male and 44 female students). The participants' age ranged from 18 to 29 ( $M = 22.07$ ,  $SD = 2.87$ ).

##### *Procedure*

Participants were recruited during seminars and lectures. A maximum of 15 students could take part at one session. The study was conducted in different lecture rooms of the University



of Jena. Participants received a standardized instruction before they were asked to fill in a paper-pencil questionnaire which was told to deal with students' self-concept. There were two separate versions for male and female participants to approach both gender groups specifically. In order to make all relevant categories salient participants were asked to differentiate carefully between the subgroup level (male and female business students as ingroup or outgroup respectively) and the superordinate category level (business students in general). Participants were debriefed thoroughly at the end of the study and received a ticket of lottery that could win them up to 50 Euros.

### ***Questionnaire***

#### ***Evaluation of the superordinate category***

To ensure that participants perceive the superordinate category positively, evaluation was measured with a single item ("How do you evaluate business students in general?"). The scale ranged from 1 = "very negative" to 7 = "very positive".

#### ***Mutual typicality and relative prototypicality***

In accordance with prototypicality measures by Wenzel and colleagues (Wenzel et al., 2003), participants were given a list of 13 positively connoted attributes that were balanced in typicality. Previous research has demonstrated that men are perceived as being more agentic and competent than women. Contrarily, women are associated with being more communal and social than men (Diekmann & Eagly, 2000). Accordingly, in this study typical male student attributes were competence and task-related characteristics defining one projection dimension (e.g., career-oriented, analytic). Typical female student attributes were social and team-related characteristics constituting a second projection dimension (e.g., cooperative, trustworthy). Participants were given the list of assorted attributes three times and were asked to rate how attributes apply to the ingroup, the outgroup and the inclusive superordinate category (scale ranged from 1 = "does not apply at all" to 7 = "fully applies"). To retrieve measures of relative group prototypicality Euclidian distance measures for the female subgroup towards the superordinate category and the male subgroup towards the superordinate category were calculated separately on the task- and team- dimension. These measures are used as indicators for profile dissimilarity. The reverse of this profile dissimilarity between a subgroup and the superordinate category defines a subgroup's prototypicality. A measure of the ingroup's relative prototypicality in relation to the outgroup

was calculated by subtracting the ingroup's from the outgroup's profile dissimilarity. A positive difference measure indicates relatively high ingroup prototypicality whereas a negative difference measure indicates relatively high outgroup prototypicality. A difference measure that does not significantly deviate from zero indicates relatively equal subgroup prototypicality.

### ***Social Identification***

Derived from an identification scale by Brown et al. (1986), identification with the ingroup was measured with four items ("I identify with female business students", "I see myself as belonging to female business students", "I am glad to belong to female business students"). The scale ranged from 1 = "do not agree" to 7 = "fully agree". Items had sufficient internal consistency,  $\alpha = .84$ . The means of the items were summed up to one index. Identification with the superordinate category was measured with the same four items adapted to the inclusive level,  $\alpha = .78$  (e.g., "I identify with business students in general").

### ***Relevance***

To control for effects resulting from diverging relevance attributions of task- and team-orientation participants were asked to rate all attributes with respect to their relevance for the prototype of the superordinate category (i.e., "How relevant is it to business students in general to feature these outlined attributes?"). The scale ranged from 1 = "not at all relevant" to 7 = "very relevant". Relevance scores of task-related attributes were summed up to one scale,  $\alpha = .68$ . The relevance scale of team-related attributes was also sufficiently reliable,  $\alpha = .70$ .

## **5.1.2 Results**

### ***Evaluation of the superordinate category***

To check how participants evaluate the superordinate category (business students in general) a univariate analysis of variance was conducted with gender (male, female) as between subjects factor. An alpha level of .05 was used for all statistical tests. Results revealed that the evaluation of the superordinate category remained unaffected by participants' gender,  $F(1,82) < 1$ ,  $p = ns$ ,  $\eta^2 < .01$ . Participants evaluated the superordinate category positively; the mean

perception differed significantly from the midpoint of the scale,  $M = 4.63$ ,  $SD = 1.13$ ,  $t(83) = 5.13$ ,  $p < .001$ .

### ***Mutual typicality***

The hypothesis of mutual typicality was tested conducting a 2x2x3 ANOVA with gender as between subjects factor and content (task-, team-orientation) and group (mean typicality ratings for male, female, and business students in general) as within subjects factors. Results revealed a main effect of content  $F(1, 82) = 98.58$ ,  $p < .001$ ,  $\eta^2_p = .55$  (compare table 5.1) indicating that both groups are perceived to be more task- than team-oriented. However, in line with predictions, this main effect was qualified by an effect of group  $F(2, 82) = 62.38$ ,  $p < .001$ ,  $\eta^2_p = .43$ . Male students are perceived as being more task-oriented ( $M = 5.49$ ,  $SD = .66$ ) than female students ( $M = 4.90$ ,  $SD = .74$ ,  $p < .001$ ) and students in general ( $M = 5.32$ ,  $SD = .71$ ,  $p < .01$ ). At the same time female students were not only perceived as being less task-oriented compared to male students but also compared to students in general,  $p < .001$ ; simple effect:  $F(2, 81) = 27.71$ ,  $p < .001$ ,  $\eta^2_p = .41$ . Female students however, were seen as being more team-oriented ( $M = 4.80$ ,  $SD = .93$ ) than male students ( $M = 4.03$ ,  $SD = .89$ ,  $p < .001$ ) and students in general ( $M = 4.23$ ,  $SD = .91$ ,  $p < .001$ ). Thus, female and male participants agreed that male students were perceived as being not only less team-oriented compared to female students but also compared to students in general,  $p = .03$ ; simple effect:  $F(2, 81) = 20.78$ ,  $p < .001$ ,  $\eta^2_p = .34$ . In sum there was evidence for mutual typicality. Male students were perceived to be more task-oriented whereas female students were perceived to be more team-oriented compared to the other groups. No main effects emerged for gender  $F(1, 82) = 1.49$ ,  $p = .23$ ,  $\eta^2_p = .02$  or group  $F(1, 82) = 1.22$ ,  $p = .30$ ,  $\eta^2_p = .03$ . There was a tendency for an interaction of group and gender  $F(2, 81) = 2.51$ ,  $p = .09$ ,  $\eta^2_p = .06$  (compare table 5.1 for means and standard deviations) and of content and gender,  $F(1, 82) = 3.14$ ,  $p = .08$ ,  $\eta^2_p = .04$  (compare table 5.1 for means and standard deviations). No three-way interaction effect emerged,  $F < 1$ ,  $p = ns$ ,  $\eta^2_p = .001$ .

Table 5.1 Means and standard deviations of group typicality ratings dissolved for content dimension and gender of participants

	Male-participants			Female participants			Total		
	Content-dimension			Content-dimension			Content-dimension		
	Task	Team	Total	Task	Team	Total	Task	Team	total
Male typicality	5.42 <sup>a,x</sup> (.66)	4.11 <sup>a,y</sup> (.76)	<b>4.77<sup>a,l</sup> (.58)</b>	5.56 <sup>a,x</sup> (.66)	3.95 <sup>a,y</sup> (.99)	<b>4.76<sup>a,l</sup> (.58)</b>	5.49 <sup>a,o</sup> (.66)	4.03 <sup>a,p</sup> (.89)	4.76 <sup>a</sup> (.58)
Female typicality	4.68 <sup>b,x</sup> (.77)	4.76 <sup>b,x</sup> (.80)	<b>4.72<sup>a,l</sup> (.59)</b>	5.12 <sup>b,y</sup> (.64)	4.84 <sup>b,x,y</sup> (1.04)	<b>4.89<sup>b,m</sup> (.58)</b>	4.91 <sup>b,o</sup> (.74)	4.80 <sup>b,o</sup> (.93)	4.85 <sup>a</sup> (.59)
Superordinate category typicality	5.16 <sup>c,x</sup> (.71)	4.21 <sup>a,z</sup> (.79)	<b>4.67<sup>a,l</sup> (.67)</b>	5.48 <sup>a,y</sup> (.77)	4.24 <sup>c,z</sup> (1.01)	<b>4.86<sup>a,l</sup> (.66)</b>	5.32 <sup>c,o</sup> (.71)	4.23 <sup>c,p</sup> (.91)	4.78 <sup>a</sup> (.67)
<b>total</b>	5.09 <sup>x</sup> (.59)	4.36 <sup>y</sup> (.75)	<b>4.73<sup>l</sup> (.53)</b>	5.39 <sup>z</sup> (.58)	4.35 <sup>y</sup> (.73)	<b>4.87<sup>m</sup> (.53)</b>	5.24 <sup>x</sup> (.55)	4.35 <sup>y</sup> (.74)	

*Note.* Means and standard deviations are given in each cell. Standard deviations are specified in brackets. Unequal superscripts<sup>a,b,c</sup> within the same column indicate significant differences between group typicality ratings. Unequal superscripts<sup>x,y,z</sup> within the same row indicate significant differences between task- and team-orientation (content-dimension). Unequal superscripts<sup>l,m</sup> indicate differences in total ratings dissolved for gender of participants. Unequal superscripts<sup>o,p</sup> indicate differences in total ratings between task- and team-orientation (content-dimension); all  $p < .05$ .

***Relative group prototypicality and perspective divergence***

To test the prediction that female students are consensually perceived as lacking fit (i.e., as having relative low ingroup prototypicality), Euclidian distance measures of male and female business students towards the superordinate category were calculated (target group). A 2x2x2 ANOVA with gender as between subjects factor, target group (male and female students) and content of projection dimension (task- and team-orientation) as within subjects factors was conducted (compare table 5.2 for all means and standard deviations). As predicted there was a main effect of target group  $F(1, 81) = 19.15, p < .001, \eta^2_p = .19$ , indicating that indeed female students were perceived as being more distant from the superordinate category ( $M = 3.03, SD = 1.41$ ) compared to male students ( $M = 2.44, SD = 1.17$ ). In line with the prediction of diverging perspectives on relative group prototypicality, this main effect was qualified by a marginal significant interaction of target group and gender  $F(1, 81) = 3.83, p = .054, \eta^2_p = .05$ . Simple comparisons were non-significant. Male and female participants did not differ significantly in their perception with regard to the relative prototypicality of male students ( $M_{\text{male}} = 2.3, SD = 1.18, M_{\text{female}} = 2.59, SD = 1.18$ ); simple effect:  $F(1, 81) = 1.22, p = .27, \eta^2_p = .02$ . Furthermore, male and female participants also perceived the relative prototypicality of female students similarly ( $M_{\text{male}} = 3.15, SD = 1.41, M_{\text{female}} = 2.91, SD = 1.41$ ); simple effect:  $F(1, 81) < 1, p = .44, \eta^2_p = .01$ . Hence, evidence for different perspectives on female and male relative group prototypicality was rather small. There was no main effect of gender  $F(1, 81) < 1, p = \text{ns}, \eta^2_p < .001$ . In addition to the predictions that guided Study 1, a main effect of content emerged  $F(1,81) = 4.94, p = .03, \eta^2_p = .06$  ( $M_{\text{task}} = 2.49, SD = 1.55; M_{\text{team}} = 2.99, SD = 1.40$ ), showing that participants projected stronger on the task- than on the team-dimension. There was a tendency for a moderation of this effect by gender,  $F(1, 81) = 3.76, p = .056, \eta^2_p = .04$ . Simple comparisons were non-significant. Male and female participants did not differ in their perception of the task-dimension ( $M_{\text{male}} = 2.57, SD = 1.06, M_{\text{female}} = 2.39, SD = 1.06$ ), simple effect:  $F(1,81) = 1.22, p = .44, \eta^2_p = .01$ ., as well as of the team-dimension ( $M_{\text{male}} = 2.87, SD = 1.40, M_{\text{female}} = 3.10, SD = 1.40$ ), simple effect:  $F(1, 81) < 1, p = .46, \eta^2_p = .01$ . No further significant interaction effects emerged, all  $F < 1, p = \text{ns}, \eta^2_p < .01$  (compare table 5.2 for means and standard deviations).

Table 5.2 Means and standard deviations of relative group prototypicality ratings dissolved for content dimension and gender of participants

	Male-participants			Female participants			Total		
	Content-dimension			Content-dimension			Content-dimension		
	Task	Team	Total	Task	Team	Total	Task	Team	total
Male	2.16 <sup>a,x+</sup>	2.44 <sup>a,y+</sup>	<b>2.3<sup>a,l</sup> (1.18)</b>	2.33 <sup>a,x</sup>	2.84 <sup>a,y</sup>	<b>2.59<sup>a+,l</sup> (1.18)</b>	2.24 <sup>a,o</sup>	2.65 <sup>a,p</sup>	2.44 <sup>a</sup>
prototypicality	(1.07)	(1.11)		(1.37)	(1.51)		(1.23)	(1.34)	(1.17)
Female	2.99 <sup>b,x+</sup>	3.30 <sup>b,x</sup>	<b>3.15<sup>b,l</sup> (1.41)</b>	2.46 <sup>a,y+</sup>	3.36 <sup>b,x</sup>	<b>2.91<sup>b+,l</sup> (1.41)</b>	2.72 <sup>b,o</sup>	3.33 <sup>b,p</sup>	3.03 <sup>b</sup>
prototypicality	(1.26)	(1.55)		(1.32)	(2.17)		(1.32)	(1.88)	(1.41)
<b>total</b>	2.57 <sup>x+</sup>	2.87 <sup>y+</sup>	<b>2.72<sup>l</sup> (1.14)</b>	2.39 <sup>x</sup> (1.06)	3.10 <sup>y</sup> (1.40)	<b>2.74<sup>l</sup> (1.16)</b>	2.49 <sup>x</sup> (1.55)	2.99 <sup>y</sup> (1.40)	
	(1.06)	(1.40)							

*Note.* Means and standard deviations are given in each cell. Standard deviations are specified in brackets. Unequal superscripts<sup>a,b</sup> within the same column indicate significant differences between group typicality ratings. Unequal superscripts<sup>x,y</sup> within the same row indicate significant differences between task- and team-orientation (content-dimension). Unequal superscripts<sup>l,m</sup> indicate differences in total ratings dissolved for gender of participants. Unequal superscripts<sup>o,p</sup> indicate differences in total ratings between task- and team-orientation (content-dimension); all  $p < .05$ , marginal effects  $p < .10$  are indicated with a cross +.

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**Identification**

In a next step it was explored whether ingroup identification and superordinate category identification depend on the gender of the participants. Therefore, a 2x2 ANOVA with identification (ingroup, superordinate category) as within subjects factor and gender (male, female) as between subjects factor was conducted. There was a main effect of identification;  $F(1, 82) = 5.51, p = .02, \eta^2_p = .06$ . Students identified more strongly with the superordinate category, students in general, ( $M = 4.65, SD = 1.24$ ) than with their ingroup which are male or female students respectively ( $M = 4.43, SD = 1.34$ ). There was no main effect of gender,  $F(1, 82) < 1, p = ns, \eta^2_p < .01$  and no interaction effect of gender and identification,  $F(1, 82) < 1, p = ns, \eta^2_p = .01$  (compare table 5.3).

**Relative group prototypicality as antecedent of identification**

Finally, it was hypothesized that relative group prototypicality is positively correlated with ingroup identification but less or not with superordinate category identification (students in general). The data set was split for gender to calculate correlations separately for male and female participants. However, there was no significant correlation between relative group prototypicality and ingroup identification neither for male subjects,  $r = -.29, p = .07, N = 40$ , nor for female subjects,  $r = .19, p = .23, N = 44$ . In line with predictions relative group prototypicality and superordinate category identification were unrelated within the male,  $r = .02, p = .93$ , as well as the female sub-samples  $r = .08, p = .60$  (compare table 5.3 for means and standard deviations of identification measures and relative group prototypicality). Furthermore, both levels of identification were generally highly correlated,  $r = .78, p < .001, n = 84$  and also within the two sub-samples, male sample:  $r = .79, p < .001, n = 40$ , female samples  $r = .78, p < .001, n = 44$ .

Table 5.3 Means and standard deviations of identification measures and relative group prototypicality

	male students	female students
ingroup identification	4.59 <sup>a</sup> (1.14)	4.29 (1.50)
superordinate category identification	4.76 <sup>a</sup> (1.13)	4.56 <sup>a</sup> (1.33)
<b>total</b> relative group prototypicality ( $og_{\text{prototypicality}} - ig_{\text{prototypicality}}$ )	1.20 <sup>b</sup> (1.43)	-.55 <sup>b</sup> (2.05)

*Note.* Means and standard deviations are given in each cell. Standard deviations are specified in brackets. Means that are marked with the superscript<sup>a</sup> differ significantly from the midpoint of the scale,  $p < .05$ . Means that are marked with the superscript<sup>b</sup> differ significantly from zero,  $p < .05$  (one-tailed).

### ***Relevance of task- and team-dimension***

An ANOVA with gender as between subjects factor was conducted to test for relevance differences in task- and team-related attributes (within factor). There was a significant main effect for relevance,  $F(1,81) = 59.17$ ,  $p < .001$ ,  $\eta^2 = .42$ , indicating that task-orientation was perceived to be more relevant ( $M = 5.93$ ,  $SD = .63$ ) than team-orientation ( $M = 5.14$ ,  $SD = .76$ ). There was no significant main effect of gender  $F(1,81) = 2.30$ ,  $p = .13$ ,  $\eta^2 = .03$  and no interaction effect of gender and relevance perception,  $F = 1$ ,  $p = \text{ns}$ ,  $\eta^2 < .01$  (compare table 5.4 for all means and standard deviations).



Table 5.4 Means and standard deviations for relevance perception of task- and team-orientation dissolved for gender of participants

	Gender of participant		
	Male	Female	Total
Relevance of task-orientation	5.78 <sup>a,x</sup> (.70)	6.06 <sup>a,y</sup> (.52)	5.93 <sup>a</sup> (.63)
Relevance of team-orientation	5.11 <sup>b,x</sup> (.78)	5.18 <sup>b,x</sup> (.75)	5.14 <sup>b</sup> (.76)
<b>Total</b>	5.45 <sup>x</sup> (.52)	5.62 <sup>x</sup> (.52)	

*Note.* Means and standard deviations are given in each cell. Standard deviations are specified in brackets.

### ***Weighted relative group prototypicality***

Results showed that participants regard task-orientation as more relevant and project stronger on this dimension compared to team-orientation. To control for relevance effects on relative group prototypicality, Euclidian distance measures were weighted with their mean relevance per attribute:  $d_{sc-sg/rel} = [(\sum^n (x_{sc,i} - x_{sg,i})^2) * x_{rel,i} / \sum^n x_{rel,i,j}]^{1/2}$  (with  $d_{sc-sg/rel}$  = relevance weighted dissimilarity measure, sc = superordinate category, sg = subgroup, xi = value of attribute i, n = number of attributes,  $x_{rel,i}$  = relevance of attribute i,  $x_{rel,i,j}$  = relevance of attributes i to j). A 2x2x2 ANOVA with gender as between subjects factor and target group and content as relevance-weighted within subjects factors was conducted (compare table 5.5 for all means and standard deviations). As expected the ANOVA revealed similar results compared to the un-weighted relative group prototypicality results. There was again a significant main effect of target group  $F(1,81) = 14.87, p < .001, \eta^2_p = .15$ , which was qualified by a significant interaction of target group by gender  $F(1,81) = 4.21, p = .04, \eta^2_p = .05$ . Thus, weighing Euclidian distance measures with relevance delivered marginally stronger evidence for perspective divergence. Nevertheless, male and female participants did not differ neither in the scope of perceived relative group prototypicality of male student; simple effect:  $F(1, 81) = 1.02, p = .32, \eta^2_p = .01$ ; nor of relative group prototypicality of female students; simple effect:  $F(1, 81) < 1, p = .36, \eta^2_p = .01$  (see table 5.5 for means and standard deviations). Again there was a marginal main effect of content  $F(1,81) = 6.63, p = .01, \eta^2_p = .08$ , with a tendency for a moderation by gender  $F(1,81) = 3.41, p = .07, \eta^2_p = .04$  (see table 5.5 for means and standard

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deviations). Thus, there was a marginal tendency for female participants to perceive the task-orientation as more prototypical than the team-orientation whereas male participants rated both dimensions as equally prototypical. There were no further main or interaction effects, all  $F < 1$ ,  $p = ns$ ,  $\eta^2_p < .01$ . In sum, weighing Euclidian distance measures with relevance did not substantially change the general picture of relative group prototypicality perceptions.

Table 5.5 Means and standard deviations of relative group prototypicality ratings weighted with mean relevance perceptions dissolved for content dimension and gender of participants

	Male-participants			Female participants			Total		
	Content-dimension			Content-dimension			Content-dimension		
	Task	Team	Total	Task	Team	Total	Task	Team	total
Male prototypicality	.88 <sup>a,x+</sup> (.45)	.94 <sup>a,x,y</sup> (.45)	<b>.91<sup>a,l</sup> (.48)</b>	.95 <sup>a,x</sup> (.58)	1.08 <sup>a,y</sup> (.59)	<b>1.02<sup>a,l</sup> (.48)</b>	.92 <sup>a,o</sup> (.52)	1.02 <sup>a,p</sup> (.53)	.97 <sup>a</sup> (.48)
Female prototypicality	1.23 <sup>b,x+</sup> (.53)	1.23 <sup>b,x</sup> (.60)	<b>1.23<sup>b,l</sup> (.56)</b>	1.00 <sup>a,y+</sup> (.57)	1.23 <sup>a,x</sup> (.81)	<b>1.12<sup>a,l</sup> (.55)</b>	1.11 <sup>b,o</sup> (.56)	1.23 <sup>b,o</sup> (.71)	1.17 <sup>b</sup> (.40)
<b>total</b>	1.06 <sup>x</sup> (.45)	1.08 <sup>x,z</sup> (.53)	<b>1.07<sup>l</sup> (.46)</b>	.98 <sup>x</sup> (.45)	1.16 <sup>y,z</sup> (.53)	<b>1.07<sup>l</sup> (.46)</b>	1.01 <sup>o</sup> (.45)	1.12 <sup>p</sup> (.54)	

*Note.* Means and standard deviations are given in each cell. Standard deviations are specified in brackets. Unequal superscripts<sup>a,b</sup> within the same column indicate significant differences between group typicality ratings. Unequal superscripts<sup>x,y,z</sup> within the same row indicate significant differences between task- and team-orientation (content-dimension). Unequal superscripts<sup>l,m</sup> indicate differences in total target ratings dissolved for gender of participants. Unequal superscripts<sup>o,p</sup> indicate differences in total ratings between task- and team-orientation (content-dimension); all  $p < .05$ , marginal effects  $p < .10$  are indicated with a cross +.

### 5.1.3 Discussion

This first study aimed at describing how ingroup projection results in the perception of lack of fit of the female subgroup. It was intended to transpose research on lack of fit (Heilman, 1983, 1995, 2001) into the framework of the IPM (Mummendey & Wenzel, 1999), a cognitive-motivational model, which makes assumptions about the underlying processes of this phenomenon. Applying these propositions, it was intended to ensure that the phenomenon of lack of fit can be demonstrated not only within organizations but already at the university within the student context. If this is the case, the student context would be a field that allows economically and practically research and further development of the proposed theoretical model.

In addition to this abstract intention, Study 1 strived for several subsequent goals. First, it was intended to replicate results that have been demonstrated within the field of gender stereotypes. More precisely, it was aimed to test if males and females are perceived to be mutually typical on different content dimension (i.e., task- & team-dimension). Second, extending previous research results, I assumed that despite this complementary stereotypicality both groups are not mutually relative prototypical. Instead the lack of fit of women is more generally related to the organizational prototype and not content-specific. Despite general agreement with regards to female students' low relative group prototypicality, perspective divergence with regard to the degree of the other group's relative prototypicality is likely. Finally, the study was conducted to find first correlational evidence that relative ingroup prototypicality is positively related to ingroup identification.

In a first step, before analyzing the data to test the main predictions, it was checked how participants evaluate the superordinate category (i.e., students in general). According to the IPM the valence of the superordinate category determines the meaning of relative group prototypicality within an intergroup situation (Mummendey & Wenzel, 1999; Wenzel et al., 2003). If the superordinate category is positive, relative group prototypicality reflects positively onto the ingroup and in consequence most likely onto the identification with the ingroup. Therefore, evaluation of the superordinate category was measured to ensure that this prerequisite was met within the present field context which was actually the case.

In a next step it was analyzed how male and female business students perceive each other with regard to task- and team-orientation. In line with predictions, Study 1 revealed that both gender groups perceived each other to be mutually typical on different content dimensions. This result is in line with empirical evidence within the field of gender

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stereotypes and thus replicates an often demonstrated finding (cf., Diekmann & Eagly, 2000; Eagly & Steffen, 1984; Willemssen, 2002). Male students are perceived to be more typical on the task-dimension compared to female students. Female students, contrarily, are perceived to be more typical on the team-dimension compared to male students. Thus, male and female business students are mutually typical with regard to task- and team-orientation. Furthermore, the comparison of mean typicality ratings of both subgroups (male and female students) and the superordinate category (students in general) reveals how males and females are perceived in relation to the prototype of the inclusive level. Male students are not only perceived as being more typical on the task-dimension compared to female students but also compared to students in general. Moreover, male students are not only perceived as being less typical on the team-dimension compared to female students but also compared to students in general. Thus, male students are perceived as being most typical on the task-, but least typical on the team-dimension in relation to the superordinate category and the female subgroup. By contrast, female students are not only perceived as being less typical on the task-dimension compared to male students, but also compared to students in general. Moreover, female students are not only perceived as being more typical on the team-dimension compared to male students, but also compared to students in general. Thus, female students are perceived as being least typical on the task-, but most typical on the team-dimension in relation to the superordinate category and the male subgroup. However, mutual high typicality on both dimensions might not necessarily imply that both groups complement each other within the context of the superordinate category. This notion was reflected within the framework of the IPM.

In line with the IPM, it was assumed that female students are consensually perceived as being low in relative group prototypicality compared to male students. Results show that female students are indeed consensually perceived as less relatively prototypical compared to male students. This perception was not qualified by the content of projection (task- or team-orientation). Thus, even though male and female students are perceived to be mutually typical – they are not perceived to be mutually prototypical. Hence, Study 1 supports Krell's (1994) critique of an assumption put forward by management theory, namely that women and men are supposed to complement each other at work. This also appears less likely as results of Study 1 show that both, male and female participants project stronger on the task- compared to the team-dimension suggesting that the former male-typed dimension is more descriptive of the superordinate category prototype. As a consequence it might further

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establish that female students are consensually perceived as lacking fit. This result is in line with Heilman's (1983, 1995, 2001) notion of a lack of fit of female employees at work.

Despite this agreement on female students' relative low ingroup prototypicality, subgroups are likely to disagree with regard to the extent of the relative group prototypicality of the other group. Contrary to this assumption results provided only marginal evidence for perspective divergence. Thus, high ingroup prototypicality of male students and low ingroup prototypicality of female students is a consensually shared perception of both males and females. This result is rather surprising since recent research has demonstrated that stereotypes about men, women and management are changing and softening. Studies demonstrated that even though management is still more associated with male than female attributes, the perception of management is less accentuated male-typed than 20 years ago and is becoming more androgynous and neutral (Powell et al., 2002; Willemsen, 2002). Similarly, one might assume that also the prototype of organizations (and accordingly of business students in general) is becoming less male-typed. If this is the case, then there should be room for women to claim to be more relatively prototypical for the inclusive category than they are perceived by males or at least to claim that males are less relative prototypical than males perceive themselves. However, Study 1 does not support this. Results rather support the interpretation that the prototype of the superordinate category is that narrowly male defined that males and females agree upon the lack of fit of females. The question emerges what defines if a prototype of the superordinate category is represented in a narrow or a complex way. In his Social Identity Theory of Leadership, Hogg (2001a, 2001b) suggests in line with SCT (Turner et al., 1987) that prototype formation is a cognitive and social process. Taken further, he assumes that prototypes are more likely defined by dominant attributes of the majority group. Applying propositions developed in social cognition one might picture this process as social learning or as induction process (Smith & Zarate, 1990). Experiences with superordinate category exemplars result in a summarized category representation which depicts the central tendency of the category (Wattenmaker, Dewey, Murphy, & Medin, 1986). Thus frequent attributes shape more strongly the prototype content than less frequent attributes. Therefore, a male majority more easily determines the definition of a superordinate category prototype. However, the proportion of male and female business students was almost equal at the University of Jena in spring 2003, when this first study was conducted (46% females; 54% males). While business administration used to be a subject that was predominately studied by male students, female students are increasingly enrolling in these courses (cf., FFP, 2002a, 2002b). Thus, the prototype of business students should be

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represented more complex in terms of male and female attributes. Nevertheless, cognitive representations that have once been learned often become quite resistant to change even in face of disconfirming information (Richards & Hewstone, 2001). Therefore, prototypes might remain narrowly defined by a former majority even though numerical distributions changed. As with stereotypes (Powell et al., 2002; Sczesny, 2003b) prototype representations are likely to only change slowly. Thus, the effect of almost equal gender proportion might appear decelerated. Nevertheless, the impact of numerical proportion on the definition of the prototype of the superordinate category should be addressed and clarified in future research.

Finally, Study 1 was set up to deliver first correlational evidence that relative ingroup prototypicality is positively related to ingroup identification. Contrary to this prediction Study 1 did not reveal any significant correlation. However, results of Study 1 speak in favour the assumption that relative group prototypicality and superordinate category identification might rather not be related. Relative group prototypicality and superordinate category identification were not significantly positively correlated for both male and female participants. Nevertheless, the statistical test does not rule out the alternative hypothesis. The assumption that relative group prototypicality probably does rather not affect identification with the superordinate category is a classical null hypothesis (H0). Such a null hypothesis usually sets the basis against which one statistically tests an alternative hypothesis (H1) that proposes an effect of x (relative prototypicality) on y (superordinate category identification). Usually to test the probability that one accepts an alternative hypothesis even though there is a null effect, one defines an  $\alpha$  error probability of 5%, which equals a p-value of .05 (Bortz, 1993). However in this case, an  $\alpha$  error probability of 5% implies a high  $\beta$  error probability (i.e., acceptance of a H0 even though there is an effect). Therefore, to test sharply an H0 it is not sufficient to show that in a statistical test with  $\alpha = 5\%$  there is no effect. Instead to keep the  $\beta$  error probability small p-values of significance tests should be higher than .95. As the significance test of the correlation between relative group prototypicality and superordinate category identification indicated a p-value of .93 for male participants, one can derivate that there is marginal statistical support for the null hypothesis. However, the p-value of .60 obtained for the correlation between group prototypicality and superordinate category identification for female participants, leaves a more uncertain picture whether the null hypothesis applies. Hence, further research is needed to test under what conditions and in which contexts superordinate category identification is affected and is not affected by relative group prototypicality.

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***Excursus and further Explorations***

So far the reported and discussed results replicated empirical evidence from the field of gender stereotype research (i.e., mutual typicality) and demonstrated that the IPM is applicable in the context of gender relations at university. Extending propositions of both research fields it was further explored whether both content dimensions task- and team-orientation are perceived to be unequally relevant with regard to the superordinate category. Indeed task-orientation was perceived to be more relevant for the superordinate category (business students in general) compared to team-orientation by both male and female participants. However, weighting Euclidian distance measures with the mean relevance perception per item did not substantially change perceptions of relative group prototypicality. Nevertheless, the diverging relevance of both dimensions might allow some speculative considerations about the meaning of mutual typicality. Mummendey and Schreiber (1984) pointed out that mutual typicality on dimensions with diverging relevance is often a hidden way to express the predominance of one group as the outgroup is evaluated more favourably on dimensions that are unimportant and irrelevant to the ingroup (and vice versa with regard to the evaluation of the ingroup). This should be especially true when considering the relevance of a content dimension with regard to the superordinate category. Consequently, different relevance might have implications for the meaning of typicality on the task- and team-dimension respectively. As the task-dimension is perceived to be particularly relevant for business students in general, being less task-oriented might constitute a potential drawback for female business students. However, being more task-oriented than business students in general might serve male students as relevant distinction. As the team-dimension is perceived to be less relevant for business students in general, being more team-oriented might either constitute a drawback or at least a futile characteristic for female business students. However, being less team-oriented than business students in general, serves as a less relevant characteristic and therefore might neither advantage nor disadvantage male students. Whether these content-specific discrepancies have similar or different implications on, for instance female students' performance evaluations, raises a question that should be investigated in future research. However, within the present research project the impact of relevance will not be further analyzed.



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***Methodological limitations***

The interpretation of Study 1 is limited by some methodological drawbacks. To capture projection processes leading to the perception of relative group prototypicality, participants were asked to rate a list of attributes comprising solely positive traits. However, this positivity of attributes sets a limitation to the interpretation of projection processes. Positive attributes trigger mere positive evaluative cognitions leading to an approach tendency and fuelling positivity bias (Cacioppo, Gardner, & Berntson, 1997; Mezulis, Abramson, Hyde, & Hankin, 2004; Peeters, 1971). Hence, projection might be merely a result of motivational approach tendencies in this first study. However, ingroup projection is more than a group-serving positivity bias. Ingroup projection means perceiving positive and negative ingroup attributes and projecting them onto the superordinate category. Accordingly, to capture the whole picture of group typicality and resulting relative group prototypicality negative attributes will be included in subsequent studies as well.

A second limitation to Study 1 might be its narrow conceptualization of identification by using a short version of Brown's and colleagues' (1986) identification scale. The identification scale used in this study mainly reflected cognitive aspects of identification falling short of evaluative and behavioural aspects. However, social identification has been shown to comprise different dimensions reflecting cognitive, evaluative and behavioural facets (Ellemers, Kortekaas, & Ouwerkerk, 1999; see Jackson, 2002 for review). Research has shown that such an integrative view enhances the understanding of the role of identification as predictor and as dependent variable (Ashmore et al., 2004). As different facets contribute to identification, an integrative view might give a more complete picture on its relation to relative prototypicality.

***Summary***

To summarize, Study 1 captured the phenomenon of lack of fit within the framework of the IPM. It could be demonstrated that female business students are perceived to be low in relative ingroup prototypicality compared to male business students. Thus, this study suggests that the student context functions similar to the work setting. Therefore, the student setting appears to be adequate to empirically investigate the proposed research model in subsequent studies. Study 1 showed that male and female students are perceived as mutually typical yet not as mutually prototypical. It shed some light on the meaning of mutual typicality while considering the role of diverging relevance attributions with regard to both content

dimensions. However, controlling for relevance did not substantially change perceptions of relative group prototypicality. Nevertheless, Study 1 failed in delivering first evidence of a correlational association between relative prototypicality and ingroup identification. The following studies aim to test experimentally whether relative group prototypicality affects ingroup identification and also examine subsequent behavioural implications.

## **5.2 Study 2**

The aim of Study 2 was to test experimentally how different degrees of relative group prototypicality influence ingroup identification. Therefore, relative group prototypicality was manipulated and checked for its effectiveness. I assumed that relatively high ingroup prototypicality (high ingroup fit) leads to higher ingroup identification compared to relatively high outgroup prototypicality (lack of ingroup fit) or equal group prototypicality.

### **5.2.1 Method**

#### ***Design and Participants***

An experiment with three conditions (relatively high ingroup, relatively high outgroup and equal prototypicality as a control group) was conducted. In order to simplify the reading conditions will be referred to as high ingroup, high outgroup and equal prototypicality. 68 female business students of the University of Jena took part in this study. The age of participants ranged from 18 to 29 ( $M = 21.75$ ;  $SD = 2.39$ ).

#### ***Procedure***

Participants were recruited during lectures and seminars. Between 10 and 20 students participated in one session. Participants received a written instruction and were first asked to complete an alleged pretest which constituted the manipulation. In a second step participants received a questionnaire, ostensibly on students' self concept, which comprised the measures outlined below. In order to make all relevant categories salient participants were asked to differentiate carefully between female students (i.e., ingroup), male students (i.e., outgroup) and students in general (i.e., superordinate category). After the completion of the questionnaire, participants were debriefed thoroughly and received a bar of chocolate for their participation.

#### ***Manipulation of Relative Group Prototypicality***

The alleged pretest was said to be relevant for a future study dealing with the topic of "social integration and performance at work". This headline was chosen to ensure that students think

more of work-related than leisure-time-related issues. Students were asked to brainstorm and generate three typical student attributes that could be either positive or negative. Doing this they were requested to take one out of three perspectives. In the condition relatively high ingroup prototypicality participants were asked to think of attributes on which female students are more typical students in general than male students. ('In what respect are female students (*German: Studentinnen*) more typical students in general (*Studierende*) than male students (*Studenten*)?'). In the condition relatively high outgroup prototypicality participants were asked to think of attributes on which male students are more typical students in general than female students. In a third condition (control group) participants were asked to think of attributes on which female students and male students are equally typical students in general.

## **Measures**

### ***Manipulation check***

In accordance with prototypicality measures by Wenzel and colleagues (Wenzel, et al., 2003), participants were requested to rate a list of attributes balanced in stereotypicality and valence. As demonstrated in Study 1 as well as in previous research, male students are perceived as being more task-oriented, whereas female students are perceived as being more team-oriented (Diekmann & Eagly, 2000). Accordingly, in this study typical male student attributes were defined as positive and negative competence- and task-related characteristics. Typical female student attributes were conceptualized as positive and negative social skill- and team-related characteristics. Both task- and team-related attributes were pretested for group typicality in an independent sample. Within the main study, participants were asked to rate how these attributes apply to the ingroup, the outgroup and the inclusive superordinate category (scale range from 1="does not apply at all" to 7="fully applies"). Euclidian distances between ingroup and the superordinate category ratings on one hand and between outgroup ratings and the superordinate category ratings on the other hand were calculated and used as indicator for profile dissimilarity. The inverse of this profile dissimilarity between a subgroup and the superordinate category is a measure of a subgroup's prototypicality. To receive a measure of relative ingroup prototypicality profile dissimilarity of the ingroup was subtracted from profile dissimilarity of the outgroup. Hence, a relative ingroup prototypicality measure that is positive in sign indicates relatively high ingroup prototypicality whereas a negative measure indicates relatively high outgroup prototypicality. Correspondingly, a value that does not significantly differ from zero indicates equal subgroup prototypicality.

### *Evaluation of the superordinate category*

The evaluation of the superordinate category was assessed by a single item (“How do you evaluate students in general?”). The scale ranged from 1=“very negative” to 7=“very positive”.

### *Social identification*

Participants’ identification with the ingroup, female students, was assessed with an 11-item scale ranging from 1= “do not agree” to 7=“fully agree”. Thus, a more extensive measure of identification than in Study 1 was chosen to reflect cognitive, evaluative and behavioural aspects of group-based self-definition. Six items were based on Brown’s and colleagues’ identification scale (Brown et al., 1986). The scale included cognitive and evaluative aspects such as “I regard myself as belonging to the female students “, or “I feel strong ties with female students”. Five additional items were added to reflect further evaluative and behavioural aspects of identification (e.g., “I am pleased to be a female student”). The reliability of the resulting scale was satisfyingly high,  $\alpha = .88$ . To control for effects of group prototypicality on the superordinate category level, participants’ identification with the superordinate category, students in general, was assessed with the same 11-item scale adapted to the superordinate category level (e.g., “I identify with students in general”). This scale could reliably assess superordinate category identification,  $\alpha = .86$ .

## **5.2.2 Results**

### *Manipulation check*

To check the effectiveness of the manipulation a one-factorial analysis of variance with prototypicality manipulation as between subjects factor and relative prototypicality as dependent variable was conducted. There was a significant main effect of prototypicality manipulation,  $F(2, 65) = 3.74, p = .03, \eta^2 = .10$ . Participants perceived their ingroup to be high in relative prototypicality in the high ingroup prototypicality condition ( $M_d = .51, SD = 1.54$ ). This mean perception of relative ingroup prototypicality was marginally different from zero,  $t(21) = 1.55, p = .07$ , one-tailed. Furthermore, participants perceived the outgroup as being relatively high in prototypicality in the high outgroup prototypicality condition ( $M_d = -.48, SD = 1.00$ ). This mean perception of relative outgroup prototypicality differed significantly from zero,  $t(22) = -2.28, p = .03$ . Correspondingly, ingroup and outgroup were

perceived as rather similar in the relatively equal prototypicality condition ( $M_d = -.14$ ,  $SD = 1.07$ ) with its mean perception not significantly differing from zero,  $t(22) = -.61$ ,  $p = .55$ . Simple comparisons between conditions confirmed that the condition high ingroup prototypicality differed significantly from the condition high outgroup prototypicality,  $p = .009$  and the control group,  $p = .04$  (one-tailed), delivering further evidence for a successful manipulation. There was no difference between high outgroup prototypicality and the control group,  $p = .35$ .

### ***Evaluation of the Superordinate Category***

Participants perceived the superordinate category to be positive. The mean evaluation differed significantly from the midpoint of the scale,  $t(64) = 14.49$ ,  $p < .001$  ( $M = 5.37$ ,  $SD = .76$ ). To check for unintended effects of the manipulation on the evaluation rating a one-factorial analysis of variance with prototypicality manipulation as a between subjects factor was conducted. As expected there was no effect of prototypicality,  $F(2, 65) < 1$ ,  $p = ns$ ,  $\eta^2 = .02$ . Hence, the evaluation of the inclusive category was not affected by the manipulated relative subgroup prototypicality.

### ***Impact of Relative Prototypicality on Identification***

Identification with the ingroup and identification with the superordinate category were highly correlated;  $r = .84$ ,  $p < .001$ ;  $n = 68$ . Therefore, both identification measures were included as dependent variables in a multivariate analysis of variance with prototypicality condition as between subjects factor. As predicted a main effect for prototypicality emerged,  $F(2, 65) = 6.23$ ,  $p < .01$ ,  $\eta^2_p = .16$ , indicating that relative group prototypicality had an impact on identification. There was a strong univariate effect of group prototypicality on ingroup identification  $F(2, 65) = 5.07$ ,  $p < .01$ ,  $\eta^2_p = .14$ . Simple comparisons revealed that - as hypothesized - ingroup identification was highest in the high ingroup prototypicality condition ( $M = 5.12$ ,  $SD = 1.11$ ) compared to the high outgroup prototypicality condition ( $M = 4.32$ ,  $SD = .93$ ,  $p < .01$ ) and the control group ( $M = 4.29$ ,  $SD = .92$ ,  $p < .01$ ). With an alpha level of .05 there was no significant but a tendency of an univariate effect on identification with the superordinate category,  $F(2, 65) = 2.88$ ,  $p = .06$ ,  $\eta^2_p = .08$  (see Table 5.6 for means and standard deviations). Hence, in line with the main prediction ingroup identification was clearly affected by group prototypicality.

Table 5.6 Means and standard deviations of ingroup and superordinate category identification under three prototypicality conditions

	high ingroup prototypicality	high outgroup prototypicality	equal subgroup prototypicality (control)	total
Ingroup identification	5.12 <sup>x</sup> (1.11)	4.32 <sup>y</sup> (.93)	4.29 <sup>y</sup> (.92)	4.95 <sup>a</sup> (.89)
Superordinate category identification	5.26 <sup>x</sup> (.94)	4.64 <sup>y</sup> (.83)	4.94 <sup>x,y</sup> (.84)	4.57 <sup>b</sup> (1.05)

*Note.* Means and standard deviations are given in each cell. Standard deviations are specified in brackets. Unequal superscripts<sup>x,y</sup> within rows indicate significant differences ( $p < .05$ ) in identification between the three prototypicality conditions. Unequal superscripts<sup>a,b</sup> within the same column indicate the difference between total of both identification levels at  $p < .05$ .

### 5.2.3 Discussion

The aim of Study 2 was to test for the impact of group prototypicality on ingroup identification. Therefore, the perception of relative group prototypicality was manipulated as relatively high ingroup, relatively high outgroup and equal subgroup prototypicality. Indeed the manipulation check indicated that the perception of relative group prototypicality differed significantly between the conditions ‘high ingroup’, ‘high outgroup’ as well as ‘equal prototypicality’. However, the conditions ‘high outgroup prototypicality’ and ‘equal prototypicality’ did not differ significantly. This drawback might be disregarded as mean perceptions of relative group prototypicality within the experimental conditions emerged in the direction of the manipulation. As expected, the mean perception of relative group prototypicality differed positively from zero in the condition ‘high ingroup prototypicality’ and negatively from zero in the condition ‘high outgroup prototypicality’. Likewise, the mean perception of group prototypicality did not differ significantly from zero in the condition ‘equal prototypicality’. Thus, the perception of relative group prototypicality changed in accordance with the manipulation instruction.

The manipulation was checked through the same measure of relative group prototypicality as in Study 1. However, in Study 1 this measure comprised only positive attributes of group typicality. This flaw was met in Study 2 by integrating negative attributes in the prototypicality measure. The balance of positive and negative attributes counters an

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interpretation of ingroup projection as a mere positivity bias (cf., Cacioppo et al., 1997; Mezulis et al., 2004; Peeters, 1971), but rather allows an interpretation as ingroup generalization regardless of the valence of ingroup attributes.

Additionally, it was assured – as in Study 1 – that participants evaluate the superordinate category (students in general) positively. Only if the superordinate category is perceived to be positive, being high in relative group prototypicality has a positive meaning (Mummendey & Wenzel, 1999; Wenzel et al., 2003). Taken further, it is likely that only then relative group prototypicality exerts its impact on ingroup identification. It was furthermore found that the manipulation of relative group prototypicality did not affect the evaluation of the superordinate category. Hence, prototypicality manipulation and evaluation of the superordinate category were not confounded.

The main aim of Study 2 was to test the assumption that relative group prototypicality affects ingroup identification, but leaves superordinate category identification rather unaffected. To test this prediction a more thorough measure of identification was used compared to Study 1, now comprising cognitive, evaluative and behavioural facets of group-based self-definition. Whereas the correlational design of Study 1 only partially supported the hypothesis with respect to superordinate category identification (cf., discussion Study 1), experimental evidence of Study 2 is in accordance with this hypothesis. As predicted relatively high ingroup prototypicality (i.e., greater ingroup fit) led to increased ingroup identification compared to relatively high outgroup prototypicality (i.e., low ingroup fit) and equal subgroup prototypicality. Therefore, results underline the importance of relative group prototypicality for ingroup identification. By contrast, identification with the superordinate category was – as predicted - not significantly affected by prototypicality manipulation. However, there was a tendency of increased superordinate category identification when the ingroup was relatively high in prototypicality compared to when the outgroup was relatively high in prototypicality or to equal subgroup prototypicality. Thus, Study 2 does not rule out the possibility that superordinate category identification is also affected by relative group prototypicality.

Summing up, Study 2 demonstrated that the perception of relative group prototypicality was successfully manipulated. Furthermore, results support the prediction that relative group prototypicality affects ingroup identification.



### **5.3 Study 3**

The aim of Study 3 was to replicate the effect of relative group prototypicality on ingroup identification found in Study 2. Relatively high ingroup prototypicality is assumed to lead to increased ingroup identification compared to relatively high outgroup prototypicality and relatively equal prototypicality. Research in social psychology has shown that ingroup identification is related to intergroup differentiation (Brown et al., 1986; Kelly, 1988; van Leeuwen et al, 2003) and constitutes a necessary prerequisite for engagement in collective behavioural strategies in favour of the ingroup (Ashforth, & Mael, 1989; Kessler, & Mummendey, 2002; Mummendey, et al., 1999a). This question is therefore addressed in the third study. High ingroup prototypicality is assumed to lead to an increase in ingroup identification, which in turn should lead to more intergroup differentiation and more collective behaviour in favour of the ingroup. Thus, Study 3 intended to test for indirect effects of relative group prototypicality.

#### **5.3.1 Method**

##### ***Design and Participants***

An experiment with three different manipulation conditions of relative group prototypicality (relatively high ingroup, relatively high outgroup, equal prototypicality) was conducted. 103 female business students of the University of Jena took part in this study. The age of participants ranged from 18 to 28 years ( $M = 19.88$ ,  $SD = 1.82$ ).

##### ***Procedure***

Participants were recruited during lectures and seminars. The same procedure as in Study 2 was carried out in Study 3 except for some alterations of the questionnaire (see below). After the completion of the questionnaire, participants were debriefed thoroughly and received a reward (bar of chocolate).

### ***Manipulation***

Study 3 was introduced as comprising three parts. The first two parts were told to contain two pretests dealing with the topic “social integration and performance at work” which were followed by a questionnaire supposedly on students’ self-concept. As in Study 2, participants were asked to generate three typical positive or negative student attributes while taking a certain perspective. In the condition ‘high ingroup prototypicality’ participants were requested to think of attributes showing female students to be more typical students in general than male students. In the condition ‘high outgroup prototypicality’ participants were asked to think of attributes showing male students be more typical students in general than female students. In a third condition (control group) participants were asked to think of attributes showing female students and male students to be equally typical students in general. To test whether the effect of relative group prototypicality is further moderated, the valence of the superordinate category was manipulated as an additional factor. Participants were requested to think of positive or negative features of the superordinate category in a second alleged pretest. However, the manipulation was not successful as checked through a single item that assessed the evaluation of the superordinate prototype (i.e., “How do you evaluate students in general?”). There was no main effect of valence,  $F(2, 96) < 1$ ,  $p = ns$ ,  $\eta^2_p < .001$  and no interaction effect of valence and prototypicality manipulation,  $F(2,97) < 1$ ,  $p = ns$ ,  $\eta^2_p < .01$  (note that 10 participants did not answer the evaluation measure in the sample). Overall participants perceived the superordinate category to be positive. The mean evaluation is significantly above the midpoint of the scale,  $t(92) = 14.55$ ,  $p < .001$  ( $M = 5.22$ ,  $SD = .81$ ). Furthermore, the valence manipulation did not have any impact on any of the dependent measures in this study. Therefore, valence is not considered as factor in the subsequent analysis.

### ***Measures***

#### ***Identification***

Participants’ identification with the ingroup (female students) was assessed with the same 11-item scale that was used in Study 2,  $\alpha = .85$ . Adapted to the inclusive level the same scale served as a reliable measure of superordinate category identification (students in general),  $\alpha = .83$ .

### ***Intergroup differentiation***

Intergroup differentiation was measured according to an adapted version of a bias scale developed by Hornsey and Hogg (2000). Participants had to rate their preferences for the ingroup or the outgroup on a single bipolar 6-point scale (i.e., “It would be difficult to work exclusively with male /female students”). The scale ranged from -3 = “by all means male students” to +3 = “by all means female students”. Thus, a negative mean indicates less positive outgroup evaluations in comparison to the ingroup. A positive mean indicates less positive ingroup evaluations in comparison to the outgroup.

### ***Behavioural strategies***

Finally, behavioural intentions to engage in favour of the ingroup were measured. Following Veenstra and Haslam (2000) four items captured the general willingness to collectively stand for the ingroup (e.g., “I would demonstrate in order to improve the situation of female students.”). The resulting scale was highly reliable,  $\alpha = .80$ . Additional items were included into the measurement of behavioural strategies to grasp further aspects of group behaviour. Two items measured the favourability of ingroup network initiatives (e.g., “We female students should engage into networks in order to improve our opportunities”) and were summed up to one scale,  $r = .42$ ,  $p < .001$ ,  $n = 103$ . Ingroup solidarity as opposed to superordinate category solidarity was assessed by two 6-point bipolar items. Participants were given two situations in which a female student was unfairly treated by a professor. Female participants had to indicate whether they would rather protest against this unfair treatment with all students (superordinate category) or exclusively with female students (ingroup). The scale ranged from -3= “by all means with students in general” to +3 = “by all means with female students”. Both items were correlated and summed up to one scale,  $n = 103$ ,  $r = .29$ ,  $p < .01$ .

## **5.3.2 Results**

### ***Impact of Relative Prototypicality on Identification***

Both ingroup identification and superordinate category identification were strongly correlated,  $r = .69$ ,  $p < .001$ ,  $n = 103$ . Therefore, a multivariate analysis of variance (MANOVA) with prototypicality (high ingroup, high outgroup, equal prototypicality) as a between subjects

factor was conducted. As expected a significant main effect of prototypicality emerged  $F(2, 100) = 3.93, p = .02, \eta^2_p = .07$ , indicating that relative group prototypicality significantly affected identification. Results indicated a strong univariate effect of group prototypicality on ingroup identification  $F(2, 100) = 3.71, p = .02, \eta^2_p = .07$ . As hypothesized ingroup identification was highest in the high ingroup prototypicality condition ( $M = 4.94, SD = .77$ ) compared to the high outgroup prototypicality condition ( $M = 4.57, SD = .85, p = .03$ , one-tailed) and the control group ( $M = 4.38, SD = .92, p < .01$ ). No significant effect of prototypicality emerged for identification with the superordinate category,  $F(2, 100) = 1.16, p = .31, \eta^2_p = .02$  (see Table 5.7 for means and standard deviations).

Table 5.7 Means and standard deviations of ingroup and superordinate category identification under three prototypicality conditions

	high ingroup prototypicality	high outgroup prototypicality	equal subgroup prototypicality (control)	<b>total</b>
Ingroup identification	4.94 <sup>x</sup> (.77)	4.57 <sup>y</sup> (.85)	4.36 <sup>y</sup> (.92)	4.59 <sup>a</sup> (.87)
superordinate category identification	5.13 (.72)	4.86 (.82)	4.87 (.89)	4.92 <sup>b</sup> (.82)

*Note.* Means and standard deviations are given in each cell. Standard deviations are specified in brackets. Unequal superscripts<sup>x,y</sup> within rows indicate significant differences ( $p < .05$ , one-tailed) in identification between the three prototypicality conditions. Unequal superscripts<sup>a,b</sup> within the same column levels indicate the significant difference between the total of both identification differences at  $p < .001$ .

### ***Indirect Effects of Relative Group Prototypicality***

To test the prediction that high relative ingroup prototypicality leads through heightened ingroup identification to intergroup differentiation and to an increase in collective behavioural strategies, a path-analytic model using the structural equation modeling program AMOS 4 (Arbuckle & Wothke, 1999) was compiled (compare figure 5.1.). To capture the effect of high relative ingroup prototypicality on ingroup identification as shown in Study 2 and 3, the condition ‘relatively high ingroup prototypicality’ was contrasted against the conditions ‘relatively high outgroup prototypicality’ and the control group (2, -1, -1). Before using this contrast in the path-analytic model it was tested for further between-condition effects on

identification. Therefore, ingroup identification was regressed onto the a-priori contrast (2, -1, -1) and tested against the orthogonal contrast (0, 1, -1). There was again strong support for the hypothesis that high ingroup prototypicality leads to increased ingroup identification;  $F(1, 100) = 6.65, p = .01, R^2 = .06$ . The analysis of residuals not captured by the a-priori contrast did not reach significance,  $F(1, 100) < 1, p = ns$ , and did not explain significantly further variance  $R^2_{\text{change}} < .01$ . Hence, only high ingroup prototypicality led to increased ingroup identification. In a next step the a-priori contrast was integrated as exogenous variable; ingroup identification, intergroup differentiation, and the three collective behavioural strategies (collective engagement, solidarity, networking) were incorporated as endogenous variables into the path-analytic model (compare table 5.8 for correlations between the variables). Since collective engagement, solidarity and networking represent collective behavioural strategies error residuals were allowed to correlate within the path model. Fit-indices provide evidence for the adequacy of the proposed model of indirect effects;  $\chi^2 = 7.55, df = 7, p = .37, NFI = .99, RMSEA = .03$ . In line with the results presented above there was a significant direct effect of high relative group prototypicality on ingroup identification;  $\beta = .25, p < .01$ . Increased ingroup identification led to a less positive evaluation of the outgroup (compared to the ingroup),  $\beta = -.26, p = .02$ , more collective initiative,  $\beta = .28, p < .01$ , more solidarity with the ingroup,  $\beta = .20, p = .02$  and more networking,  $\beta = .24, p = .03$ . Indirect effects of high group prototypicality on intergroup differentiation and behavioural strategies were estimated applying bootstrap-technique. All indirect effects of high group prototypicality on evaluation of the outgroup (compared to the ingroup),  $\beta = -.09, p = .01$ , collective engagement,  $\beta = .06, p < .01$ , solidarity,  $\beta = .05, p = .02$  and networking,  $\beta = .05, p = .02$ , reached significance stressing the importance of group prototypicality in this context. In sum, the path-analytic model is in line with predictions showing that high ingroup prototypicality leads to an increase in collective strategies and more intergroup differentiation through increased ingroup identification. However, to underline the interpretation of the hypothesized model in terms of causal relations, an alternative model was tested that reversed all relations. Only the relation from the prototypicality contrast to ingroup identification was kept. This relation can be interpreted as causal because relative group prototypicality had been manipulated. The alternative model also fitted the model, however not equally well;  $\chi^2 = 9.28, df = 7, p = .23, NFI = .99, RMSEA = .06$ . Hence, the hypothesized model best describes the data, but does not rule out the possibility of reversed causal relations.

Results had indicated that identification with the ingroup and the superordinate category were highly correlated. Therefore, the effect of superordinate category identification was controlled for when regressing one of the criterion variables on ingroup identification. When controlling for superordinate category identification, ingroup identification significantly predicted intergroup differentiation;  $\beta = -.52$ ,  $t(100) = -4.02$ ,  $p < .001$ , and so did superordinate category identification;  $\beta = .37$ ,  $t(100) = 2.86$ ,  $p < .01$ . Furthermore, ingroup identification predicted behaviour in favour of the ingroup which comprised collective engagement,  $\beta = .28$ ,  $t(100) = 2.13$ ,  $p = .04$ , solidarity,  $\beta = .35$ ,  $t(100) = 2.57$ ,  $p = .01$ , and networking,  $\beta = .42$ ,  $t(100) = 3.17$ ,  $p < .01$ , when controlling for superordinate category identification. Identification with the superordinate category was unrelated with collective engagement,  $\beta = -.01$ ,  $t(100) < -1$ ,  $p = ns$ , and solidarity, ;  $\beta = -.20$ ,  $t(100) = -1.53$ ,  $p = .13$ , but was correlated with networking,  $\beta = -.27$ ,  $t(100) = -2.05$ ,  $p = .05$ . In sum, when controlling for superordinate category identification, ingroup identification remained a strong or even a single predictor of intergroup processes.

Figure 5.1 Integrating path-analytic model: Indirect effect of relative group prototypicality on intergroup differentiation and collective strategies. Standardized regression weights; \* $p < .05$ .

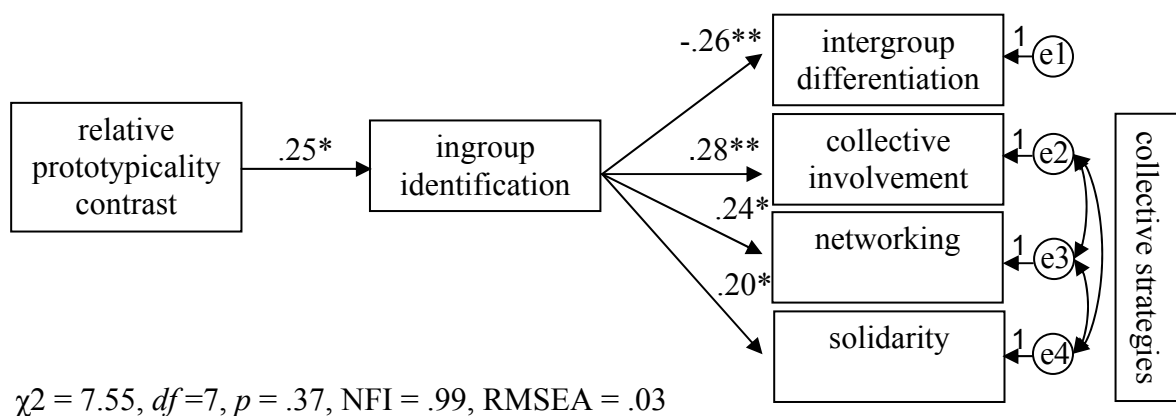


Table 5.8 Intercorrelations, means and standard deviations, female participants, n=103

	relative prototypicality	identification with the ingroup	attitude towards the outgroup	collective initiative	networking	solidarity
identification with the ingroup	.25*					
attitude towards the outgroup	-.08	-.26**				
collective initiative	-.09	.28**	-.12			
networking	-.06	.24*	-.09	.46**		
solidarity	.06	.20*	-.23*	.03	-.002	
<i>M</i>	-.04	4.63	.00	2.92	3.61	-1.47
<i>SD</i>	1.41	.50	2.01	1.15	1.26	1.31

Note. \*\*\* $p < .001$ , \*\* $p < .01$ , \* $p < .05$

### 5.3.3 Discussion

Study 3 aimed at replicating the effect of relative group prototypicality on ingroup identification. I assumed that relative group prototypicality exerts its impact on ingroup identification of female students. This predicted effect - already demonstrated in Study 2 - was replicated and confirmed. Relatively high ingroup prototypicality led to increased ingroup identification compared to relatively high outgroup prototypicality and relatively equal prototypicality. As assumed superordinate category identification was rather not affected by the prototypicality manipulation. Whereas Study 2 revealed a tendency of increased superordinate category identification under the condition 'relatively high ingroup prototypicality', Study 3 suggests that relative group prototypicality might not actually affect identification with the superordinate category. However, the statistical test does not rule out the alternative hypothesis. With a *p*-value of .31 the error-probability of accepting the null hypothesis despite of an effect of prototypicality on superordinate category identification should not be neglected.

Finally, Study 3 intended to test the hypothesis that ingroup fit serves as an important indirect antecedent of intergroup differentiation and behaviour in favour of the ingroup. Results demonstrated that relatively high ingroup prototypicality led to increased ingroup identification which in turn exerted important effects on intergroup processes. In line with previous studies in the tradition of SIT (Tajfel, 1978; Tajfel & Turner, 1979) ingroup identification led to a less positive evaluation of the outgroup in comparison to the ingroup and thus to more intergroup differentiation (cf., Brown et al., 1986; Kelly, 1988; van Leeuwen et al., 2003). As predicted there was an indirect effect of relatively high ingroup prototypicality on intergroup differentiation. Likewise, results revealed evidence that collective behaviour in favour of the ingroup, which is collective engagement, solidarity behaviour and networking are predicted by ingroup identification. This finding is in line with previous research in the tradition of SIT (Tajfel, 1978; Tajfel & Turner, 1979) and has been demonstrated in different social contexts (Ashforth, & Mael, 1989; Kessler, & Mummendey, 2002; Mummendey, et al., 1999a). Furthermore, perceiving the relative position of one's subgroup as fitting to a superordinate standard indirectly led to more involvement in collective strategies in favour of the ingroup. There is evidence that the perception of fit is an important indirect antecedent of strategies such as collective engagement, solidarity and networking. Hence, if women perceive themselves as fitting into the organization they are particularly willing to participate in initiatives to change their position within the organization.



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***Methodological limitations***

Throughout Study 1 and Study 2 it was ensured that participants perceive the superordinate category to be positive. If the valence of the superordinate category is perceived to be positive being high in relative group prototypicality also gains a positive meaning within an intergroup context (Mummendey & Wenzel, 1999; Wenzel et al., 2003). In Study 3 the valence of the superordinate category was aimed to be manipulated, as it appears likely that the impact of relative group prototypicality on identification would be moderated by the evaluation of the inclusive category. However, the manipulation of the superordinate category valence failed. Participants perceived the superordinate category to be positive. Furthermore, there were no effects of valence on any of the dependent measures. Hence, results are restricted to a superordinate category that is evaluated positively. According to SCT superordinate inclusive categories tend to be positive (Turner et al., 1987), so that the results of Study 2 and Study 3 might be applicable to most contexts of hierarchical categories. Nevertheless, the impact of superordinate category valence remains to be examined further in future research.

Furthermore, the interpretation of Study 3 might be confined by some measurement weaknesses. Within group research intergroup differentiation has often been measured including aspects such as contact, likeability, tolerance and self-observed behaviour (cf., Waldzus et al., 2005; Weber et al., 2002; Wenzel et al., 2003). However, these aspects are of questionable utility for measuring intergroup differentiation within the gender context as members of different sexes are often attracted to each other and very willing to get in contact with members of the opposite sex. Therefore, intergroup differentiation had been conceptualized by a single item derived from Hornsey and Hogg (2000). This aspect of expected difficulty to work together with a member of the opposite sex appeared to be more adequate as it specifically refers to a specific and common situation at work. However, a single-item measure is less reliable and more susceptible to measurement errors. Therefore, this measurement is improved in Study 4.

Moreover, the entire questionnaire of Study 3 was already quite long. This is why two aspects of collective behaviour in favour of the ingroup - networking and solidarity - were each measured only with two items. Results demonstrated that the two networking items as well as the two solidarity items each intercorrelated significantly, but nevertheless, quite lowly. Therefore, the measurement of the different aspects of collective behaviour will be taken into consideration and improved in Study 4.

***Summary***

Summing up, Study 3 replicates the empirical finding of Study 2. Relatively high ingroup prototypicality of female students leads to increased ingroup identification compared to relatively high outgroup prototypicality of male students and equal prototypicality within a gender-typed organizational setting. Study 3 also extends the previous findings as it demonstrates indirect effects of relative group prototypicality on intergroup processes between gender groups such as intergroup differentiation and collective behaviour in favour of the ingroup.

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## 5.4 Study 4

The aim of Study 4 was to bring the approach followed in Study 1 together with the path-analytic model developed in Study 3 and to replicate previous results within the field: hence, within German organizations. In particular this study aimed at replicating the finding from Study 1 that mutual typicality (i.e., male employees are more task-oriented whereas female employees are more team-oriented) might not imply mutual prototypicality at work. Instead it was assumed and already demonstrated in Study 1 that male employees are perceived as being high in relative group prototypicality whereas female employees are perceived as being low in relative group prototypicality. Hence, the study aimed at replicating the often observed finding that female employees are lacking fit at work. Moreover, it was intended to show in organizational settings that the perception of relative group prototypicality is positively associated with ingroup identification but not or less with superordinate category identification. Ingroup identification should in turn predict more intergroup differentiation and more collective strategies in favour of the ingroup. Furthermore, the scope of this path-analytic model - proved in Study 3 - was extended by including organizational behaviour defined as behaviour in favour of the superordinate category. Thus, in-role and extra-role behaviour (i.e., organizational citizenship behaviour) are assumed to be indirectly associated with the perception of relative group prototypicality as well.

### 5.4.1 Method

#### *Participants*

This study - conceptualized as a correlational field study - was realized via the internet. Participants were recruited in internet forums for employees and managers as well as female network forums. Furthermore, private email-lists were used to approach female acquaintances. Women who already had participated were given the possibility to recommend the internet study to friends and colleagues. Through this snow ball procedure further participants could be recruited. Data was collected over a four week period. Overall 240 female employees and managers participated in this study. Two participants were excluded from the data set. Their missing values did not allow calculating estimates applying bootstrap technique within a path-analytic model (Byrne, 2001, chap. 9). In order to keep the number of participants constant

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throughout the data analysis all statistical procedures were run with the remaining 238 participants. Approximately half of the participants ( $n = 123$ ) were working in big enterprises which are, following a definition by the German IFM (Institute for research on medium-sized business, 2005), enterprises with more than 500 employees. 87 participants indicated to work in middle-sized enterprises employing between 10 and 499 workers. 28 participants were working in small enterprises with less than 10 employees. Data on the branch in which participants' organisations were settled was collected in accordance with a taxonomy used by the Federal Statistical Office Germany (DESTATIS, 2003). Participants were working in all kinds of different branches from consulting to industry, from electro-techniques to medical services (see table 5.9 for a full list of branches and the distribution of participants between them). Most women were holding an assistant or staff position within their organization ( $n = 107$ ). 8 women were working as apprentice ( $n = 5$ ) or as intern ( $n = 3$ ) within their organization. However, 57 participants reported to be the manager of a team, 40 to be the head of the department and 6 were executive director or member of the board of directors (2 missings in the data file). Female employees varied in their job experience from less than a year to more than 20 years (see table 5.10 for the distribution of job experience within the sample). Finally, participants indicated their age ranging from 20 to 59 (see table 5.11 for distribution between the age categories).

Table 5.9 Distribution of participants within different branches

<b>Branch</b>	<b>Frequency</b>	<b>Percentage</b>
Consulting, market research, financial consulting	42	17.6%
Credit, bank, insurance industry	15	6.3%
Industry and trade	47	19.7%
Building industry, housing, real estate business	5	2.1%
Electro-techniques, computer, multimedia	37	15.5
Education, research	16	6.7
Media	12	5.0%
Civil service, administration, politics	11	4.6%
Medical services, social services	19	8.0%
Other	31	13%
Missings	3	1.3%
<b>Total</b>	<b>238</b>	<b>100%</b>

Table 5.10 Distribution of participants' job experience

<b>Job experience</b>	<b>Frequency</b>	<b>Percentage</b>
< 1 year	13	5.5%
1 - 2 years	14	5.9 %
3 - 5 years	84	35.3%
6 - 10 years	49	20.6%
10 - 20 years	54	22.7%
> 20 years	24	10.1%
<b>Total</b>	<b>238</b>	<b>100%</b>

Table 5.11 Age distribution of participants

<b>Age categories</b>	<b>Frequency</b>	<b>Percentage</b>
< 20 years	/	/
20-29 years	61	25.6%
30-39 years	134	56.3%
40-49 years	36	15.1%
50-59 years	7	2.9%
≥ 60 years	/	/
<b>Total</b>	238	100%

### ***Procedure***

Participants were given a standardized instruction and asked to complete an online-questionnaire on the situation of female employees in German organizations and enterprises. In order to make all relevant categories salient participants were asked to differentiate carefully between female employees (ingroup), male employees (outgroup) and employees of their organization in general (superordinate category). After the completion of the questionnaire, participants could participate in a lottery and win one of 45 vouchers of 10 Euro to 25 Euro for Amazon, Hapag Lloyd Express and Douglas.

### ***Questionnaire***

#### ***Gender-proportion within the organizational settings***

In order to check whether minorities are less likely to project onto the inclusive category, participants were asked to indicate to what extent female employees are a minority in their organisational unit. Participants had to indicate on a 7-point categorical scale whether the proportion of female employees was 0-5%, 6-10%, 11-20%, up to > 50%. Participants were split into two categories with regard to gender proportion in the organization to differentiate between organizations in which women constitute 50% or less of the staff (N = 153) and organizations in which women constitute more than 50% of the staff (N = 85). Even though the distribution of participants was unequal, this categorical variable was included as moderator to explore typicality and relative group prototypicality perceptions further.

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### ***Evaluation of the superordinate category***

The evaluation of the superordinate category was assessed by a single item (“How do you evaluate the employees of the organization in general?”). The scale ranged from 1=“very negative” to 7=“very positive”.

### ***Relative Prototypicality***

As in the previous studies participants were requested to rate a list of attributes balanced in stereotypicality and valence. Attributes were based on a typicality measure by Sczesny (2003b) who differentiates between task- and team-related attributes that are relevant within organizational settings. Typical male employee attributes were defined as positive and negative task-related characteristics such as oriented towards career (+) or authoritarian (-), (cf., Sczesny, 2003b). Two attributes were added that reflected additional positive and negative aspects of task-orientation: analytic (+) and dominant (-). Likewise, typical female employee attributes were conceptualized as positive and negative social and team-related characteristics such as cooperative (+) or inflexible (-) (cf., Sczesny, 2003b). Again two attributes were added that comprise additional positive and negative aspects of team-orientation: open-minded (+) and oriented towards leisure time (-). Participants were requested to rate the applicability of these attributes for the ingroup, the outgroup and the inclusive superordinate category (scale range from 1=“does not apply at all” to 7=“fully applies”). Euclidian distance measures for the ingroup towards the superordinate category and the outgroup towards the superordinate category were calculated separately for task- and team-orientation. These distance measures were used as indicator of profile dissimilarity. A subgroup’s prototypicality is defined through the reverse of this profile dissimilarity. To receive a measure of relative ingroup prototypicality profile dissimilarity of the ingroup was subtracted from profile dissimilarity of the outgroup. Therefore, a positive difference measure indicates relatively high ingroup prototypicality; a negative difference measure indicates relatively high outgroup prototypicality. A value that does not significantly differ from zero indicates relatively equal prototypicality.

### ***Social Identification***

Participants' identification with the ingroup (i.e., female employees) was assessed with a shorter version of the scale used in Study 2 and 3 to shorten the length of the entire questionnaire. Participants were asked to fill in a 9-item scale ranging from 1= "do not agree" to 7="fully agree". Five items were based on Brown's et al. (1986) identification scale (e.g., "I regard myself as belonging to the female employees", "I feel strong ties with female employees", "I identify with female employees"). Four additional items were added to reflect further evaluative and behavioural aspects of identification (e.g., "I am pleased to be a female employee"). The reliability of the resulting scale was satisfyingly high,  $\alpha = .94$ . To measure participants' identification with the superordinate category, this 9-item scale was adapted to the inclusive level (e.g., "I identify with employees in general"),  $\alpha = .93$ .

### ***Intergroup differentiation***

Intergroup differentiation was measured with two items according to an adapted version of a bias scale developed by Hornsey and Hogg (2000). Participants had to rate their preferences for the ingroup or the outgroup on a bipolar 6-point scale (i.e., "It would be difficult to work exclusively with male/female employees", "I would feel good about working with male/female employees" (recoded)). The scale ranged from -3 = "by all means male employees" to +3 = "by all means female employees". The two items correlated significantly,  $N = 238$ ,  $r = .33$ ,  $p < .001$ , and were summed up to one scale.

### ***Behavioural strategies***

Participants were asked to what extent they intend to engage in favour of their own group. Following Veenstra and Haslam (2000) four items captured the general willingness to collectively stand for the ingroup (e.g., "I would advocate publicly the improvement of female employees' situation within the organization."). Additionally, three items measured the favourability for ingroup network initiatives (e.g., "We female employees should engage into networks in order to improve our opportunities within the organization"). In Study 3 solidarity with the ingroup as opposed to solidarity with the superordinate category had been also included as additional aspect of collective behaviour in favour of the ingroup. However, in Study 3 solidarity was measured with two scenarios taking a lot of space and increasing significantly the time participants needed to complete the questionnaire. As internet-studies



are more easily quit by participants in case they take too much time, this measurement of solidarity was not included in Study 4 (cf., Ross, Daneback, Månsson, Tikkanen, & Cooper, 2003). Items of collective engagement and networking were summed up to one scale on collective behaviour in favour for the ingroup,  $\alpha = .87$ .

Furthermore, organizational behaviour (i.e., in-role behaviour, organizational citizenship behaviour) was measured following an adapted German scale by Staufenbiel and Hartz (2000). Four items assessed in-role behaviour of job prescriptions with a German translation of Williams' and Anderson's (1991) in-role behaviour scale (e.g., "I appropriately fulfil job specifications", cf., Staufenbiel & Hartz, 2000). The resulting scale was highly reliable,  $\alpha = .91$ . Two factors were meant to assess organizational citizenship behaviour which is behaviour that goes beyond job prescriptions (i.e., altruism and conscientiousness). Altruism was composed of four items assessing to what extend employees voluntarily help co-workers (e.g., "I voluntarily help new colleagues to familiarize with their job"). Means were summed up to one scale that reliably covers altruism,  $\alpha = .74$ . Conscientiousness assesses dutiful behaviour with three items (e.g., "I precociously let people know if I can't come to work"). The resulting scale was only low in reliability,  $\alpha = .49$ . However, to capture different facets of organizational citizenship behaviour this scale was included in the subsequent analysis.

## 5.4.2 Results

### *Evaluation of the Superordinate Category*

To ensure that the prerequisite of a positively evaluated superordinate category was met, it was tested whether the mean evaluation differs positively and significantly from the midpoint of the scale. Participants indeed perceived the superordinate category to be positive,  $t(237) = 10.85, p < .001 (M = 4.87, SD = 1.24)$ .

### *Mutual typicality*

In a next step the assumption that female and male employees are perceived to be mutually typical with regard to task- and team-orientation was tested. An ANOVA with repeated measures on group (mean typicality ratings for female, male and employees in general) and content (task- vs. team-orientation) as within subjects factors was conducted. No main effect

emerged for content  $F(1, 237) < 1, p = ns, \eta^2_p < .001$ . There was a main effect of group,  $F(2, 236) = 101.21, p < .001, \eta^2_p = .46$ . Typicality ratings of the ingroup (female employees;  $M = 4.07, SD = .52$ ) were significantly lower compared to typicality ratings of the outgroup (male employees;  $M = 4.46, SD = .48, p < .001$ ), but equally high as superordinate category ratings (employees in general;  $M = 4.11, SD = .42, p = .18$ ). Thus, typicality ratings of the outgroup were also significantly higher than those of the superordinate category ( $p = .001$ ). This main effect was significantly qualified by the expected two-way interaction of group and content,  $F(2, 236) = 152.54, p < .001, \eta^2_p = .56$ . As predicted male employees were perceived as being more task-oriented ( $M = 4.84, SD = .72$ ) compared to female employees ( $M = 3.77, SD = .81, p < .001$ ) and to employees in general ( $M = 4.03, SD = .59, p < .001$ ). Female employees were not only less typical on the task-dimension compared to male employees but also compared to employees in general ( $p < .001$ ); simple effect:  $F(2, 236) = 188.35, p < .001, \eta^2_p = .62$ . In line with predictions female employees were seen as being more team-oriented ( $M = 4.37, SD = .54$ ) compared to male employees ( $M = 4.08, SD = .59, p < .001$ ) and employees in general ( $M = 4.20, SD = .49, p < .001$ ). Male employees were not only perceived as less typical on the team-dimension compared to their female colleagues, but also to employees in general ( $p = .001$ ); simple effect:  $F(2, 236) = 23.28, p < .001, \eta^2_p = .17$ .

### ***Group typicality in the light of gender proportion at work***

To explore whether group typicality perceptions are affected by different gender proportions at work this variable was included in the analysis of variance. Hence, an ANOVA with group (mean typicality ratings for female, male and employees in general) and content (task- vs. team-orientation) as within subjects factors and proportion (equal or below 50%, over 50%) as between subjects factor was conducted. There was no main effect of content  $F(1, 236) < 1, p = ns, \eta^2_p < .001$ . However, there was a main effect of group,  $F(2, 235) = 94.72, p < .001, \eta^2_p = .45$ , which was qualified by the expected two-way interaction of group and content,  $F(2, 235) = 146.09, p < .001, \eta^2_p = .55$ . As reported in the previous section male employees were perceived as being more task-oriented compared to female employees and employees in general. Female employees were not only less typical on the task-dimension compared to male employees but also compared to employees in general; simple effect:  $F(2, 235) = 179.25, p < .001, \eta^2_p = .60$  (compare table 5.12 for means and standard deviations). In line with predictions female employees were seen as being more team-oriented compared to male employees and employees in general. Male employees were not only perceived as less typical

on the team-dimension compared to their female colleagues but also to employees in general; simple effect:  $F(2, 235) = 22.25, p < .001, \eta^2_p = .16$  (compare table 5.12 for means and standard deviations). So far these results were in line with those presented above. Furthermore, proportion did not further influence the perception of group typicality. There was no main effect of proportion,  $F(1, 236) < 1, p = ns, \eta^2_p < .01$ . Moreover, no further interaction effects emerged, all  $F < 1, p = ns, \eta^2_p < .01$ .

Table 5.12 Means and standard deviations of group typicality ratings dissolved for content dimension and gender proportion at work

	≤ 50% female employees within the organization			> 50% female employees within the organization			<b>Total</b>		
	Content-dimension			Content-dimension			Content-dimension		
	Task	Team	<b>Total</b>	Task	Team	<b>Total</b>	Task	Team	<b>total</b>
female typicality	3.78 <sup>a,x</sup> (.74)	4.34 <sup>a,y</sup> (.53)	<b>4.06<sup>a,l</sup></b> <b>(.66)</b>	3.76 <sup>a,x</sup> (.93)	4.43 <sup>a,y</sup> (.55)	<b>4.09<sup>a,l</sup></b> <b>(.87)</b>	3.77 <sup>a,o</sup> (.81)	4.37 <sup>a,p</sup> (.54)	4.08 <sup>a</sup> (.56)
male typicality	4.82 <sup>b,x</sup> (.68)	4.07 <sup>b,y</sup> (.54)	<b>4.45<sup>b,l</sup></b> <b>(.60)</b>	4.88 <sup>b,x</sup> (.77)	4.11 <sup>b,y</sup> (.66)	<b>4.50<sup>b,l</sup></b> <b>(.81)</b>	4.841 <sup>b,o</sup> (.72)	4.08 <sup>b,p</sup> (.59)	4.47 <sup>b</sup> (.51)
Superordinate category typicality	4.04 <sup>c,x</sup> (.55)	4.16 <sup>c,y</sup> (.48)	<b>4.10<sup>a,l</sup></b> <b>(.52)</b>	3.99 <sup>c,x</sup> (.64)	4.26 <sup>c,y</sup> (.49)	<b>4.13<sup>a,l</sup></b> <b>(.69)</b>	4.03 <sup>c,o</sup> (.59)	4.20 <sup>c,p</sup> (.49)	4.12 <sup>a</sup> (.43)
<b>total</b>	4.22 <sup>x</sup> (.69)	4.19 <sup>y</sup> (.52)	<b>4.20<sup>l</sup></b> <b>(.49)</b>	4.21 <sup>x+</sup> (.91)	4.27 <sup>y+</sup> (.71)	<b>4.24<sup>l</sup></b> <b>(.66)</b>	4.21 <sup>x</sup> (.57)	4.23 <sup>x</sup> (.48)	

*Note.* Means and standard deviations are given in each cell. Standard deviations are specified in brackets. Unequal superscripts<sup>a,b,c</sup> within the same column indicate significant differences between group typicality ratings. Unequal superscripts<sup>x,y,z</sup> within the same row indicate significant differences between task- and team-orientation (content-dimension). Unequal superscripts<sup>l,m</sup> indicate differences in total ratings dissolved for gender of participants. Unequal superscripts<sup>o,p</sup> indicate differences in total ratings between task- and team-orientation (content-dimension); all  $p < .05$ .

### ***Relative group prototypicality***

To investigate the perception of relative group prototypicality an ANOVA with target group (Euclidian distances of female & male employees) and content (task- vs. team-orientation) with repeated measures on both factors was conducted. Contrarily to predictions there was no main effect of target group,  $F(1, 237) < 1, p = ns, \eta^2_p < .001$ , indicating that female employees did not perceive their ingroup ( $M = 3.15, SD = 1.09$ ) as less relative prototypical (i.e., lacking fit) compared to male employees ( $M = 3.17, SD = 1.19$ ). Furthermore, there was a marginal significant effect of content,  $F(1, 237) = 3.63, p = .06, \eta^2_p = .02$  ( $M_{task} = 3.22, SD = 1.11, M_{team} = 3.10, SD = 1.06$ ). This effect was qualified by a significant interaction of target group and content,  $F(1, 237) = 13.25, p < .001, \eta^2_p = .05$ . Unexpectedly, female employees perceived their ingroup on the task-dimension to be more relative prototypical ( $M = 3.10, SD = 1.31$ ) than their outgroup, male employees ( $M = 3.35, SD = 1.40$ ); simple effect:  $F(1, 237) = 5.93, p = .02, \eta^2_p = .02$ . Moreover, they perceived their ingroup of female employees to be less relative prototypical ( $M = 3.21, SD = 1.29$ ) compared to male employees ( $M = 2.98, SD = 1.36$ ) on the team-dimension; simple effect:  $F(1, 237) = 4.75, p = .03, \eta^2_p = .02$ .

### ***Relative group prototypicality in the light of gender proportion at work***

To explore the perception of relative group prototypicality further, gender proportion within the organizational context was included in the analysis of variance as additional factor. Thus, an ANOVA including target group (Euclidian distances of female & male employees) and content (task- vs. team-orientation) as within subjects factors as well as proportion (equal or below 50%, over 50%) as between subjects factor was calculated. Again there was no main effect of target group which contradicts the prediction that female employees generally perceive their ingroup to be less relative prototypical for the organization than the outgroup (male employees),  $F(1, 236) < 1, p = ns, \eta^2_p < .01$  (compare table 5.13 for means and standard deviations). There was a marginal significant effect of content,  $F(1, 236) = 2.79, p = .10, \eta^2_p = .01$  (compare table 5.13 for means and standard deviations). However, this main effect was qualified by a significant interaction of target group and content,  $F(1, 236) = 13.87, p < .001, \eta^2_p = .06$ . Female employees perceived their ingroup to be more relative prototypical than their outgroup of male employees on the task-dimension; simple effect:  $F(1, 236) = 10.14, p = .002, \eta^2_p = .04$  (compare table 5.13 for means and standard deviations). However, they perceived their ingroup of female employees to be as relative prototypical as their outgroup of male employees on the team-dimension; simple effect:  $F(1, 236) = 2.56, p = .11, \eta^2_p = .01$

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(compare table 5.13 for means and standard deviations). These results are generally in line with the empirical evidence reported one section above. However, including gender proportion at work within the analysis also shed some light on the perception of relative group prototypicality. There was a main effect of gender proportion at work,  $F(1, 236) = 7.05$ ,  $p = .008$ ,  $\eta^2_p = .03$ , which was qualified by a significant interaction of target group and gender proportion at work,  $F(1, 236) = 8.91$ ,  $p = .003$ ,  $\eta^2_p = .04$ . More precisely, there was a tendency for female employees to perceive their ingroup ( $M = 3.12$ ,  $SD = 1.37$ ) as less relative prototypical compared to the outgroup of male employees ( $M = 2.96$ ,  $SD = 1.43$ ) within organizations with a female proportion of equal or less than 50%; simple effect  $F(1, 236) = 2.76$ ,  $p = .10$ ,  $\eta^2_p = .01$ . However, female employees perceived the ingroup ( $M = 3.22$ ,  $SD = 1.85$ ) to be more relative prototypical compared to the outgroup of male employees ( $M = 3.54$ ,  $SD = 1.93$ ) within organizations with a female proportion of more than 50%; simple effect  $F(1, 236) = 6.16$ ,  $p = .01$ ,  $\eta^2_p = .03$ . No further two-way or three-way interaction effects emerged; all  $F < 1$ ,  $p = ns$ ,  $\eta^2_p < .01$ .

Table 5.13 Means and standard deviations of relative prototypicality ratings dissolved for content dimension and gender proportion at work

	≤ 50% female employees within the organization			> 50% female employees within the organization			<b>Total</b>		
	Content-dimension			Content-dimension			Content-dimension		
	Task	Team	<b>Total</b>	Task	Team	<b>Total</b>	Task	Team	<b>total</b>
female prototypicality	3.09 <sup>a,x</sup> (1.24)	3.14 <sup>a,x</sup> (1.33)	<b>3.12</b> <sup>a,l</sup> <b>(1.24)</b>	3.10 <sup>a,x</sup> (1.43)	3.33 <sup>a,x</sup> (1.24)	<b>3.22</b> <sup>a,l</sup> <b>(1.43)</b>	3.10 <sup>a,o</sup> (1.31)	3.24 <sup>a,o</sup> (1.30)	3.17 <sup>a</sup> (1.16)
male prototypicality	3.13 <sup>a,x</sup> (1.21)	2.78 <sup>b,y</sup> (1.24)	<b>2.96</b> <sup>a,l</sup> <b>(.60)</b>	3.73 <sup>b,z</sup> (1.65)	3.35 <sup>a,w</sup> (1.47)	<b>3.54</b> <sup>b,m</sup> <b>(.81)</b>	3.34 <sup>b,o</sup> (1.41)	3.06 <sup>a,p</sup> (1.35)	3.24 <sup>a</sup> (1.20)
<b>total</b>	3.11 <sup>x+</sup> (1.37)	2.96 <sup>y+</sup> (1.31)	<b>3.04</b> <sup>l</sup> <b>(1.19)</b>	3.42 <sup>y</sup> (1.85)	3.34 <sup>y</sup> (1.76)	<b>3.38</b> <sup>m</sup> <b>(1.59)</b>	3.26 <sup>x</sup> (1.16)	3.15 <sup>x</sup> (1.10)	

*Note.* Means and standard deviations are given in each cell. Standard deviations are specified in brackets. Unequal superscripts<sup>a,b,c</sup> within the same column indicate significant differences between group typicality ratings. Unequal superscripts<sup>w,x,y,z</sup> within the same row indicate significant differences between task- and team-orientation (content-dimension). Unequal superscripts<sup>l,m</sup> indicate differences in total ratings dissolved for gender of participants. Unequal superscripts<sup>o,p</sup> indicate differences in total ratings between task- and team-orientation (content-dimension); all  $p < .05$ .

### ***Proportion of female employees as correlate of relative prototypicality***

In a next step it was tested how the perception of relative group prototypicality is associated with the actual proportion of male and female co-workers within their subdivision of the organization. Hence, the continuous variable of gender proportion was used. There was a positive correlation between proportion and the perception of relative group prototypicality,  $r = .13$ ,  $p = .04$ ,  $n = 238$ . The greater the proportion of female employees the more they perceived their ingroup of female employees as relative prototypical. Overall, female employees perceived both subgroups, female and male employees, to be equally relative prototypical. This was indicated through the mean difference score of Euclidian outgroup

distances subtracted by Euclidian ingroup distances ( $M = .009$ ,  $SD = 1.75$ ). The mean perception of relative group prototypicality did not differ significantly from zero  $t(238) < 1$ ,  $p = ns$ .

### ***Relative group prototypicality as antecedent of identification***

It was predicted that relative group prototypicality is positively correlated with ingroup identification (female employees) but not or less with superordinate category identification (organization). Results confirmed these assumptions. The more female employees perceived their ingroup in relation to the outgroup as relative prototypical the more they identified with their ingroup,  $r = .13$ ,  $p = .04$ ,  $N = 238$ . There was no significant association between relative group prototypicality and superordinate category identification,  $r = .03$ ,  $p = .64$ ,  $n = 238$ . Both the mean identification with the ingroup ( $M = 4.55$ ,  $SD = 1.30$ ),  $t(237) = 6.54$ ,  $p < .001$  and the mean identification with the superordinate category ( $M = 4.72$ ,  $SD = 1.29$ ),  $t(237) = 8.58$ ,  $p < .001$  differed significantly from the midpoint of the scale. Thus, participants identify with both levels of self-categorization. Moreover, participants identify slightly though significantly stronger with the superordinate category than with the ingroup,  $t(237) = -2.49$ ,  $p = .01$ . Both measures were significantly and strongly correlated  $r = .68$ ,  $p < .001$ ,  $n = 238$ .

### ***Indirect effects of relative group prototypicality - a path-analytic model***

Finally this study aimed at replicating and extending the proposed integrating model (compare figure 5.2). It was predicted that relative group prototypicality leads to an increase in ingroup identification which in turn leads to more intergroup differentiation, more collective behaviour in favour of the ingroup and more behaviour in favour of the organization through heightened ingroup identification. These assumptions were tested using structural equation modelling (AMOS 4, Arbuckle & Wothke, 1999). The model contained proportion of female and male employees as exogenous variable and relative group prototypicality, ingroup identification, intergroup differentiation, collective behaviour, in-role behaviour, altruism and conscientiousness as endogenous variables (compare table 5.14 for correlations between the variables). Error residuals of in-role behaviour, altruism and conscientiousness were allowed to correlate as all three variables capture aspects of organizational behaviour. The proposed model adequately fits the empirical data,  $\chi^2 = 24.67$ ,  $df = 18$ ,  $p = .13$ , NFI = .99, RMSEA = .04. In line with the correlational analysis the proportion of female and male

employees is a significant predictor of the perception of relative group prototypicality,  $\beta = .13$ ,  $p = .03$ . As predicted relative group prototypicality positively influences ingroup identification,  $\beta = .13$ ,  $p = .04$ , which in turn leads to less positive expectancies towards the outgroup (compared to the ingroup),  $\beta = -.21$ ,  $p = .02$ , more collective behaviour,  $\beta = .30$ ,  $p = .01$  and more organizational behaviour, as in-role behaviour,  $\beta = .18$ ,  $p = .02$ , altruism,  $\beta = .33$ ,  $p = .01$  and conscientiousness,  $\beta = .13$ ,  $p < .06$ . Furthermore, indirect effects were estimated applying bootstrap-technique. Indirect effects of proportion of female/male employees on attitudes and behavioural strategies did not reach significance, all  $p = ns$ . However, relative group prototypicality exerted indirect effects on collective strategies,  $\beta = .03$ ,  $p = .04$ , organizational in-role behaviour,  $\beta = .01$ ,  $p = .04$  and altruism,  $\beta = .02$ ,  $p = .04$ . Indirect paths on intergroup differentiation,  $\beta = -.03$ ,  $p = .07$  and conscientiousness,  $\beta = .02$ ,  $p < .10$  only reached marginal significance. In sum the path-analytic model is in line with predictions and replicates as well as extends the integrating model empirically established in Study 3. The more female employees perceived their ingroup to be relative prototypical the more they identified with their ingroup, which led, in turn, to more intergroup differentiation, to more engagement into collective strategies, more organizational in-role behaviour and more altruistic behaviour.

This interpretation of relations gains further strength as an alternative model with exact reversal causal relations did not fit the data equally well,  $\chi^2 = 30.77$ ,  $df = 18$ ,  $p = .03$ ,  $NFI = .99$ ,  $RMSEA = .06$ . Thus, the originally hypothesized model fits most adequately the data which, nevertheless does not rule out the possibility of reversed causal relations. To further test the suggested model, a second alternative model was tested that allowed a direct path from the exogenous variable proportion of female and male employees to ingroup identification instead of its indirect path via perceived relative group prototypicality. All further relations were tested as in the original path-analytic model (see figure 5.2). This second alternative model also did not fit equally well the data,  $\chi^2 = 28.16$ ,  $df = 18$ ,  $p = .06$ ,  $NFI = .99$ ,  $RMSEA = .05$ . Moreover the direct path from gender proportion to ingroup identification did not reach significance  $\beta = .04$ ,  $p = .49$ . Again this allows the conclusion that the originally hypothesized model most adequately fits the data.

As identification with the ingroup and the superordinate category were highly correlated one might oppose that the prediction of group processes through ingroup identification solely rests on an illusory correlation. In order to rule out this alternative explanation the effect of superordinate category identification was controlled for in several single linear regressions. When controlling for superordinate category identification ingroup



identification significantly predicted intergroup differentiation;  $\beta = -.36$ ,  $t(235) = -4.23$ ,  $p < .001$ , and so did superordinate category identification;  $\beta = .23$ ,  $t(235) = 2.66$ ,  $p < .01$ . Furthermore, ingroup identification predicted female employees' willingness to engage in collective behaviour in favour of the ingroup,  $\beta = .35$ ,  $t(235) = 4.07$ ,  $p < .001$ , whereas superordinate category identification and collective behaviour were unrelated;  $\beta = -.06$ ,  $t(235) < -1$ ,  $p = ns$ . A similar pattern emerged for behaviour in favour of the organization, which was defined as in-role behaviour and organizational citizenship behaviour including altruism and conscientiousness. Indeed ingroup identification significantly predicted organizational in-role behaviour;  $\beta = .18$ ,  $t(235) = 2.06$ ,  $p = .04$ , whereas identification with the organization did not;  $\beta = -.008$ ,  $t(235) < -1$ ,  $p = ns$ . Likewise, ingroup identification significantly predicted altruistic behaviour which constitutes a part of organizational citizenship behaviour;  $\beta = .35$ ,  $t(235) = 4.15$ ,  $p < .001$ . Again, identification with the organization and altruistic behaviour were unrelated;  $\beta = -.03$ ,  $t(235) < -1$ ,  $p = ns$ . Last, ingroup identification predicted conscientiousness;  $\beta = .26$ ,  $t(235) = 2.97$ ,  $p < .01$  and so did identification with the organization;  $\beta = -.19$ ,  $t(235) = -2.15$ ,  $p = .03$ . Summing up, when controlling for superordinate category identification, ingroup identification remained a strong or even the sole predictor of intergroup processes.

Figure 5.2. Integrating path-analytic model: Indirect effect of prototypicality on intergroup differentiation as well as collective and organizational behaviour under the influence of the gender proportion at work. Standardized regression weights; \* $p < .05$ . + $p < .10$

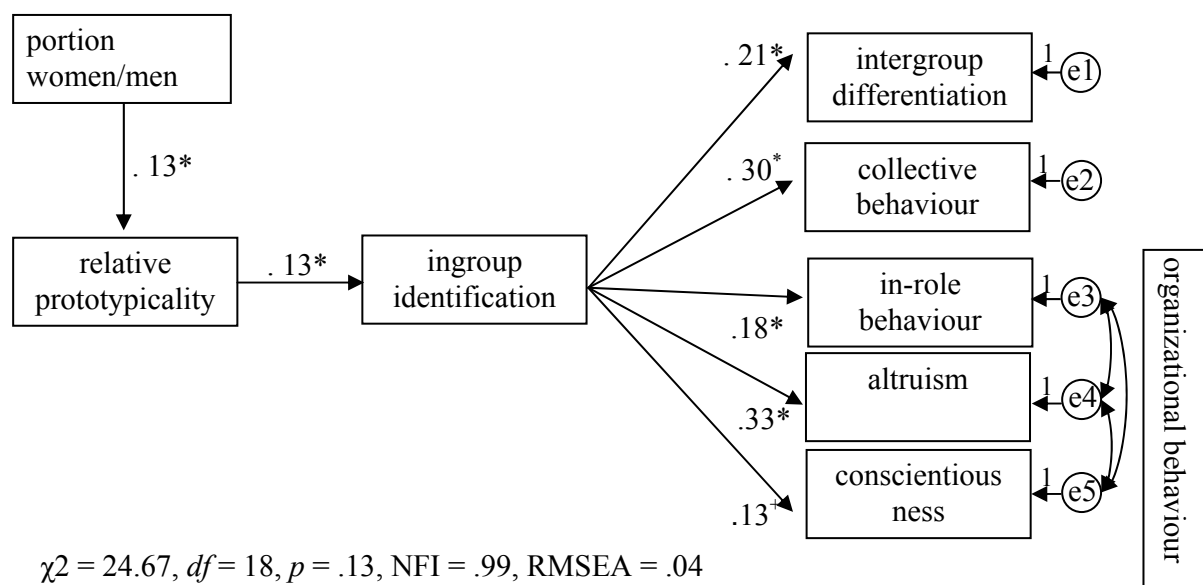


Table 5.14 Intercorrelations, means and standard deviations, female participants, n = 238

	gender proportion at work	relative proto- typicality	identification with the ingroup	intergroup differentiation	collective behaviour	in-role behaviour	altruistic behaviour
relative prototypicality	.13*						
identification with the ingroup	.06	.13*					
intergroup differentiation	-.03	.01	-.21*				
collective initiative	.06	.08	.30*	-.20*			
in-role behaviour	.06	-.12	.18*	-.05	.11+		
helping	-.005	-.04	.33*	.06	.15*	.31*	
conscientious-ness	-.03	.01	.13+	.06	.11+	.20*	.24*
<i>M</i>	4.88	.03	4.55	1.02	4.44	6.44	5.64
<i>SD</i>	2.2	1.76	1.30	1.22	1.33	.86	.96

Note. \*\*\*p<.001, \*\*p<.01, \*p<.05 +p<.10

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### 5.4.3 Discussion

Study 4 aimed at replicating and integrating findings from Study 1 and Study 3 within German organizations and hence, to deliver further evidence for the developed research model within the field. In accordance with Study 1 it was intended to test whether male and female employees are perceived to be mutually typical on different dimensions (i.e., task-orientation & team-orientation). However, mutual typicality is likely to not imply mutual prototypicality. Instead it was assumed that women themselves perceive female employees in general to be less prototypical of the organization compared to male employees and thus to perceive their ingroup to lack fit at work. This perception of relative group prototypicality was assumed to be correlated with ingroup identification but not, or less, with superordinate category identification. Moreover, Study 4 intended to replicate and extend the research model supported in Study 3 that relative group prototypicality indirectly exerts an impact on intergroup processes. Relative group prototypicality is assumed to predict ingroup identification which in turn leads to intergroup differentiation, collective behaviour in favour of the ingroup as well as behaviour in favour of the superordinate category.

Before analyzing the data to test these predictions it was checked in a first step how participants evaluated the superordinate category (i.e., the organization). According to the IPM (Mummendey & Wenzel, 1999; Wenzel et al., 2003) relative group prototypicality is positively connoted if the superordinate category is favourably evaluated. Indeed, female employees in Study 4 perceived their workplace to be positive. Thus, relatively high ingroup prototypicality is likely to have a positive meaning.

It was hypothesized and demonstrated in Study 1 that female and male employees are perceived to be mutually typical on different dimensions. Results of Study 4 replicate this finding and are also in line with research on gender stereotypes (Diekmann & Eagly, 2000; Eagly & Steffen, 1984; Willemsen, 2002). As expected, male employees were perceived to be more typical on the task-dimension compared to female employees. Female employees were perceived to be more typical on the team-dimension compared to male employees. Thus, both gender groups are perceived to be mutually typical with respect to task- and team-orientation at work. Furthermore, mean comparisons between typicality ratings also revealed insights about the relation of the two subgroups towards the superordinate category. Male employees were perceived to be more typical and female employees to be less typical on the task-dimension compared to the superordinate category. However, female employees were perceived to be more typical and male employees to be less typical on the team-dimension

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compared to the superordinate category. Thus, as in Study 1, Study 4 reveals that male employees were perceived as being more task-orientated compared to female employees and the prototype of the organization. Female employees were perceived as being more team-orientated compared to male employees and the prototype of the organization. However, being highly typical on one of the dimensions might not necessarily be an advantage in itself. Instead, the relative position of one group in relation to the other group and the superordinate category (i.e., relative group prototypicality) might add to the understanding of intergroup processes.

It was assumed that mutual typicality does not imply mutual prototypicality, but instead that female employees are perceived as being low in relative group prototypicality on both the task- and the team-dimension. However, results do not support this prediction. By contrast, female employees claimed to be less discrepant from the organizational prototype on the task-dimension than male employees, as revealed in the analysis of relative group prototypicality perceptions. Hence, they claimed their ingroup to be more relatively prototypical on the task-dimension even though they perceived this dimension to be more typical of male employees than of their ingroup. On the other hand, female employees tended to perceive both groups to be equally prototypical on the team-dimension even though they perceived this dimension to be more typical of their ingroup. These findings contradict the assumption that mutual typicality might not imply mutual prototypicality in a surprising way. Results do not only indicate a perception of mutual prototypicality. Moreover, results show that relatively high and equal group prototypicality were perceived on the gender atypical dimensions. These results of Study 4 are not in line with empirical evidence on perceptions of relative group prototypicality revealed in Study 1. Participants in Study 1 had indicated that male students were more prototypical on the task- as well as the team-dimension. These differences between Study 4 and Study 1 might lie in different perceptions of ingroup stereotypes between the student and the employee sample. This consideration finds support in research on the self-concept of female students in comparison to female managers. Findings show that female students perceive themselves to be more feminine than female managers who perceive themselves to be more masculine (Steins & Wickenheiser, 1995). Thus, female students appear to hold a more traditional conception of gender stereotypes compared to female managers. Applying these results to the context of Study 1 and Study 4 one might conclude that female students in Study 1 are less likely to project their feminine ingroup features onto the superordinate category which is likely to be male dominated (cf., chapter 5.1.3). Thus, female students perceive their ingroup to be rather dissimilar from the prototype

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and hence to generally lack fit. Contrarily, female employees in Study 4 might be more likely to project their less feminine but more masculine ingroup features onto the superordinate category. Thus, they do not perceive themselves to generally lack fit. What remains open is why female employees claim to be even more relatively prototypical than male employees on the task-dimension whereas they perceive both groups to be relatively equal in prototypicality on the team-dimension. The interpretation of this result remains speculative. However, I assume that the motivation to project ingroup features is likely to be stronger on the task-dimension compared to the team-dimension. Task-orientation might be a more central and even a more prescriptive dimension than team-orientation within the work-setting (cf., Konrad & Kranjčec, 1997). Hence, it is more instrumental to claim high relative ingroup prototypicality on the task-dimension. As team-orientation might be less central and less prescriptive at work, conceding relatively equal group prototypicality on this dimension might be an attempt to compensate the outgroup for the claim of relatively high ingroup prototypicality on the more prescriptive task-dimension (cf., Mummendey & Schreiber, 1984). Results of Study 4 indicate that the perception of relative group prototypicality within the field might be more complex than originally assumed. The role of different projection dimensions and its diverging prescriptiveness should be investigated further in future research. Summing up, Study 4 reveals that the assumption of a general lack of fit of women in organizations as suggested by Heilman (1983, 1995, 2001), and demonstrated in Study 1, can not be held in this sample without any restraints.

The lack of fit hypothesis was nevertheless supported when taking into consideration the numerical representation of women within the organization. Lack of fit tended to result for female employees in organizations in which women constituted 50% or less of the staff. There was a tendency for those female employees to perceive their ingroup as less relatively prototypical than the outgroup of male employees. However, female employees who worked in organizations in which women constituted more than 50% of the staff, perceived the ingroup to be more relatively prototypical than the outgroup. Thus, the numerical proportion of men and women at work drives the perception of lack of fit and fit respectively. This finding is in line with assumptions of the Social Identity Theory of Leadership (Hogg, 2001b). Organizational prototypes are - according to Hogg (2001b) – more likely defined by dominant attributes of a demographic majority. Thus, if women are underrepresented within the staff, female employees are more likely to hold a more narrowly male-defined organizational prototype. Accordingly, they might be more likely to perceive their ingroup to be relatively less prototypical compared to the outgroup. However, if women

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are overrepresented, female employees are probably likely to hold a more female-defined organizational prototype. Hence, they might be more prone to perceive their ingroup to be relatively more prototypical compared to the outgroup. This assumed influence of majorities on the definition of organizational standards is also reflected in sociological approaches (Ely, 1995; Kanter, 1977/1995). However, as there is no measure of narrowness and no independent measure of the content of the superordinate prototype in this study these considerations remain speculative. Hence, the impact of numerical distributions on the definition of a superordinate prototype in terms of content as well as complexity vs. narrowness should be addressed in future research. In sum, the representation of relative group prototypicality appears to follow the actual proportion of men and women in organizations. A tendency for a lack of fit is more readily perceived, when there are fewer women than men within the staff. A high fit is perceived when there are more women than men within the staff.

Furthermore, it was predicted in Study 4 and in correspondence to assumptions in Study 1 and results in Study 2 and 3 that relative group prototypicality would be positively related to ingroup identification but not, or less, with superordinate category identification. Results support this prediction. There was a significant relationship between relative group prototypicality and ingroup identification. However, this correlation was rather weak indicating that there are other factors also predicting ingroup identification. Research has demonstrated that a number of antecedents influence the extent of ingroup identification such as perceived self-prototypicality (Eisenbeiss & Otten, submitted) or experienced uncertainty (Eisenbeiss & Otten, submitted; Grieve & Hogg, 1999; Hogg, 2000). Moreover, as expected, relative group prototypicality and superordinate category identification were not significantly related. However, the statistical significance test did also not rule out the alternative hypothesis as with a p-value of .64 the  $\beta$  error probability is moderately high. Nevertheless, throughout all four studies there was no significant evidence that relative group prototypicality and superordinate category identification are related. Instead, the correlational analysis provides evidence for the hypothesis that relative group prototypicality and ingroup identification are interrelated.

Finally, Study 4 intended to replicate and extend the research model empirically supported in Study 3. It was assumed that relative group prototypicality predicts ingroup identification which in turn increases intergroup differentiation and collective behaviour in favour of the ingroup. In addition to these hypothesized indirect effects, already tested in Study 3, it was furthermore predicted that relative group prototypicality would also serve as

indirect antecedent of behaviour in favour of the superordinate category, the organization. Moreover, the proportion of men and women at work was included in the path-analytic model as this organizational structure variable might predict the perception of relative group prototypicality. Results support these assumptions. The more women in comparison to men work in an organization the more do women perceive their ingroup as fitting. Even though, this positive correlation was significant it was nevertheless rather weak. This might be due to the measurement of gender proportion as the scale did not capture the whole range from 0% to 100%, but only depicted different ranks from 0% -50%. The result was a skewed distribution and a loss of the full range of variance. The results of the path-analytic model indicated that gender proportion is an important structural variable related to cognitive-motivational subgroup representations. Hence, in future field studies this variable should be measured including the full range of possible gender proportions. Moreover, the path-analytic model supported the finding of the simple correlational analysis as relative group prototypicality was a significant predictor of ingroup identification (compare discussion in previous section). Taken together, numerical gender proportion at work indirectly affected ingroup identification via increased relative group prototypicality perception, but there was no direct path to ingroup identification.

In line with research in the tradition of SIT (Tajfel, 1978; Tajfel & Turner, 1979) ingroup identification led to a less positive evaluation of the outgroup in comparison to the ingroup and thus to more intergroup differentiation (cf., Brown et al., 1986; Kelly, 1988; van Leeuwen et al., 2003). The path-analytic model of Study 4 furthermore delivered marginal evidence for the hypothesized indirect effect of relative group prototypicality on intergroup differentiation. Furthermore, in line with Study 3 and with previous research (Ashforth, & Mael, 1989; Kessler, & Mummendey, 2002; Mummendey, et al., 1999a), results of Study 4 demonstrated that ingroup identification predicts collective behaviour in favour of the ingroup. Moreover, results demonstrate that the more female employees perceived the ingroup to be relatively high in group prototypicality the more they were willing to engage in collective strategies in favour of the ingroup. In extension of the scope of Study 3, it was hypothesized that ingroup identification also predicts behaviour in favour of the organization. Results confirm this assumption, which is in line with research on work behaviour (van Knippenberg & van Schie, 2000). Studies had shown that work-group identification is often a relevant predictor of job involvement and job motivation (van Knippenberg & van Schie, 2000). There was furthermore evidence that the perception of fit is also an important indirect antecedent of strategies in favour of the organization. This effect emerged for prescribed in-role behaviour

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as well as unsolicited organizational citizenship behaviour, such as altruism and marginally also for conscientiousness. In sum, relative group prototypicality is not only an antecedent for women to engage in behaviour in favour of their ingroup to challenge status relations. Moreover, relative group prototypicality also exerts its impact on behaviour in favour of the organization. In that way relative group prototypicality becomes relevant to the organization as a whole as research has demonstrated that organizational citizenship materializes in quantitative and qualitative performance outcomes (Podsakoff et al., 1997; for review see Podsakoff et al., 2000).

### ***Methodological limitations***

The interpretation of Study 4 might be restrained by two methodological flaws. First, the measurement of intergroup differentiation in Study 4 was improved compared to Study 3. However, measuring intergroup differentiation between gender groups at work still remains a challenge. Aspects that have been used to measure intergroup differentiation in other contexts such as likeability, contact, tolerance and self-observed behaviour appear not to capture gender relations at work (cf., Waldzus et al., 2005; Weber et al., 2002; Wenzel et al., 2003). Thus, it would be useful to develop a scale to specifically assess inter-gender differentiation while taking into consideration that members of both groups usually like each other and are in contact.

Second, the subscale of conscientiousness was low in reliability. This was rather surprising as this scale was derived from a tested and validated scale of organizational citizenship behaviour by Staufenbiel and Hartz (2000). The authors translated conscientiousness items from organizational citizenship behaviour questionnaires with sufficient reliability (cf., Moorman, 1991; Moorman, Niehoff & Organ, 1993; Niehoff & Moorman, 1993; Podsakoff, MacKenzie, Moorman, & Fetter, 1990) and report a reliability of conscientiousness averaged over 17 studies of  $\alpha = .81$ . However, Staufenbiel and Hartz (2000) do not report the reliability of their translated scale, but exclusively different indices for its validity. Hence, it might be useful and necessary to check the translation of items with the original scales and to reconsider the measurement of conscientiousness.



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***Summary***

Study 4 provides evidence that the proposed research model is indeed applicable within the field and works to describe gender relations at work. In accordance with research on gender stereotypes it could again be shown that male and female employees are perceived to be mutually typical on different dimensions (i.e., task- and team-orientation). However, this does not mean that both gender groups truly complement each other at work. Instead Study 4 surprisingly demonstrated that female employees perceive themselves as being more prototypical on the task-dimension even though this dimension is rather atypical of their gender group. Thus, this study revealed that female employees did not perceive themselves as being less relatively prototypical compared to male employees. This assumption that female employees are lacking fit was partially supported when also considering actual gender proportion at work. There was a tendency that female employees perceived the outgroup of male employees to be more relatively prototypical if women constituted 50% or less of the staff. By contrast if women constituted more than 50% of the staff they perceived the ingroup to be more relatively prototypical. Thus, gender proportion influenced the perception of relative group prototypicality. Study 4 also demonstrated that relative group prototypicality is positively related to ingroup identification which in turn led to more intergroup differentiation, more behaviour in favour of the ingroup and additionally more behaviour in favour of the superordinate category, the organization.

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## 6. General discussion

### 6.1 Summary of the presented studies

Only recently a German journal article pointed out that overall as few as 10% of management positions in German organizations are held by women (“Frauen”, 2005). This underrepresentation of women in management has been metaphorically described as “glass ceiling”. The “glass ceiling” effect has been discussed to be related to cognitive gender representations such as stereotypes (Bischoff, 1999, p.53; Federal Glass Ceiling Commission, 1995, p. 27). More precisely, stereotypes about men seem to match whereas stereotypes about women seem to mismatch perceptions of typical manager characteristics (Martell et al., 1998; Powell et al., 2002). Thus, women have been found to be perceived as not fitting equally well to managerial role-prescriptions as men do (Heilman, 1983, 2001). This lack of fit of women at work has been shown to have implications on the evaluation of women’s performance and decisions about their recruitment opportunities (Heilman, 2001; Heilman et al., 2004; Sczesny & Stahlberg 2002). However, the present work bases on the assumption that women do not only misfit managerial stereotypes but also organizational prototypes (Hogg, 2001a, 2001b). Hence, the lack of fit of women broadens to the organizational context in general and affects women’s experiences and behaviours at work. Experiences with stereotype-based negative evaluations in male-typed work-settings do not only frustrate women (Küpper, 1994) but sometimes may even lead women to detach from their own gender group (Ellemers et al., 2004). Thus, the perception of lack of fit is likely to affect women’s group-based self-definition. The aim of the present research was twofold. First, it aimed at depicting the processes that lead to a consensually shared gender representation at work resulting in lack of fit of female employees. Second and most importantly, it aimed at addressing the implications of perceived different degrees of fit on women’s group-based self-definition and their behavioural strategies at work. Through this, it was intended to gain some insight concerning the conditions under which women do identify with their gender group at work and collectively challenge power relations within the organization.

These research aims were addressed within the framework of the Ingroup Projection Model (Mummendey & Wenzel, 1999) a cognitive-motivational model that makes assumptions about the underlying processes resulting in perceptions of different degrees of fit of social groups (relative group prototypicality). This conceptualization within the IPM allows

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integrating research on gender stereotypes (Diekmann & Eagly, 2000; Eagly & Steffen, 1984) and on lack of fit (e.g., Heilman, 2001; Heilman et al., 2004; Szczesny, 2003a) with propositions on the power of organizational prototypes (Hogg, 2001a, 2001b). It enlarges the perspective on gender representations at work by connecting them to research in the tradition of the Social Identity Approach (Tajfel, 1978; Tajfel & Turner, 1979; Turner et al., 1987) which outlines the importance of group-based self-definition (i.e., ingroup identification) for intergroup processes. Thus, the present research aims at integrating these various approaches to analyze the phenomenon of lack of fit and its implications.

Four studies were conducted to investigate the outlined research aims. The empirical evidence with regard to both research questions will be summarized separately. The first section focuses on projection processes leading to shared gender representations at work. The second section summarizes results regarding the main research issue of the dissertation, i.e. the implications of perceived relative group prototypicality on ingroup identification and behavioural strategies.

### **6.1.1 Shared perceptions of relative group prototypicality**

The first research aim was to depict the underlying processes that lead to the perception of lack of fit of women at work. This explorative and descriptive research aim was realized by integrating research on gender stereotypes (e.g., Diekmann & Eagly, 2000; Eagly & Steffen, 1984), on the lack of fit model (Heilman, 1983, 1995, 2001), on organizational prototypes (Hogg, 2001a, 2001b) and on the IPM (Mummendey & Wenzel, 1999). Research on gender stereotypes has repeatedly demonstrated that females and males are perceived to be typical on different dimensions, i.e., task- and team-orientation (Diekmann & Eagly, 2000; Eagly & Steffen, 1984; Szczesny, 2003b). Accordingly, it was hypothesized that males are perceived as being more task-oriented compared to females. On the contrary, females were assumed to be perceived as being more team-oriented compared to males. Despite this assumed mutual typicality I furthermore hypothesized that males and females need not be perceived as to complement each other at work, thus as being mutually prototypical (cf., Krell, 1994). Instead, I predicted that females are perceived as being low in relative group prototypicality compared to males and thus as lacking fit. In line with assumptions of the IPM (Mummendey & Wenzel, 1999; Waldzus et al., 2004) I assumed that this perception is consensually shared between

males and females, but that, nevertheless, both subgroups diverge in the scope they attribute to the other group's relative prototypicality (i.e., perspective divergence).

This first research aim was addressed by applying propositions of gender stereotype research and the ingroup projection model to the field of gender relations at work. Thus, the focus lay on replicating research results (Diekmann & Eagly, 2000; Eagly & Steffen, 1984; Heilman, 2001) and on describing processes leading to lack of fit. Insights concerning these hypotheses can be drawn from Study 1 and Study 4, two correlational studies that were conducted within a student setting and within a work setting respectively.

Study 1 provided evidence for the hypothesis that males and females are perceived as being mutually typical on different dimensions (i.e., task- vs. team-orientation) replicating findings of gender stereotype research (Diekmann & Eagly, 2000; Eagly & Steffen, 1984). As expected there was no evidence for mutual prototypicality. Instead females were perceived as being low in relative group prototypicality (i.e., lacking fit) by both male and female participants (cf., Heilman, 2001). Contrary to the hypothesis derived from the IPM (Mummendey & Wenzel, 1999) there was no evidence for perspective divergence with regard to the scope of males' and females' relative group prototypicality. Instead gender representations appeared to be rather traditional without any room for different perspectives on females' lack of fit within the student context. Furthermore, Study 1 delivered some additional insights in the perceived relevance of task- and team-orientation with the former being perceived to be more important than the latter. It was controlled whether these different relevance attributions influence perceptions of relative group prototypicality. However, there were only minor changes in the results.

Study 4 aimed at replicating these findings for female employees within German organizations. It confirmed indeed that males and females are perceived as being mutually typical on the task- and team-dimension. However, female employees did not perceive themselves as generally lacking fit (i.e., low in relative group prototypicality). They only tended to perceive female employees as low in relative group prototypicality in organizations in which women constituted equal or less than 50% of the staff. In organization in which women constituted more than 50% of the staff, they clearly perceived their ingroup to be more relative prototypical. Additionally, they tended to perceive mutual relative prototypicality on the task- and team-dimension in a surprising way. They perceived their ingroup as being high in relative group prototypicality on the task dimension – a dimension clearly attributed as being more typical of male employees. On the contrary, they perceived both groups to be rather equally prototypical on the team-dimension – a dimension attributed

as being more typical of female employees. These surprising results only allow some speculations. One might assume that female employees hold less traditional representations of gender groups compared to female students (cf., Steins & Wickenheiser, 1995). In consequence, this would allow them more easily to project on the task-dimension a dimension that has been shown to be more prescriptive than team-orientation (Konrad & Kranjčec, 1997). While claiming relatively high group prototypicality on the task-dimension female employees might acknowledge equal relative group prototypicality on the team-dimension as a sort of compensation (cf., Mummendey & Schreiber, 1984).

Overall Study 1 and Study 4 give strong evidence that males and females are perceived to be mutually typical on the task- and team-dimension. However, the picture concerning relative group prototypicality perceptions is somewhat more mixed. There is evidence that females are perceived as lacking fit in the student sample as well as in the female employee sample in organizations in which women constitute 50% or less of the staff. Moreover, gender representations in the female employee setting appear to be less traditional which is also in line with research on gender and leadership representations (Powell et al., 2002; Sczesny & Stahlberg, 2002; Willemsen, 2002). These more androgynous representations may give room for projection tendencies on the prescriptive task-dimension. However, more research is needed to gain a clear picture of relative group prototypicality perceptions at work.

### **6.1.2 Consequences of relative group prototypicality**

The main research aim of this dissertation was to test for implications of perceived relative group prototypicality on ingroup identification and subsequent behavioural strategies both in favour of the ingroup as well as in favour of the organization. Deriving from research on self-prototypicality (Eisenbeiss & Otten, paper submitted; Kashima et al., 2000) I argued that group-prototypicality affects ingroup identification (cf., chapter 2.6). It was predicted that relatively high ingroup prototypicality leads to higher ingroup identification compared to relatively high outgroup prototypicality and equal subgroup prototypicality. Within the gender context at work I expected that relative group prototypicality is more likely to affect ingroup identification and does rather not affect superordinate category identification. This proposition was set up in line with organizational studies and cognition research. Research had shown that organizational members are often prone to identify strongly with subgroups at work with

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whom they share a common fate, as for instance a gender subgroup (Ashforth & Johnson, 2001; van Knippenberg & van Schie, 2000). Moreover, it was derived from both organizational and cognition research, that the organizational context serves as abstract structural point of reference whereas the subgroup depicts the primal, highly accessible and self-relevant category (Ashforth & Johnson, 2001; Rosch et al., 1976). Therefore it was assumed that information affecting the fate of the ingroup such as relative group prototypicality is likely to rather affect ingroup identification.

Research in the tradition of SIT (Tajfel, 1978; Tajfel & Turner, 1979) has shown that ingroup identification is a key factor predicting intergroup differentiation, collective behaviour in favour of the ingroup as well as organizational behaviour. As I hypothesized that relatively high ingroup prototypicality leads to an increase in ingroup identification I predicted furthermore that relative group prototypicality indirectly affects intergroup differentiation, collective behaviour in favour of the ingroup as well as in favour of the superordinate category, the organization.

Study 1 was set up to test for correlative evidence concerning the impact of relative group prototypicality on identification. However, results yielded little support for this prediction. There was no significant correlation between relative group prototypicality and ingroup identification. As expected, there was also no significant correlation between relative group prototypicality and superordinate category identification.

In Study 2 relative group prototypicality was manipulated to test experimentally its effect on ingroup identification. Indeed results delivered strong evidence for a causal impact on ingroup identification. As predicted, relatively high ingroup prototypicality lead to higher ingroup identification compared to relatively high outgroup prototypicality and equal subgroup prototypicality. Moreover, relative group prototypicality did not significantly affect superordinate category identification suggesting that indeed the effect of relative group prototypicality is rather limited to ingroup identification.

Study 3 replicated in a further experiment the predicted effect of relative group prototypicality on ingroup identification. As in Study 1 and Study 2 there was again no significant effect of relative group prototypicality on superordinate category identification. Study 3 also yielded evidence for identification predicting intergroup differentiation and collective behaviour in favour of the ingroup such as collective engagement, networking and ingroup solidarity. As high relative group prototypicality affects ingroup identification, it also exerted – in line with predictions - a significant indirect impact on intergroup differentiation and collective behaviour in favour of the ingroup.

Study 4 was conducted to test the proposed research model within the field. Results revealed that the organizational context and more precisely the proportion of women and men at work significantly affects the perception of relative group prototypicality. Moreover, correlative analysis demonstrated that the more female employees perceive their ingroup as relative prototypical the more they identify with their ingroup. At the same time relative group prototypicality and superordinate category identification (i.e., identification with the organization) were unrelated. Overall, the data fitted the integrative research model and yielded evidence for indirect effects of relative group prototypicality on intergroup differentiation, collective behaviour in favour of the ingroup and organizational behaviour (in-role and extra-role behaviour).

Summing up, Study 2 to Study 4 yielded strong experimental and correlative evidence for the hypothesis that relative group prototypicality affects ingroup identification. Moreover, results of Study 1 to Study 4 suggest that relative group prototypicality might rather not significantly influence superordinate category identification. Furthermore, Study 3 and Study 4 supported the prediction that relative group prototypicality exerts indirectly – via increased ingroup identification – its impact on intergroup processes. Relative group prototypicality does not only influence behaviour in favour of the ingroup but moreover also in favour of the superordinate category, the organization.

## **6.2 Theoretical implications**

### **6.2.1 Implications for research on gender relations**

The presented research approach integrated research on gender stereotypes, lack of fit and organizational prototypes within the framework of the Ingroup Projection Model. Through this, the understanding of gender relations at work was extended. Study 1 and Study 4 replicated results known from gender research that males and females are perceived to be mutually typical on different content dimensions. This well documented finding was put into context by applying notions of the IPM. Through this, it could be shown that mutual typicality does not necessarily imply mutual prototypicality. Instead it was shown that subgroup stereotypes gain their specific meaning and implications within the social context. It is the prototype of the superordinate category with its normative power that determines how well

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subgroup stereotypes match within the context of the superordinate category. These results are on one hand in line with research on gender stereotypes and lack of fit and go on the other hand beyond them. They are in line with previous research as they replicate mutual typicality (Diekmann & Eagly, 2000; Eagly & Steffen, 1984) and furthermore also indicate that females often lack fit (Heilman, 1983; 1995; 2001). However, they go beyond this research tradition as lack of fit within the present approach is not described as a misfit of stereotypes of women and stereotypes of management, but instead as a misfit with the organizational prototype (cf., Hogg, 2001a; 2001b). Thus, women do not only misfit leadership roles but are lacking fit in a broader sense: they do not fit equally well into the organization. Hence, the mismatch of women is a question of the organizational culture and varies between different contexts. The results of Study 1 and Study 4 that mutual typicality on different content dimension does not imply mutual prototypicality also reflects Krell's (1994) critique and supplies it with an empirical argument. Management research often underlines that men and women complement each other at work. However, on the contrary, the results provide evidence that both gender groups do not truly complement each other in relation to the prototype of the superordinate category.

### **6.2.2 Implications for the IPM and intergroup research**

The integrative approach of gender stereotype research, lack of fit and organizational prototypes also adds to the understanding of the IPM (Mummendey & Wenzel, 1999). The understanding of relative group prototypicality is broadened when research explicitly considers the stereotypical dimensions of both subgroups. It sheds some light on the content of projection and thus might give more insight in the underlying process. Different content dimensions of projection might be used within the intergroup context to compete with the other group. One group might claim relatively high group prototypicality on a prescriptive dimension. At the same time this group might compensate the outgroup by acknowledging relatively high or equal subgroup prototypicality on a less prescriptive dimension (see, Study 4). This aspect should be investigated further in other intergroup contexts.

Moreover, Study 4 also adds to the understanding of how prototypes are context dependent. Hogg (2001a, 2001b) outlines that prototypes depend on their social context and are more likely defined in terms of a dominant majority. Study 4 indicated that indeed female employees are more inclined to perceive their ingroup as high in relative group prototypicality



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if women are overrepresented at work. However, the correlation between the numerical gender distribution and the perception of relative group prototypicality was rather small. In addition, in Study 1 the prototype of the superordinate category appeared to be male-defined even though gender relations were about equal. Thus, prototypes are not merely dependent on numerical distributions. Relevant prototype attributes are very likely learned associations that do not change easily (cf., Richards & Hewstone, 2001). Thus, they might only be changed if women attributes are overrepresented within an organization such as in more female dominated organizations. At university in business administration the equal proportion of male and female students might not be sufficient to change the learned prototype representation (cf., Powell et al., 2002; Sczesny, 2003b). As the definition of the prototype of the superordinate category determines the projection process of subgroups (Waldzus et al., 2005; Waldzus et al., 2003) the present research already provides some preliminary evidence on how prototypes might be defined by numerical representations of subgroups.

One major aim of the present research was to show that the perception of relative group prototypicality affects ingroup identification. In extension of the propositions of the IPM I assumed that relative group prototypicality and ingroup identification might constitute a recursive relation. Within the IPM identification is integrated as an important predictor of projection and thus the perception of relative group prototypicality (Waldzus et al., 2003; Wenzel et al., 2003). The more individuals identify with both the ingroup as well as the superordinate category the more they project and the more they perceive their ingroup to be relative prototypical of the superordinate category. Several studies could provide evidence for this notion (Waldzus et al., 2003; Wenzel et al., 2003). However, I assumed that being aware of one's subgroup prototypicality may affect the extent to which one would like to identify with the ingroup. Perceiving one's ingroup and outgroup position in relation to an important superordinate prototype is likely to affect an ingroup's attractiveness (cf., Hogg, 2001b; Turner et al., 1987). Thus, if the ingroup is relatively high in prototypicality for a salient inclusive self-category, it appears to be more positive and more attractive to identify with. Hence, the present research model provides an extension to the IPM by suggesting a recursive relation between identification and relative group prototypicality. Study 2 to Study 4 confirmed this assumption in experimental and correlational research designs. Thus, the present research provides some empirical evidence that relative group prototypicality and identification might indeed constitute a recursive relation. This assumption of a bidirectional relation between identification and relative group prototypicality reflects research results on self-prototypicality and ingroup identification (Eisenbeiss & Otten, 2004; Kashima et al.,

2000). However, this proposed recursive relation should be investigated further for its applicability on the group level in different social contexts with different groups.

Moreover, the present research model extended the IPM by focusing on behavioural implications of relative group prototypicality. Study 3 and Study 4 provided evidence that relative group prototypicality indirectly affects intergroup differentiation, collective behavioural strategies in favour of the ingroup as well as in favour of the superordinate category (organizational behaviour). As relative group prototypicality affects ingroup identification this leads in turn to more involvement in pro-ingroup actions (i.e., intergroup differentiation, collective strategies) – an assumption that was derived in line with research in the tradition of the SIT (Brown et al., 1986; Ellemers, 1993; Kelly, 1988; van Leeuwen et al., 2003; Mummendey et al., 1999a; Mummendey et al., 1999b; Tajfel & Turner, 1979). Furthermore, the research model integrated assumptions from organizational studies by testing for effects of relative group prototypicality on organizational behaviour in Study 4. This effect of relative group prototypicality on organizational behaviour via heightened ingroup identification was in line with previous studies (van Knippenberg & van Schie 2000). Results indicated that subgroup identification was a strong predictor of organizational behaviour at work while organizational identification was of minor importance. Therefore, Study 4 provides evidence in favour of the argument to consider multiple foci of organizational identification and particularly of formal and informal subgroup identification as predictor of organizational behaviour (Ashforth & Johnson, 2001; Reichers, 1985, Riketta & van Dick, in press; van Knippenberg & van Schie, 2000).

### ***6.3 Practical implications for human resource management***

#### **6.3.1 Breaking the vicious circle and cracking the glass ceiling**

So far studies have shown how gender stereotypes and lack of fit exert their impact on recruitment decisions and the perception of leadership abilities (Heilman, 2001; Heilman et al., 2004; Sczesny & Stahlberg, 2002). The present research model takes a different perspective on this aspect of the so called “glass ceiling” phenomenon. I intended to broaden the scope of research on gender-related fit by emphasizing the importance of organizational prototypes and the effect of relative prototypicality on the affected subgroup of females. In line with this

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reasoning the presented studies demonstrate that only if women see their group as fitting into the organization (i.e., high ingroup prototypicality) they show an increased ingroup identification which in turn has a major impact on intergroup behaviour. Study 3 as well as Study 4 provided evidence that overcoming lack of fit lead women to more mutual support such as networking or solidarity with other female employees. Applying these research results to the work-setting one might conclude that only under high fit female employees identify strongly with their ingroup. Taken further, only under high fit the ingroup appears to female employees as valuable instrument to improve conditions at work by networking or joining collective initiatives.

Two conclusions can be drawn from this. First, the presented research results shed some light on the current situation of women at work which might be best captured as a vicious circle. The dilemma is that women generally are perceived as not fitting well into organizations, especially in such organizations in which women are numerically underrepresented. This perceived low group prototypicality is likely to cause low identification with female employees leading to a lack of involvement in collective behavioural strategies in favour of the ingroup. However, without collective mutual support among female employees it appears very likely that the lack of fit of women in organizations persists. Hence, the conditions constituting low gender identification and low ingroup solidarity remain unchanged. This vicious circle is likely to be one reason that holds women back from challenging unequal conditions at work. Moreover, women might not only abstain from questioning inequality at work, but might also contribute to it. This kind of reasoning connects the present research results to a line of research conducted by Ellemers and colleagues (2004). They found that successful females in a male-dominated organization tend to perceive themselves as being unlike other women at work and stereotype women sometimes even more strongly than men (Ellemers, van den Heuvel, de Gilder, Maass, & Bonvini, 2004). In consequence, women in a male-dominated organization might contribute to the glass ceiling effect while distancing from, stereotyping and negatively evaluating female colleagues. Thus, the vicious circle described above does not only persist because women are less likely to challenge collectively the inequality at work but also because they might also under certain conditions actively contribute to it.

Second, the presented results also allow some conclusions on how the numerical underrepresentation of women in management (i.e., glass ceiling) might be abolished. The empirical evidence of the presented studies indicates that overcoming lack of fit leads women to more networking and solidarity with ingroup members. These results suggest that breaking

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the vicious circle (see section above) and increasing the perceived fit of women within the organization also helps cracking the managerial glass ceiling. While women increasingly support each other and build networks, they also create conditions facilitating and augmenting career opportunities. Networks facilitate the exchange of strategically important information. Hence, if a woman can rely on a tight network, she might for example know more easily about new job opportunities at work, or interesting and useful projects. Moreover, she might be more readily supported by female colleagues as well as by female leaders who might not only encourage her, but also propose her for management positions. Thus, mutual support might be one mean to increase women's chances of pursuing a successful career. However, women's career development does not only rely on the loyalty of female colleagues, but also on their fit within the organizational context itself. One can assume that if women as a group highly fit into an organization, they will also generally appear to be more eligible for leadership positions. This conclusion can be drawn from Hogg's (2001a, 2001b) Social Identity Theory of Leadership. Studies have shown that these individuals, who were perceived as being prototypical members of the organization, also were particularly liked and were seen as being effective leaders (Hains et al., 1997; Hogg et al., 1993). Transferring this line of thinking onto the group level, one can conclude that the more women are perceived as matching the organizational prototype the more they are evaluated positively and the more they are perceived as capable aspirants for management roles. Thus, increasing the organizational fit of women also increases the managerial fit of women and facilitates cracking the managerial glass ceiling.

### **6.3.2 Suggestions for interventions**

As outlined above the presented studies show that increased fit enables networking and loyalty among female employees at work. Moreover, results of Study 4 indicate that increased fit also leads female employees to show more organizational behaviour both in line with prescribed job-requirements as well as in extension of job-prescriptions (i.e., organizational citizenship behaviour). As organizational behaviour has been demonstrated to be highly related to qualitative and quantitative performance measures (Podsakoff et al., 1997; Podsakoff et al., 2000) it is of high interest of organizations to foster female employees' identification with their ingroup. Thus, overcoming lack of fit of female employees is an issue of social justice as well as of economic interest. Therefore, increasing fit of women at work

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should be addressed in organizational interventions. The presented research results allow deducing a possible starting point for such a management approach. Results of the presented studies indicate that females ought to perceive high ingroup prototypicality in order to gain a more certain and stronger ingroup identification. Thus, female employees should be enabled to project ingroup attributes onto the superordinate category. However, most often the prototype of the organization appears to be more male-defined than female-defined. In consequence projection tendencies of female employees are likely to be restrained by such a narrow representation of the superordinate category. Thus, to facilitate female employees' projection of their ingroup attributes onto the superordinate category, human resource management programs should address the cognitive representation of the organizational prototype or in other words should address the issue of organizational culture. In line with propositions of the IPM a more complex representation of the organization should allow both subgroups - male and female employees - to perceive themselves as represented within the organization (cf., Waldzus et al., 2003; Waldzus et al., 2005).

This approach is also followed in some diversity management programs (Wagner & Sepehri, 1999). However, results of the presented studies suggest that it is not sufficient if female employees perceive themselves as equally prototypical but rather need to perceive themselves as more prototypical than their male colleagues. Thus, results suggest to favourably support women in order to change status relations at work. This aspect touches the antagonist societal as well as scientific discussion about the advantages and disadvantages of equal or preferential treatment of women in job recruitment and promotion (cf., Aeberhard, 2001; Ellis & Sonnenfeld, 1994; Gutek, 2001; Heilman et al., 1987). This question is also treated in feminist theories and is reflected in the opposition of the claim for equity such as Simone de Beauvoir (1951/1995) does in her feminist theory versus the claim for differentiation (cf., Knapp, 2000; Schrupp, 1997). Feminists that favour differentiation argue that in order to improve and challenge status relations between women and men, one should not seek for equality but rather reverse status positions and favour women. They unmask the dilemma of equality: inequality is continued if unequal entities are treated equally (Knapp, 2000). Only if women are favoured these feminists see a chance to truly change social constructions that are traditionally male dominated (Schrupp, 1997). "...power is needed to change power relations" (own translation, Schaeffer-Hegel, 2000, p. 205). However, it is not my intention to deepen or even solve the feminist discourse about equity versus differentiation. Referring back to practical implications I would argue that in order to change status relations women indeed should be encouraged to claim being more relative prototypical compared to

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men. This approach might be beneficial because it can be expected that men are also likely to claim being high in relative group prototypicality as indicated in Study 1. This claim for high relative group prototypicality of both gender groups results in a competition that might be necessary to truly change status relations at work. Women have to actively demand a redefinition of the organizational culture that visibly includes them. At the same time, it is likely that male employees won't let off easily from the traditionally male-defined organizational culture that benefits them. Thus, during the process of social change competing claims of relative group prototypicality might be the means for the ends of future gender equality in organizations and thus, of cracking the glass ceiling. Such an intervention that focuses on the representation of the inclusive prototype is likely to be supported by an increased recruitment of capable women at work. Study 4 indicated that the numerical proportion of women and men at work affects the representation of relative group prototypicality. Thus, gender balanced recruitment strategies might go best along with interventions addressing diversity perceptions of the organizational prototype. To conclude, I would argue for interventions that focus on a more complex representation of the superordinate category, the organization. Overcoming lack of fit might temporarily result in the competing claim for high relative group prototypicality of both gender groups before both groups agree in a shared representation of true equal relative gender prototypicality at work. Moreover, this change process is best supported by recruitment strategies that aim for advancing the numerical proportion of women and men at work.

It is a matter of fact that both suggested interventions would be also likely to bear several costs as they draw the attention to a demographic attribute (i.e., gender) instead of merit and probably cause social disturbances at work. Thus, as affirmative action programs these interventions are likely to be associated with some disadvantages (cf., chapter 1, Aeberhard, 2001; Ellis & Sonnenfeld, 1994; Gutek, 2001; Heilman et al., 1987). Nevertheless, it is important to investigate in interventions that increase the perceived fit of women at work as they allow fostering women's involvement and performance at work. This conclusion can particularly be drawn from Study 4 of the present research as women were more likely to perform at work if they perceived themselves as highly fitting within the organization. Moreover, only in organizations in which women and men are perceived as equally good representatives women's achievements are likely to be considered as much as men's are (cf., Crosby, 1994; Crosby et al., 2003). Thus, interventions are a necessity to establish just organizational practices (Clayton & Crosby, 1992). Crosby and colleagues "argue that the main reason to endorse affirmative action in education and employment is to reward merit"

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(Crosby et al., 2003, p. 109). The anticipated costs of challenging interventions might be reduced if human resource managers pay thoroughly attention to the enclosed disadvantages. It is for instance crucial to not only focus on demographic characteristics but also to emphasize merit in order to gain the acceptance of female and male workers for interventions (Crosby et al., 2003). Moreover, claiming the intervention as inevitable has also been shown to be effective in reducing people's objection to it (Pettigrew, 1961; Pratkanis & Turner, 1996). Thus, when taking into consideration their implied problems and disadvantages interventions are possible and necessary.

#### **6.4 Flaws and caveats**

There are some minor flaws and caveats with regard to the presented studies as well. Even though Study 2 to Study 4 yield evidence that the perception of relative group prototypicality affects ingroup identification I did not yet show how prototypicality exerts its influence. Thus, the theoretically assumed process that relative ingroup prototypicality increases an ingroup's attractiveness and hence leads to higher ingroup identification remains to be investigated in future research.

Moreover, the impact of relative group prototypicality on ingroup identification might be qualified by additional moderators such as the valence of the superordinate category. Our data shows that the superordinate category, students in general, was positively evaluated in all four studies. Taken further, relative group prototypicality might only exert its influence on ingroup identification if the superordinate category is positive. Following SCT inclusive categories are generally assumed to be positive the more abstract they are (Turner et al., 1987). However, inclusive categories might be negative in some contexts as well (Turner et al., 1987). In such a context the meaning of relative prototypicality changes (Wenzel et al., 2003). High ingroup fit for a negative inclusive category is likely to not increase the attraction of the ingroup. Accordingly, it might not lead to more ingroup identification. On the other hand, high outgroup prototypicality for a negative superordinate category, is likely to be irrelevant for the identification with one's own group, since it might not change the attractiveness of one's ingroup (compare Turner et al., 1987). Thus, the valence of the superordinate category is likely to moderate the impact of relative group prototypicality. Study 3 aimed at testing this moderation. However, the manipulation of the valence of the superordinate category was not successful. Therefore, this assumption should be tested in future research.

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Furthermore, the present research model based on a specific assumption about the relation between the subordinate (i.e., gender subgroup) and superordinate (i.e., organization) category level. Derived from organizational and cognition research it was assumed that the subgroup serves as easily accessible and perceptual primal category level whereas the standard of the superordinate category was thought to work as an abstract point of reference (cf., Ashforth & Johnson, 2001; Rosch et al., 1976). Therefore, it was assumed that information on the relation of the ingroup in comparison to the outgroup and with reference to the prototype of the superordinate category (i.e., relative group prototypicality) is more likely to affect subgroup identification. However, this proposition about this specific relation of sub- and superordinate category level would need further empirical tests. A different relation between both category levels (e.g., both categories are equally accessible, a perceptual primacy of the superordinate category) might in some contexts also be at work. In consequence, this might have implications for the effect of relative group prototypicality on identification. Taken further, an effect of relative group prototypicality on identification with the superordinate category might in some contexts be the result. In particular, the accessibility of the superordinate category in relation to the accessibility of the ingroup might determine whether relative ingroup prototypicality affects ingroup identification and/or superordinate category identification. Thus, the effect of relative group prototypicality on identification might be moderated by different context conditions (i.e., relative accessibility of superordinate and subordinate category level) and should be investigated in further research projects.

Finally, a last comment should address the depicted theory development within this research project. It was the aim of the present research to investigate how perceptions of relative group prototypicality affect female employees' ingroup identification and their subsequent behavioural strategies at work. Thus, it was inherent to the research goal to develop the theoretical propositions of the present work within the narrow context of female students and employees. Accordingly, the scope of the developed research model might be rather limited. However, from a critical perspective on the development of scientific theories the proposed extension of the IPM (Mummendey & Wenzel, 1999) in terms of a recursive relation between relative group prototypicality and ingroup identification is only deficiently tested in this research work, because it is limited to one specific group. Thus, this work can only serve as a first step in further theoretically developing the IPM. More empirical research is needed to test the developed research propositions with regard to alternative moderators and



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their generalizability to other intergroup contexts such as dominant groups (e.g., men) as well as to other low status groups outside the gender context.

### **6.5 Future research directions**

Future research does well to address the outlined flaws and caveats of the presented studies. In extension to such improvements there might be also some theoretical considerations worthwhile testing within the presented research context of women at work. In the following I would like to address two future research ideas: the integration of meta-stereotypes within the research model and the definition of superordinate prototypes.

The presented research model addressed the influence of perceived relative group prototypicality on ingroup identification. Thus, it was taken into consideration how an ingroup perceives its own stereotypicality compared to the stereotypicality of the outgroup in relation to the prototype of the superordinate category. Speaking in terms of stereotype research the perception of relative group prototypicality bases on perceptions of self-stereotypes and of other-stereotypes in relation to the prototype of the inclusive superordinate category. Self-stereotypes capture the ingroup's stereotyped perception of its own group features (cf., Hogg & Turner, 1987; Vorauer, Main, & O'Connell, 1998). Other-stereotypes capture the stereotype that the ingroup holds with regard to the outgroup (cf., Fiske, 1998; Stangor & Lange, 1994). Stereotypes have been shown to exert their impact on intergroup processes in numerous studies (cf., Fiske, 1998). Recently, stereotype research has turned to the question how meta-stereotypes - that is the stereotype that ingroup members assume outgroup members hold concerning the ingroup - influence intergroup processes (Hollbach, 2004; Sigelman & Tuch, 1997; Vorauer, Hunter, Main, & Roy, 2000; Vorauer et al., 1998). Thus, research on meta-stereotypes addresses for instance how an ingroup's expectation about the outgroup's stereotype concerning the ingroup affects an ingroup's attitude towards the outgroup. The concept of meta-stereotypes takes into consideration that it is important for individuals how others perceive them (Sheldon & Johnson, 1993) by transferring this notion from the interpersonal to the group-level. A growing number of studies in the field of meta-stereotypes reveal the effects of meta-stereotypes. Most importantly for the present research model is that meta-stereotypes have been shown to affect an individual's self-esteem (Vorauer et al., 1998). An individual that felt stereotyped by an outgroup member reported lower self-esteem and self-concept clarity. An individual that felt being viewed as contradicting the

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stereotype reported a stronger self-esteem and self-clarity (Vorauer et al., 1998). Thus, research provided evidence that meta-stereotypes affect an individual's self-concept. However, I would argue that a meta-stereotype does not only affect one's individual self-definition but also one's group-based self-definition as a meta-stereotype concerns the group-based expectation to be viewed in a stereotypical way by outgroup members. Taken further, I assume that within an intergroup context such as the work-place an ingroup's perceived meta-stereotype in relation to the prototype is likely to affect one's identification with the ingroup. Feeling viewed in a stereotypical way that is discrepant from the descriptive and prescriptive features of the superordinate prototype might lead to a negative perception of the ingroup. This might either let one's ingroup identification unaffected as people also identify strongly with a negative ingroup (cf., Mlicki & Ellemers, 1996) or it might lead to a lowered ingroup identification. However, feeling viewed in a stereotypical way that is in accordance with the superordinate prototype might lead to a positive perception of the ingroup. This might lead to an increase in ingroup identification. I would assume this positive effect particularly in case of female employees as they have a lower status within organizations compared to male employees. Accordingly, feeling viewed by a high status outgroup in accordance with the organizational prototype is likely to boost an ingroup member's collective self-esteem and ingroup identification. Summing up, in my regard it would be beneficial to address the power of meta-stereotype perception in relation to the prototype on ingroup identification in future research.

Furthermore, the presented research shed some light on what determines the perception of relative group prototypicality. Study 4 provided evidence that the more women are numerically represented within the staff of the organization the more they perceive their ingroup to be relative prototypical for the superordinate category. In line with the Social Identity Theory of Leadership (Hogg 2001a, 2001b) as well as sociological approaches (Ely, 1995; Kanter, 1977/1995) it was assumed that the numerical proportion of subgroups might influence the definition of the prototype representation. However, this proposition that the numerical proportion of ingroup and outgroup influences the representation of the superordinate prototype (cf., Hogg, 2001a, 2001b) has not been tested so far. Hogg (2001a, 2001b) derives his assumptions from Self Categorization Theory (Turner et al., 1987). According to SCT prototype definition is a cognitive as well as a social process. Prototypes are cognitively defined and organized in such a way as to maximize the ratio of perceived intergroup differences to intragroup differences (i.e., metacontrast principle). This notion is also in line with the more general proposition in cognitive psychology that an item is judged

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to be more prototypical of a category, the more attributes it shares with other items of a category and the fewer attributes it shares with items of contrasting categories (Rosch & Mervis, 1975). However, SCT proposes that prototype formation is also context dependent and varies both with a changing intragroup and/or intergroup situation and thus may vary with changing numerical proportions. More precisely, prototypes are defined in social interaction processes (cf., Smith & Zarate, 1990). Research so far has mainly focused on the more cognitive aspects of prototype definition in terms of metacontrast ratio (cf., Hogg, 2001a). Little research has been done to analyze how prototypes emerge in social interaction over a given time-period. Future research would profit from addressing this aspect of prototype formation in changing intergroup situations over time. Taken further, this would shed more light on the perception of relative group prototypicality in changing intergroup situations as this might apply to gender relations at work.

## **6.6 Conclusion**

The presented research model provides an integrative view on psychological factors and consequences constituting the so called “glass ceiling” at work. In line with earlier propositions suggesting that gender stereotypes are one of the factors that are responsible for the underrepresentation of women in management positions, the model goes beyond previous research on stereotypes at work. Central to the presented research is that women do not merely mismatch leadership stereotypes but moreover that they are lacking fit to the organizational prototype. This more general lack of fit to the organizational culture is likely to not only impede the promotion into management positions but is likely to be effective in everyday interaction at work. Therefore, the present research focused on implications on women themselves, their group-based self-definition and their behavioural strategies at work. The presented findings reveal that women are indeed likely to experience a lack of fit (i.e., low relative ingroup prototypicality) in organizational contexts in which they constitute equal or less than 50% of the staff. There is strong empirical evidence that such a perception of different relative group prototypicality affects ingroup identification with other female employees. The documented studies show that overcoming lack of fit leads to a stronger ingroup identification which in turn fosters solidarity, networking and collective engagement in favour of the ingroup as well as intergroup differentiation. Moreover, increased ingroup identification also affects behaviour in favour of the organization. The presented results allow

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important implications for the development of human resource management programs such as diversity management concepts. At the same time the developed research model provides several theoretical implications. It enriches approaches to the understanding of gender stereotypes and organizational prototypes by outlining that mutual typicality need not result in mutual prototypicality but is more likely related to a general lack of fit (Diekmann & Eagly, 2000; Eagly & Steffen, 1984; Heilman, 1993; 1995; 2001; Hogg, 2001a; 2001b; Krell, 1994). The present research model bases on central assumptions of the IPM (Mummendey & Wenzel, 1999) and extends its ambit with first evidence for a recursive relation between relative group prototypicality and ingroup identification. Moreover, the current research approach enriches the IPM by focusing on ingroup processes such as collective behaviour in favour of the ingroup. Finally, the presented research model contributes to the integration of social-psychological and organizational psychological approaches (Ashforth & Johnson, 2001; Reicher, 1985; Riketta & van Dick, in press; van Knippenberg & van Schie, 2000) by integrating organizational behavioural intentions within its scope. Summing up, the present research work shows that the understanding of the glass ceiling phenomenon benefits from an integrative view on its psychological factors and implications. Such an approach provides insights for practical implications and enriches theory development.

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## 7. Literature

- Abrams, D. & Hogg, M. A. (2001). Collective identity: group membership and self-conception. In M.A. Hogg & S. Tindale (Eds.), *Handbook of social psychology: Group processes* (pp. 423-460). Oxford, UK: Blackwell Publishers Ltd.
- Aeberhard, J. H. (2001). Affirmative Action in employment: Recent court approaches to a difficult concept. In M. Fetherolf Loutfi (Ed.), *Women, gender and work* (pp. 441-468). Geneva: International Labour Office.
- Allen, N. & Meyer, J. P. (1990). The measurement and antecedents of affective, continuance and normative commitment to the organization. *Journal of Occupational Psychology*, *63*, 1-18.
- Ashforth, B. E., & Mael, F. (1989). Social identity theory and the organization. *Academy of Management Review*, *Vol. 14, No. 1*, 20-39.
- Ashforth, B. E. & Johnson, S. A. (2001). Which hat to wear? The relative salience of multiple identities in organizational contexts. In M. A. Hogg & D. J. Terry (Eds.), *Social identity processes in organizational contexts* (pp. 31-48). Ann Arbor, MI: Sheridan Books.
- Ashmore, R.D., Deaux, K., & McLaughlin-Volpe, T. (2004). An organizing framework for collective identity: articulation and significance of multidimensionality. *Psychological Bulletin*, *Vol. 130, No. 1*, 80-114.
- Arbuckle, J. & Wothke, W. (1999). AMOS 4 user's reference guide. Chicago: Smallwaters Corporation.
- Barbara. Kommentare unserer Leserinnen und Leser. (21.9. 2005) brigitte.de. Retrieved 10/04/2005 from [http://www.brigitte.de/job/karriere/interview\\_vossen/](http://www.brigitte.de/job/karriere/interview_vossen/)

- 
- Bergami, M. & Bagozzi, R. P. (2000). Self-categorization, affective commitment and group self-esteem as distinct aspects of social identity in the organization. *British Journal of Social Psychology, 39*, 555-577.
- Bischoff, S. (1999). Männer und Frauen in Führungspositionen der Wirtschaft in Deutschland. Neuer Blick auf alten Streit. Deutsche Gesellschaft für Personalführung, e.V. Düsseldorf (Ed.). Köln: Wirtschaftsverlag Bachem.
- Bortz, J. (1993). *Statistik*. Berlin: Springer-Lehrbuch.
- Branscombe, N. R. & Wann, D.L. (1994). Collective self-esteem consequences of outgroup derogation when a valued social identity is on trial. *European Journal of Social Psychology, Vol. 24*, 641-657.
- Brewer, M.B. (1991). The social self: On being the same and different at the same time. *Personality and Social Psychological Bulletin, 17*, 475-482.
- Brown, R. (2000). Social Identity Theory: past achievements, current problems and future challenges. *European Journal of Social Psychology, 30*, 745-788.
- Brown, R., Condor, S., Mathews, A., Wade, G., & Williams, J. (1986). Explaining intergroup differentiation in an industrial organization. *Journal of Occupational Psychology, 59*, 273-286.
- Brown, R., Hinkle, S., Ely, P.G., Fox-Cardamone, L., Mara, P. & Taylor, L.A. (1992). Recognizing group diversity: Individualist collectivist and autonomousextraneous social orientations and their implications for intergroup processes. *British Journal of Social Psychology, 31*, 327-342.
- Brown, R. & Williams, J. (1984). Group identification: The same thing to all people? *Human Relations, Vol. 37, No. 7*, 547-564.
- Byrne, B. M. (2001). Structural equation modeling with AMOS: basic concepts, applications, and programming. Mahwah, NJ; USA: Lawrence Erlbaum Associates, Inc.

- 
- Cacioppo, J. T., Gardner, W. L., & Berntson, G. G. (1997). Beyond bipolar conceptualizations and measures: the case of attitudes and evaluative space. *Personality and Social Psychology Review, Vol. 1, No. 1, 3-25.*
- Christ, O., van Dick, R., Wagner, U., & Stellmacher, J. (2003). When teachers go the extra mile: Foci of organisational identification as determinants of different forms of organisational citizenship behaviour among schoolteachers. *British Journal of Educational Psychology, 73, 329-341.*
- Cialdini, R. B. & Trost, M. R. (1998). Social influence: Social norms, conformity and compliance. In D.T. Gilbert, S.T. Fiske & G. Lindzey (Eds.), *The Handbook of Social Psychology*. Volume two (pp. 151-182). Boston, USA: McGraw-Hill.
- Clayton, S. D., Crosby, F. J. (1992). *Justice, gender, and affirmative action*. Ann Arbor: University of Michigan Press.
- Cowan, G., Neighbors, C., DeLa Moreaux, J., & Behnke C. (1998). Women's hostility toward women. *Psychology of Women Quarterly, 22, 267-284.*
- Crosby, F. J. (1994). Understanding affirmative action. *Basic and Applied Social Psychology, 15(1 & 2), 13-41.*
- Crosby, F. J., Iyer, A., Clayton, S. D., & Downing, R. A. (2003). Affirmative action. Psychological data and the policy debates. *American Psychologist, Vol. 58, No. 2, 93-115.*
- Davies, P. G., Spencer, S. J., & Steele, C. M. (2005). Clearing the air: Identity safety moderates the effects of stereotype threat on women's leadership aspirations. *Journal of Personality and Social Psychology, Vol. 88, No. 2, 276-287.*
- Davison, H. K. & Burke, M. J. (2000). Sex discrimination in simulated employment contexts: A meta-analytic investigation. *Journal of Vocational Behaviour, Vol. 56(2), 225-248.*

- 
- DESTATIS (2003). Klassifikation der Wirtschaftszweige, Ausgabe 2003 (WZ 2003).  
Retrieved 11/23/2004 from [http:// www.destatis.de/download/d/klassif/wz03.pdf](http://www.destatis.de/download/d/klassif/wz03.pdf)
- DESTATIS (2005). Wenige Frauen in Führungspositionen. Pressemitteilung vom 22.03.2005.  
Retrieved 03/26/2005 <http://www.destatis.de/presse/deutsch/pm2005/p1370024.htm>
- Diekman, A. B., Eagly, A.H. (2000). Stereotypes as dynamic constructs: women and men of the past, the present, and the future. *Personality and Social Psychology, Bulletin*, 26, 1171-1181.
- De Beauvoir, S. (1951/1995). Das andere Geschlecht. Sitte und Sexus der Frau.  
Reinbek, Germany: Rowohlt
- Eagly, A. H., & Kite, M. E. (1987). Are stereotypes of nationalities applied to both women and men? *Journal of Personality and Social Psychology*, Vol. 53, No. 3, 451-462.
- Eagly, A. H., Mladinic, A., & Otto, S. (1991). Are women evaluated more favourably than men? *Psychology of Women Quarterly*, 15, 203-216.
- Eagly, A. H. & Steffen, V. J. (1984). Gender stereotypes stem from the distribution of women and men into social roles. *Journal of Personality and Social Psychology*, Vol. 46, No. 4, 735-754.
- Eisenbeiss, K. & Otten, S. (2004, paper submitted). A dynamic perspective on social identification: predictors and consequences of identification during group formation.
- Ellemers, N. (1993). The influence of socio-structural variables on identity management strategies. In W. Stroebe, & M. Hewstone (Eds.), *European review of social psychology*, vol. 4 (pp. 27-57). Chichester: Wiley.
- Ellemers, N. (2001). Social identity, commitment, and work behaviour. In M. A. Hogg & D. J. Terry (Eds.), *Social identity processes in organizational contexts* (pp. 101-114). Ann Arbor, MI: Sheridan Books.



- 
- Ellemers, N., Kortekaas, & Ouwerkerk, J. W. (1999). Self-categorization, commitment to the group and group self-esteem as related but distinct aspects of social identity. *European Journal of Social Psychology, 29*, 371-389.
- Ellemers, N., van den Heuvel, H., de Gilder, D., Maass, A., & Bonvini, A. (2004). The underrepresentation of women in science: Differential commitment or the queen bee syndrome? *British Journal of Social Psychology, 43*, 315-338.
- Ellemers, N., van Rijswijk, Roefs, M., & Simons, C. (1997). Bias in intergroup perceptions: Balancing group identity with social reality. *Personality and Social Psychology Bulletin, 23*, 2, 186-198.
- Ellemers, N., Spears, R., & Dossje, B. (2002). Self and social identity. *Annual Review of Psychology, 53*, 161-86.
- Ellis, C. & Sonnenfeld, J.A. (1994). Diverse approaches to managing diversity. *Human Resource Management, Vol. 33, 1*, 79-109.
- Ely, R. (1995). The power in demography: women's social constructions of gender identity at work. *Academy of Management Journal, Vol.38, No. 3*; 589-634.
- Engelbrech, G. (2004). Work-life-balance. Konzepte, Aktivitäten und Erfahrungen in der Praxis. *Personalführung, 9*, 54-65.
- Erst mittelfristig können Frauen mit gleicher Bezahlung rechnen. (6.11.2004). Frankfurter Allgemeine Zeitung, No. 260, p.55.
- Federal Glass Ceiling Commission (1995). Good for business: making full use of the nation's human capital. Retrieved 05/12/2005 from <http://www.mdcbowen.org/p2/rm/aa/GlassCeiling.pdf>.
- FFP (2002a) Frauenförderplan des Fachbereichs Wirtschaftswissenschaften der Universität Marburg. Retrieved 06/27/2005 from [http://www.wiwi.uni-marburg.de/ZentrEinr/Frauen/Infos/Free/FFP\\_FB02.pdf](http://www.wiwi.uni-marburg.de/ZentrEinr/Frauen/Infos/Free/FFP_FB02.pdf)

- 
- FFP (2002b) Frauenförderplan des Fachbereichs 5/Wirtschaftswissenschaften. Universität Paderborn. Retrieved 06/27/2005 from [http://www2.uni-paderborn.de/~mitteilungen/Frauenförderplan%20%20FB%205%2019\\_09\\_2001.pdf](http://www2.uni-paderborn.de/~mitteilungen/Frauenförderplan%20%20FB%205%2019_09_2001.pdf)
- Fishbein, M. & Ajzen, I. (1974). Attitudes towards objects as predictors of single and multiple behavioural criteria. *Psychological Review*, 81, 29-74.
- Fiske, S.T. (1998). Stereotyping, prejudice and discrimination. In: D.T. Gilbert, S.T. Fiske, & G. Lindzey (Eds.), *The handbook of social psychology*, Vol. 2 (pp. 357-411). New York: McGraw-Hill.
- Frauen in Chefetagen schwach vertreten. (20.1. 2005) Frankfurter Allgemeine Zeitung, No. 16, p. 11.
- Gilbert, D. T. (1995). Attribution and interpersonal perception. In A. Tesser (Ed.), *Advanced social psychology* (pp. 99-147). New York: McGraw-Hill.
- Gutek, B. A. (2001). Women and paid work. *Psychology of Women Quarterly*, 25, 379-393.
- Grieve, P. G. & Hogg, M. A. (1999). Subjective uncertainty and intergroup discrimination in the minimal group situation. *Personality and Social Psychology Bulletin*, 25, 926-940.
- Haddock, G. & Zanna, M. P. (1994). Preferring "housewives" to "feminists". Categorization and the favourability of attitudes toward women. *Psychology of Women Quarterly*, 18, 25-52.
- Hains, S. C., Hogg, M. A., & Duck, J. M. (1997). Self-categorization and leadership : effects of group prototypicality and leader stereotypicality. *Personality and Social Psychology bulletin*, Vol.23, No.10, 1087-1099.
- Heilman, M. E. (1983). Sex bias in work settings: the lack of fit model. *Research in Organizational Behaviour*, 5, 269-298.

- 
- Heilman, M. E. (1995). Sex stereotypes and their effects in the workplace: What we know and what we don't know. *Journal of Social Behaviour & Personality, Vol. 10(6). Special issue: Gender in the workplace. pp. 3-26.*
- Heilman, M. E. (2001). Description and prescription: how gender stereotypes prevent women's ascent up the organizational ladder. *Journal of Social Issues, Vol. 75, No. 4, 657-674.*
- Heilman, M. E., Simon, M. C., & Repper, D. P. (1987). Intentionally favoured, unintentionally harmed? Impact of sex-based preferential selection on self-perceptions and self-evaluations. *Journal of Applied Psychology, Vol. 72(1), 62-68.*
- Heilman, M. E., Wallen, A. S., Fuchs, D. & Tamkins, M. M (2004). Penalties for success: Reactions to women who succeed at male gender-taped tasks. *Journal of Applied Psychology, 89(3), pp. 416-427.*
- Hewstone, M., Rubin, M., & Willis, H. (2002). Intergroup bias. *Annual Review of Psychology, 53, 575-604*
- Hinkle, S. & Brown, R. (1990). Intergroup comparisons and social identity: some links and lacunae. In D. Abrams & M.A. Hogg (Eds.), *Social identity theory: Constructive and critical advances* (pp. 48-70). New York: Harvester Wheatsheaf.
- Hogg, M.A. (2000). Subjective uncertainty reduction through self-categorization: A motivational theory of social identity processes. In W. Stroebe & M. Hewstone (Eds.), *European Review of Social Psychology* (pp. 223-255). Chichester: John Wiley & Sons.
- Hogg, M. A. (2001a). Social Identity Theory of Leadership. *Personality and Social Psychology Review, Vol. 5, No. 3, 184-200.*
- Hogg, M. A. (2001b). Social identification, group prototypicality, and emergent leadership. In M. A. Hogg, & D. J. Terry (Eds.), *Social identity processes in organizational contexts* (pp. 197-212). Ann Arbor, MI: Sheridan Books.

- 
- Hogg, M. A., Cooper-Shaw, L., & Holzworth, D. W. (1993). Group prototypicality and depersonalized attraction in small interactive groups. *Personality and Social Psychology bulletin*, Vol. 19, No. 4, 452-465.
- Hogg, M. A. & Hardie, E. A. (1991). Social attraction, personal attraction and self-categorization: A field study. *Personality and Social Psychology bulletin*, Vol. 17, No. 2, 175-180.
- Hogg, M. A., Hains, S. C., & Mason, I. (1998). Identification and leadership in small groups: Salience, frame of reference, and leader stereotypicality effects on leader evaluations. *Journal of Personality and Social Psychology*, Vol. 75, No. 5, 1248-1263.
- Hogg, M. A. & Terry, D. J. (2001). Social Identity Theory and organizational processes. In M. A. Hogg & D. J. Terry (Eds.), *Social identity processes in organizational contexts* (pp. 1-12). Ann Arbor, MI: Sheridan Books.
- Hogg, M.A. & Turner, J.C. (1987). Intergroup behaviour, self-stereotyping and the salience of social categories. *British Journal of Social Psychology*, 26, 325-340.
- Hollbach, S. (2004). Selber doof! Auswirkungen von Metastereotypen auf Intergruppeneinstellungen. Dissertation an der Fakultät für Sozial- und Verhaltenswissenschaften: FSU Jena.
- Hornsey, M. J., & Hogg, M. A. (2000). Intergroup similarity and subgroup relations: some implications for assimilation. *Personality and Social Psychology bulletin*, Vol. 26, No. 8, 948-958.
- Hülsen, I. (2004). Diversity siegt über die Macho-Kultur. Förderung von Vielfalt in den Firmen macht Karriere. *Financial Times Deutschland, Wochenendausgabe vom 1.-3. Oktober 2004*, 2.
- IFM (2005). Mittelstand – Definition und Schlüsselahlen. Retrieved 07/02/2005 from <http://www.ifm-bonn.org/>

- 
- Jackson, J. W. (2002). Intergroup attitudes as a function of different dimensions of group identification and perceived intergroup conflict. *Self and Identity, 1*, 11-33.
- Jehn, K. A. (1999). Diversity, Conflict and Team Performance: Summary of Program of Research. *Performance Improvement Quarterly, 12* (1), 6 – 19.
- Jetten, J., Branscombe, N. R., & Spears, R. (2002). On being peripheral: effects of identity insecurity on personal and collective self-esteem. *European Journal of Social Psychology, 32*, 105-123.
- Jones, E. E. & Harris, V.A. (1967). The attribution of attitudes. *Journal of Experimental Social Psychology, 3*, 1-24.
- Kanter, R. M. (1977/1995). *Men and women of the corporation*. New York: Basic Books.
- Kashima, E. S., Kashima, Y., & Hardie, E. A. (2000). Self-typicality and group identification: evidence for their separateness. *Group Processes & Intergroup Relations, Vol. 3, No. 1*, 97-110.
- Kelly, C. (1988). Intergroup differentiation in a political context. *British Journal of Social Psychology, 27*, 319-332.
- Kelly, C. & Kelly, J. (1994). Who gets involved in collective action? Social psychological determinants of individual participation in trade unions. *Human Relations, Vol. 47*(1), 63-88.
- Kelly, C. & Breinlinger, S. (1996). *The social psychology of collective action: Identity, injustice and gender*. Philadelphia, PA, US: Taylor & Francis
- Kennedy Onassis, J. "I am a woman above everything else." Retrieved 08/03/2005 from <http://www.wisdomquotes.com/000786.html>

- 
- Kessler, T., & Mummendey, A. (2002). Sequential or parallel processes? A longitudinal field study concerning determinants of identity-management strategies. *Journal of Personality & Social Psychology*, Vol. 82, No. 1, 75-88.
- Klenner, C. (2004). Gender – ein Fremdwort für Betriebsräte? *WSI-Mitteilungen*, Heft 5, Düsseldorf.
- Knapp, G.-A. (2000). Achsen der Differenz – Strukturen der Ungleichheit. In R. Becker-Schmidt & G.-A. Knapp (Eds.), *Feministische Theorien zur Einführung* (pp., 103-123). Hamburg, Germany: Junius Verlag GmbH.
- Konrad, E. & Kranjčec, R. (1997). A comparison of implicit leadership theories of managers and students. *Review of Psychology*, Vol. 4, No. 1-2, 41-47.
- Küpper, G. (1994). Personalentwicklung für weibliche Führungskräfte? *Zeitschrift für Personalforschung*, Jg. 8, 2, 107-123.
- Krell, G. (1994). “Weiblicher Führungsstil” und “moderne Organisationskultur” – eine frauenförderliche Verbindung? *Zeitschrift Führung + Organisation*, 63, 6, 377-380.
- Krueger, J., & Clement, R.W. (1996). Inferring category characteristics from sample characteristics: Inductive reasoning and social projection. *Journal of Experimental Psychology: General*, Vol. 125, No.1, 52-68.
- Mathieu, J. E. & Zajac, D. M. (1990). A review and meta-analysis of the antecedents, correlates and consequences of organizational commitment. *Psychological bulletin*, Vol. 108, No. 2, 171-194.
- Martell, R. F., Parker, C., Emrich, C. G., & Crawford, M. S. (1998). *Journal of Social Behaviour & Personality*, Vol. 13, No. 1, 127-130.

- 
- Mezulis, A. H., Abramson, L. Y., Hyde, J. S., & Hankin, B. L. (2004). Is there a universal positivity bias in attributions? A meta-analytic review of individual, developmental, and cultural differences in the self-serving attributional bias. *Psychological Bulletin*, *Vol. 130, No. 5*, 711-747.
- Mlicki, P. P., & Ellemers, N. (1996). Being different or being better? National stereotypes and identification of Polish and Dutch students. *European Journal of Social Psychology*, *26*, 97-114.
- Moorman, R. H. (1991). Relationship between organizational justice and organizational citizenship behaviours: Do fairness perceptions influence employee citizenship? *Journal of Applied Psychology*, *76*, 845-855.
- Moorman, R. H., Niehoff, B. P., & Organ, D. W. (1993). Treating employees fairly and organizational citizenship behaviour: Sorting out the effects of job satisfaction, organizational commitment, and procedural justice. *Employee Responsibilities and Rights Journal*, *6*, 209-225.
- Mullen, B., Brown, R. & Smith, C. (1992). Ingroup bias as a function of salience, relevance, and status: An integration. *European Journal of Social Psychology*, *Vol. 22*, 103-122.
- Mummendey, A., Klink, A., & Brown, R. (2001). Nationalism and patriotism: National identification and out-group rejection. *British Journal of Social Psychology*, *40*, 159-172.
- Mummendey, A., Klink, A., Mielke, R., Wenzel, M., & Blanz, M. (1999a). Socio-structural characteristics of intergroup relations and identity management strategies: results from a field study in East Germany. *European Journal of Social Psychology*, *29*, 259-285.
- Mummendey, A., Kessler, T., Klink, A., & Mielke, R. (1999b), Strategies to cope with negative social identity: prediction by social identity theory and relative deprivation theory. *Journal of Personality and Social Psychology*, *Vol. 76, No. 2*, 229-245.

- 
- Mummendey, A. & Wenzel, M. (1999). Social discrimination and tolerance in intergroup relations: reactions to intergroup difference. *Personality and Social Psychology Review, Vol. 3, No. 2, 158-174.*
- Mummendey, A. & Schreiber, H. J. (1984). ‚Different‘ just means ‚better‘: Some obvious and some hidden pathways to in-group favouritism. *British Journal of Social Psychology, 23, 363-368.*
- Niehoff, B. P., & Moorman, R. H. (1993). Justice as a mediator of the relationship between methods of monitoring and organizational citizenship behaviour. *Academy of Management Journal, 36, 527-556.*
- Nosek, B. A., Banaji, N. M., & Greenwald, A. G. (2002). Math = male, me = female, therefore math  $\neq$  me. *Journal of Personality and Social Psychology, Vol. 83, No. 1, 44-59.*
- Oaker, G. & Brown, R. (1986). Intergroup relations in a hospital setting: A further test of Social Identity Theory. *Human Relations, Vol. 39, No. 8, 767-778.*
- Oakes, P. J., Haslam, S. A.; & Reynolds, K. J. (1999). Social categorization and social context: Is stereotype change a matter of information or of meaning? In D. Abrams & M. Hogg (Eds.), *Social Identity and Social Cognition* (pp. 55-79). Oxford, UK: Blackwell Publishers Ltd.
- Pasero, U. & Priddat, B. (2003). *Neue Führungsstile und das Glass Ceiling Phänomen: Ein Vergleich zwischen Organisationssystemen in Wirtschaft und Wissenschaft.* BmbF Forschungsbericht.
- Peeters, G. (1971). The positive-negative asymmetry: On cognitive consistency and positivity bias. *European Journal of Social Psychology, 1(4), 455-474.*
- Pettigrew, T. F. (1961). Social psychology and desegregation research. *American Psychologist, 26, 105-112.*



- 
- Podsakoff, P. M., Ahearne, M., & MacKenzie, S.B. (1997). Organizational citizenship behaviour and the quantity and quality of work group performance. *Journal of Applied Psychology, Vol. 82, No. 2, 262-270.*
- Podsakoff, P. M., MacKenzie, S. B., Moorman, R. H., & Fetter, R. (1990). Transformational leader behaviours and their effects on followers' trust in leader, satisfaction, and organizational citizenship behaviours. *Leadership quarterly, 1, 107-142.*
- Podsakoff, P. M., MacKenzie, S. B., Paine, J. B., & Bachrach, D. G. (2000). *Journal of Management, Vol. 26, No.3, 513-563.*
- Postmes, T. & Spears, R. (1998). Deindividuation and antinormative behaviour: A meta-analysis. *Psychological Bulletin, Vol. 123, No. 3, 238-259.*
- Postmes, T. & Spears, R., & Lea M. (2002). Intergroup differentiation in computer-mediated communication: effects of depersonalization. *Group Dynamics: Theory, Research, and Practice, Vol. 6, No. 1, 3-6.*
- Powell, G. N., Butterfield, D. A., & Parent, J. D. (2002). Gender and managerial stereotypes: have the times changed? *Journal of Management, 28(2), 177-193.*
- Pratkanis, A. R., & Turner, M. E. (1996). The proactive removal of discriminatory barriers: Affirmative action as effective help. *Journal of Social Issues, 52(4), 111-132.*
- Pratt, M.G. (1998). To be or not to be? Central questions in organizational identification. In D.A. Whetten & P.C. Godfrey (Eds.), *Identity in organizations. Building theory through conversations* (pp. 171-207). Thousand Oaks: Sage.
- Reagan, M. "When you get to the top, stay there and make sure other women join you."  
Retrieved 08/02/2005, from  
[http://womenshistory.about.com/od/morepoliticalfigures/a/maureen\\_reagan.htm](http://womenshistory.about.com/od/morepoliticalfigures/a/maureen_reagan.htm)
- Reichers, A. E. (1985). A review and reconceptualization of organizational commitment. *Academy of Management Review, 10, 465-476.*

- 
- Richards, Z. & Hewstone, M. (2001). Subtyping and subgrouping: Processes for the prevention and promotion of stereotype change. *Personality and Social Psychology Review, Vol. 5, No. 1*, 52–73.
- Riketta, M. (2002). Attitudinal organizational commitment and job performance: a meta-analysis. *Journal of Organizational Behaviour, 23*, 257-266.
- Riketta, M. (in press). Organizational identification: A meta-analysis. *Journal of Vocational Behaviour, in press*.
- Riketta, M. & van Dick, R.V. (in press). Foci of attachment in organizations: a meta-analytic comparison of the strength and correlates of workgroup versus organizational identification and commitment. *Journal of Vocational Behaviour, in press*.
- Robbins, J.M., & Krueger, J. I. (2005). Social projection to ingroups and outgroups: A review and meta-analysis. *Personality and Social Psychology Review, Vol. 9, No. 1*, 32-47.
- Rosch, E. & Mervis, C. B. (1975). Family resemblances: Studies in the internal structure of categories. *Cognitive Psychology, 7*, 573-605.
- Rosch, E., Mervis, C.B., Gray, W.D., Johnson, D.M., & Boyes-Braem, P. (1976). Basic objects in natural categories. *Cognitive Psychology, 8*, 382-439.
- Ross, L., Amabile, T. M., & Steinmetz, J. L. (1977). Social roles, social control and biases in social perception processes. *Journal of Personality and Social Psychology, 35*, 485-494.
- Ross, L., Greene, D., & House, P. (1977). The false consensus effect: An egocentric bias in social perception and attribution processes. *Journal of Experimental Social Psychology, 13*, 279-301.

- 
- Ross, M. W., Daneback, K., Månsson, S.-A., Tikkanen, R., & Cooper, A. (2003). Characteristics of men and women who complete or exit from an on-line internet sexuality questionnaire: a study of instrument dropout biases. *The Journal of Sex Research, Vol. 40, No. 4, 396-402.*
- Ruble, T. L., Cohen, R. & Ruble, D. N. (1984). Sex Stereotypes. Occupational barriers for women. *American Behavioural Scientist, Vol. 27, No. 3, 339-356.*
- Ryan, M. K. & Haslam, S. A. (2005). Evidence that women are over-represented in precarious leadership positions. *British Journal of Management, Vol. 16(2), 81-90.*
- Sarah. Kommentare unserer Leserinnen und Leser. (24.9. 2005) brigitte.de. Retrieved 10/04/2005 from [http://www.brigitte.de/job/karriere/interview\\_vossen/?p=2](http://www.brigitte.de/job/karriere/interview_vossen/?p=2)
- Schein, V. E. (1975). Relationships between sex role stereotypes and requisite management characteristics among female managers. *Journal of Applied Psychology, Vol. 60, No. 3, 340-344.*
- Schein, V. E. (2001). A global look at psychological barriers to women's progress in management. *Journal of Social Issues, Vol. 57, No. 4, 675-688.*
- Schaeffer-Hegel, B. (2000). Strategien zur Erlangung der Macht. In A. Schwarzer (Ed.), *Man wird nicht als Frau geboren (pp. 205-210)*. Köln, Germany: Kiepenheuer & Witsch.
- Schmader, T., Johns, M., & Barquissau, M. (2004). The costs of accepting gender differences: The role of stereotype endorsement in women's experience in the math domain. *Sex Roles, Vol. 50., Nos. 11/12, 835-850.*
- Schrupp, A. (1997). Sich von der Macht verabschieden. Differenzfeminismus – für die Frauenbewegung eigentlich nichts Neues. *Schlangenbrut, 59, 23-27.*
- Szczesny, S. (2003a). A closer look beneath the surface: various facets of the think-manager-think-male-stereotype. *Sex Roles, Vol. 49, Nos. 7/8, 353-363.*

- 
- Sczesny, S. (2003b). Führungskompetenz: Selbst- und Fremdwahrnehmung weiblicher und männlicher Führungskräfte. *Zeitschrift für Sozialpsychologie*, 34 (3), 133-145.
- Sczesny, S., & Stahlberg, D. (2002). The influence of gender-stereotyped perfumes on leadership attribution. *European Journal of Social Psychology*, 32, 815-828.
- Simon, B. & Mummendey, A. (1997). Selbst, Identität und Gruppe: Eine sozialpsychologische Analyse des Verhältnisses von Individuum und Gruppe. In A. Mummendey & B. Simon (Eds.), *Identität und Verschiedenheit. Zur Sozialpsychologie der Identität in komplexen Gesellschaften* (pp. 11-38). Bern, CH: Verlag Hans Huber.
- Simon, B., Loewy, M., Stürmer, S., Weber, U., Freytag, P. Habig, C., Kampmeier, C., & Spahlinger, P. (1998). Collective identification and social movement participation. *Journal of Personality and Social Psychology*, Vol. 74, No. 3, 646-658.
- Sigelman L. & Tuch, S. A. (1997). Meta-stereotypes: Black's perceptions of White's stereotypes of Blacks. *Public Opinion Quarterly*, 61, 87-101.
- Sheldon, K. M. & Johnson, J. T. (1993). Forms of social awareness: Theirs frequency and correlates. *Personality and Social Psychology Bulletin*, 19, 320-330.
- Smith, A. R. & Zarate, M. A. (1990). Exemplar and prototype use in social categorization. *Social Cognition*, Vol. 8, No. 3, 243-262.
- Sontag, S. (2005). A report on the journey. The New York Times. Retrieved 04/04, 2005. Nytimes.com
- Stangor, C. & Lange, J.E. (1994). Mental representations of social groups: advances in understanding stereotypes and stereotyping. *Advances in Experimental Social Psychology*, 26, 357-416.
- Staufenbiel, T. & Hartz, C. (2000). Organizational Citizenship Behaviour: Entwicklung und erste Validierung eines Meßinstruments. *Diagnostica*, Vol. 46, No. 2, 73-83.

- 
- Steele, J. (2003). Children's gender stereotypes about math: the role of stereotype stratification. *Journal of Applied Social Psychology, 33*(12), 2587-2606.
- Steins, G. & Wickenheiser, R. (1995). Konzepte von "Frau", "Selbst" und "Führung": Ein Vergleich zwischen Managerinnen und Betriebswirtschaftstudentinnen. *Zeitschrift für Arbeits- und Organisationspsychologie, 39*, 78-80.
- Stürmer, S., & Simon, B. (2004). Collective action: Towards a dual-pathway model. In W. Stroebe (Ed), *European review of social psychology*, Vol. 15 (pp. 59-99). Hove, England: Psychology Press/Taylor & Francis.
- Tajfel, H. (1978). *Differentiation between social groups*. London, UK: Academic Press.
- Tajfel, H., & Turner, J. (1979). An integrative theory of intergroup conflict. In W.G. Austin & S. Worchel (Eds.), *The social psychology of intergroup relations* (pp. 33-47). Monterey, CA: Brooks/Cole.
- Turner, J. C. (1999). Some current issues in research on social identity and self categorization theories. In N. Ellemers, R. Spears, & B. Doosje (Eds.), *Social Identity* (6-34). Oxford: Blackwell.
- Turner, J. C., & Onorato, R. S. (1999). Social identity, personality, and the self-concept: A self-categorization perspective. In T. R. Tyler, & M. R. Kramer (Eds.), *Psychology of the social self*. (pp. 11-46). Mahwah, US: Lawrence Erlbaum Associates.
- Turner, J. C., Hogg, M. A., Oakes, P. J., Reicher, S. D., & Wetherell, M.S. (1987). *Rediscovering the social group: A self-categorization theory*. Oxford, UK: Basil Blackwell.
- Turner, M. E. & Pratkanis, A. R. (1994). Affirmative Action as help: A review of recipient reactions to preferential selection and affirmative action. *Basic and applied social psychology, 15* (1&2), 43-69.
- Tyler, T. R. & Blader, S. L. (2001). Identity and cooperative behaviour in groups. *Group Processes & Intergroup Relations, Vol. 4*(3), 207-226.

- 
- Van Dick, R., Wagner, U., Stellmacher, J., & Christ, O. (2004). The utility of a broader conceptualization of organizational identification: Which aspects reality matter? *Journal of Occupational and Organizational Psychology, 77*, 171-191.
- Van Leeuwen, E., van Knippenberg, D., & Ellemers, N. (2003). Continuing and changing group identities: the effects of merging on social identification and ingroup bias. *Personality and Social Psychology bulletin, Vol. 29, No. 6*, 679-690.
- Van Knippenberg, D. (2000). Work motivation and performance: A social identity perspective. *Applied Psychology: An international perspective, 49*, 357-371.
- Van Knippenberg, D. & Haslam, S. A. (2003). Realizing the diversity dividend: Exploring the subtle interplay between identity, ideology and reality. In: S. A. Haslam, D. van Knippenberg, M. Platow, & N. Ellemers (Eds.), *Social Identity at Work: Developing theory for organizational practice* (pp. 61-77). New York: Taylor & Francis.
- Van Knippenberg, D., & van Schie, E. C. M. (2000). Foci and correlates of organizational identification. *Journal of Occupational and Organizational Psychology, 73*, 137-147.
- Veenstra, K., Haslam, S. A. (2000). Willingness to participate in industrial protest: exploring social identification in context. *British Journal of Social Psychology, 39*, 153-172.
- Vorauer, J. D., Hunter, A. J., Main, K. J., & Roy, S. A. (2000). Meta-stereotype activation: evidence from indirect measures for specific evaluative concerns experienced by members of dominant groups in intergroup interaction. *Journal of Personality and Social Psychology, Vol. 78, No. 4*, 690-707.
- Vorauer, J. D., Main, K. J., & O'Connell, G. B. (1998). How do individuals expect to be viewed by members of lower status groups? Content and implications of meta-stereotypes. *Journal of Personality and Social Psychology, Vol. 75, No. 4*, 917-937.
- Wagner, D. & Sepehri, P. (1999). Managing Diversity – alter Wein in neuen Schläuchen? *Personalführung, 5*, 18-21.

- 
- Waldzus, S., & Mummendey, A. (2004). Inclusion in a superordinate category, in-group prototypicality and attitudes towards out-groups. *Journal of Experimental Social Psychology, 40*, 466-477.
- Waldzus, S., Mummendey, A. & Wenzel, M. (2005). When „different“ means „worse“: In-group prototypicality in changing intergroup contexts. *Journal of Experimental Social Psychology, 41*, 76.83.
- Waldzus, S., Mummendey, A., Wenzel, M., & Boettcher, F. (2004). Of bikers, teachers and Germans: groups diverging views about their prototypicality. *British Journal of Social Psychology, 43*, 385-400.
- Waldzus, S., Mummendey, A., Wenzel, M., & Weber, U. (2003). Towards tolerance: representations of superordinate categories and perceived ingroup prototypicality. *Journal of Experimental Social Psychology, 39*, 31-47.
- Wattenmaker, W. D., Dewey, G. I., Murphy, T. D., & Medin, D. L. (1986). Linear separability and concept learning: Context, relational properties, and concept naturalness. *Cognitive Psychology, 18*, 158-194.
- Weber, U., Mummendey, A., & Waldzus, S. (2002). Perceived legitimacy of intergroup status differences: its prediction by relative ingroup prototypicality. *European Journal of Social Psychology, 32*, 449-470.
- Wenzel, M., Mummendey, A., Weber, U., & Waldzus, S. (2003). The ingroup as pars pro toto: projection from the ingroup onto the inclusive category as precursor to social discrimination. *Personality and Social Psychology bulletin, Vol. 29, No. 4*, 461-473.
- Williams, L. J. & Anderson, S. E. (1991). Job satisfaction and organizational commitment as predictors of organizational citizenship behaviours. *Journal of Management, 17*, 601-617.

- 
- Willemsen, T. M. (2002). Gender typing of the successful manager – a stereotype reconsidered. *Sex Roles, Vol. 46, Nos. 11/12, 385-391*.
- Whitton, C. (1963). Whatever women do, they must do twice as well as men do. Luckily this is not difficult. *Canada Month, June 1963*. Retrieved 08/02/2005 from <http://www.quotationspage.com/quote/30213.html>
- Wright, S. C., Tropp, L. R. (2002). Collective action in response to disadvantage: Intergroup perceptions, social identification, and social change. In I. Walker (Ed), *Relative deprivation: Specification, development, and integration* (pp. 200-236). New York, NY, US: Cambridge University Press.
- Xiao-tian, T. (1992, July). Changing female image. *China Woman, 16-18*.



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## Appendix

### ***Dependent measures– Study 1***

#### ***Identification with the superordinate category (business students in general)***

Ich betrachte mich den Studierenden der Betriebswirtschaftslehre zugehörig.  
Ich identifiziere mich mit den Studierenden der BWL.  
Ich finde es gut, zu den BWL-Studierenden zu gehören.  
Es ist für mich wichtig, den BWL-Studierenden anzugehören.

#### ***Ingroup identification (female business students)***

Ich betrachte mich der Gruppe der BWLerinnen zugehörig.  
Ich identifiziere mich mit den BWLerinnen.  
Ich finde es gut, zu den BWLerinnen zu gehören.  
Es ist mir wichtig, zu den BWLerinnen zu gehören.

#### ***Evaluation of the superordinate category***

Wie schätzen Sie BWL-Studierende insgesamt ein?

#### ***List of attributes***

##### *Typical male attributes*

karriereorientiert, leistungsstark, entschlosskräftig, geschäftstüchtig, analytisch, zielorientiert

##### *Typical female attributes*

kooperativ, aufgeschlossen, charmant, ehrlich, familienorientiert, vertrauenswürdig, sozial

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## ***Manipulation and dependent measures– Study 2 and Study 3***

### ***Example – high outgroup prototypicality***

#### Vorstudie: Brainstorming

In dieser Vorstudie für eine zukünftige Erhebung zum Thema „Soziale Integration und Leistung im Arbeitskontext“ geht es uns darum, Beschreibungen über Eigenschaften von Studierenden zu erhalten. Für dieses Brainstorming bitten wir Sie folgende Perspektive einzunehmen: bitte schreiben Sie Eigenschaften auf, die Studenten (männlich) zu untypischeren Studierenden machen als Studentinnen (weiblich).

Diese Eigenschaften können sowohl positiv als auch negativ sein. Nennen Sie so viele Eigenschaften wie Ihnen spontan einfallen, aber nicht mehr als drei.

Also: Aufgrund welcher Eigenschaften sind Studenten (männlich) typischere Studierende als Studentinnen (weiblich)?

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### ***Manipulation check – list of attributes***

*typical male attributes defined as positive and negative competence- and task-related characteristics:*

leistungsstark (+), analytisch (+), freizeitorientiert (-), zielorientiert (+).

*typical female attributes defined as positive and negative social skill- and team-related characteristics:*

kooperativ (+), aufgeschlossen (+), arrogant (-), ehrlich (+), faul(-).

***Identification with the superordinate category (students in general)***

Ich betrachte mich als den Studierenden zugehörig.  
Ich identifiziere mich mit den Studierenden.  
Ich finde es gut, zu den Studierenden zu gehören.  
Es ist für mich wichtig, den Studierenden anzugehören.  
Ich bedauere es, zu den Studierenden zu gehören.  
Ich fühle mich mit den Studierenden stark verbunden.  
Ich bin froh, zu den Studierenden zu gehören.  
Ich bin bereit, mich für die Belange von Studierenden einzusetzen, bzw. tue es bereits.  
Ich unterstütze alles, was die Situation von Studierenden verbessert.  
Ich habe vor, an Initiativen von Studierenden mitzuarbeiten, bzw. tue es bereits.  
Ich denke, dass die Gruppe der Studierenden wichtig ist.

***Identification with the ingroup (female students)***

Ich betrachte mich als den Studentinnen zugehörig.  
Ich identifiziere mich mit den Studentinnen.  
Ich finde es gut, zu den Studentinnen zu gehören.  
Es ist für mich wichtig, den Studentinnen anzugehören.  
Ich bedauere es, zu den Studentinnen zu gehören.  
Ich fühle mich mit den Studentinnen stark verbunden.  
Ich bin froh, zu den Studentinnen zu gehören.  
Ich bin bereit, mich für die Belange von Studentinnen einzusetzen, bzw. tue es bereits.  
Ich unterstütze alles, was die Situation von Studentinnen verbessert.  
Ich habe vor, an Initiativen von Studentinnen mitzuarbeiten, bzw. tue es bereits.  
Ich denke, dass die Gruppe der Studentinnen wichtig ist.

***Evaluation of the superordinate category***

Wie schätzen Sie die Studierenden insgesamt ein?

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## ***Dependent measures additionally used in Study 3***

### ***Intergroup differentiation***

Natürlich kommen viele Studentinnen gut mit ihren männlichen und ihren weiblichen Kommilitonen klar. Trotzdem spürt man vielleicht auch Unterschiede in der Sympathie. Um diese Präferenzunterschiede soll es hier gehen. Wir bitten Sie im Folgenden sich für eine der vorgegebenen Tendenzen zu entscheiden.

Es wäre schwierig in einer Arbeitsgruppe mit ausschließlich...

...männlichen Studenten zu arbeiten und zu lernen.

... weiblichen Studentinnen zu arbeiten und zu lernen.

### ***Collective engagement***

Ich bin bereit, durch meinen persönlichen Beitrag die Situation von Studentinnen zu verbessern.

Ich habe vor bzw. bin bereits dabei, mich an Initiativen von Studentinnen zu beteiligen.

Ich würde für eine Verbesserung der Situation von Studentinnen demonstrieren gehen.

Ich bin bereit bzw. bin bereits dabei, mich politisch für Studentinnen zu engagieren

### ***Networking***

Wir Studentinnen sollten unsere Ausbildungssituation durch eine gemeinsame Initiative verbessern.

Wir Studentinnen sollten uns in Netzwerken organisieren, um uns gemeinsam bessere Studienmöglichkeiten zu schaffen

### ***Solidarity in favour of the ingroup***

Im Leben gibt es oft Situationen, in denen man sich zwischen zwei gleich positiven Alternativen entscheiden muss. Wir bitten Sie nun sich in folgende zwei Situationen hineinzuversetzen und sich jeweils für eine Alternative zu entscheiden. Bitte kreuzen Sie die Zahl auf der Skala von -3 bis +3 an, die Ihrer Tendenz am ehesten entspricht

1. Wenn ein Professor einer Studentin eine ungerechte Note erteilt, würde ich mich mit anderen.....

...auf jeden Fall mit Studierenden zusammentun, um dagegen zu protestieren.

...auf jeden Fall mit Studentinnen zusammentun, um dagegen zu protestieren.

2. Wenn eine Studentin im Seminar lächerlich gemacht wird, würde ich sie zusammen mit anderen.....

...auf jeden Fall mit Studierenden verteidigen.

...auf jeden Fall mit Studentinnen verteidigen.

## **Dependent measures - Study 4**

### ***List of attributes***

*Typical male employee attributes were defined as positive and negative task-related characteristics*

karriereorientiert (+), autoritär (-), unorganisiert (-) selbstsicher (+), analytisch (+), dominant (-).

*Typical female employee attributes were conceptualized as positive and negative social and team-related characteristics*

kooperativ (+), intolerant (-), kollegial (+), unflexibel (-), aufgeschlossen (+), freizeitorientiert (-).

### ***Identification with the superordinate category (employees of the organization)***

Ich fühle mich mit der Mitarbeiterschaft stark verbunden.

Ich finde es gut, zu der Mitarbeiterschaft dieser Organisation zu gehören.

Ich betrachte mich als der Mitarbeiterschaft dieser Organisation zugehörig.

Ich identifiziere mich mit der Mitarbeiterschaft dieser Organisation.

Ich bin froh, dass ich bei dieser Organisation arbeite.

Ich bin bereit, für die Interessen der Mitarbeiterschaft dieser Organisation einzutreten.

Der Mitarbeiterschaft dieser Organisation anzugehören, ist wichtig für mich.

Ich unterstütze alles, was die Position der Mitarbeiterschaft dieser Organisation verbessert.

Ich bin bereit, mich für die Mitarbeiterschaft dieser Organisation einzusetzen.

### ***Identification with the ingroup (female employees of the organization)***

Ich fühle mich mit den Mitarbeiterinnen stark verbunden.

Ich finde es gut, zu den Mitarbeiterinnen zu gehören.

Ich betrachte mich als den Mitarbeiterinnen zugehörig.

Ich identifiziere mich mit den Mitarbeiterinnen.

Ich bin froh, dass ich mit den Mitarbeiterinnen in der Organisation arbeite.

Ich bin bereit, für die Interessen der Mitarbeiterinnen einzutreten.

Den Mitarbeiterinnen anzugehören, ist wichtig für mich.

Ich unterstütze alles, was die Position der Mitarbeiterinnen in der Organisation verbessert.

Ich bin bereit, mich für die Mitarbeiterinnen in der Organisation einzusetzen.

### ***Evaluation of the superordinate category***

Wie schätzen Sie die Mitarbeiterschaft in der Organisation insgesamt ein?

***Intergroup differentiation***

Ich würde es gut finden in einer Arbeitsgruppe mit ausschließlich  
...männlichen Mitarbeitern zu arbeiten.  
...weiblichen Mitarbeiterinnen zu arbeiten.

Es wäre schwierig in einer Arbeitsgruppe mit ausschließlich  
...männlichen Mitarbeitern zu arbeiten.  
...weiblichen Mitarbeiterinnen zu arbeiten.

***Collective engagement***

Ich wäre bereit, mich zur Repräsentantin der Mitarbeiterinnen wählen zu lassen.  
Ich würde für eine Verbesserung der Situation von Mitarbeiterinnen in der Organisation  
öffentlich eintreten.  
Ich bin bereit, mich bei organisationsinternen Aktionen für Mitarbeiterinnen zu engagieren.

***Networking***

Wir Mitarbeiterinnen sollten...  
...unsere Situation in der Organisation durch eine gemeinsame Initiative verbessern.  
...uns in Netzwerken organisieren, um uns gemeinsam bessere Möglichkeiten in der  
Organisation zu schaffen.  
...uns gegenseitig unterstützen, um uns bessere Chancen zu ermöglichen.

***In-role behaviour***

Ich erfülle meine Arbeitspflichten angemessen.  
Ich komme den Verpflichtungen meiner Arbeitsbeschreibungen nach.  
Ich führe die Aufgaben aus, die erwartet werden.  
Ich erfülle die mir gesetzten Leistungsanforderungen.

***Altruism***

Überlasteten Kollegen und Kolleginnen helfe ich freiwillig über das von mir erwartete Maß  
hinaus.  
Ich helfe freiwillig neuen Mitarbeitern und Mitarbeiterinnen bei der Einarbeitung.  
Bei Meinungsverschiedenheiten im Kollegium wirke ich ausgleichend.  
Ich ermuntere Kollegen und Kolleginnen, die niedergeschlagen sind.

***Conscientiousness***

Ich informiere frühzeitig, wenn ich nicht zur Arbeit kommen kann.  
Ich weise wenige Fehlzeiten auf.  
Ich nehme nur dann frei, wenn es äußerst dringend ist.

## Summary

The present dissertation thesis dealt with the social-psychological factors and implications of the so called „glass ceiling“ phenomenon which metaphorically describes the systematic underrepresentation of women in management positions. Gender stereotypes have been discussed to be one reason for this numerical imbalance of women and men in leadership positions (Bischoff, 1999; Federal Glass Ceiling Commission, 1995). Research has demonstrated that people hold traditionally stereotypical views about women and men at work while at the same time associating managerial roles more readily with typical male than with typical female features (Martell et al., 1998; Powell et al., 2002). In consequence, women are perceived as not fitting equally well at work as men do, thus there is a lack fit of women at work (Heilman, 1983, 1995, 2001). Lack of fit has been shown to be related to performance evaluations and recruiting decisions that discriminate against women (Heilman, 2001; Heilman et al., 2004; Sczesny & Stahlberg, 2002). However, a central assumption of the presented research was that women do not merely mismatch leadership stereotypes but moreover that they are lacking fit to the organizational culture which is represented by a prototype. This more general lack of fit is likely to be broadly effective in everyday interaction at work and thus to affect women themselves, their group-based self-definition and subsequent behavioural strategies at work.

The aim of the present work was twofold. First, it intended to describe the processes that lead to the perception of women lacking fit at work. Second and most importantly, it intended to address the implications of perceived lack of fit on women themselves, their group-based self-definition and their behavioural strategies at work. More precisely, this second research question was thought to shed some light on the conditions under which women engage in collective behaviour in favour of the ingroup (e.g., networking) and thus, collectively challenge power relations at work, as well as engage in favour of the organization as a whole (e.g., organizational citizenship behaviour).

These research questions were addressed within the framework of the Ingroup Projection Model (IPM, Mummendey & Wenzel, 1999). The IPM is a cognitive motivational model, which makes assumptions about the underlying processes resulting in the perception of different degrees of fit of two social groups in relation to a third inclusive social category (relative group prototypicality). This approach allows integrating propositions of research on gender stereotypes (Diekmann & Eagly, 2000; Eagly & Kite, 1987; Sczesny, 2003a), the lack of fit model (Heilman, 1983, 1995, 2001) and the power of organizational prototypes (Hogg

2001a, 2001b) as well as connecting it with research in the tradition of the Social Identity Approach (Tajfel, 1978; Tajfel & Turner, 1979; Turner et al., 1987). The first research aim was to describe the processes that lead to the perception of a lack of fit of women at work. Drawing on assumptions of research on gender stereotypes (Diekmann & Eagly, 2000; Eagly & Kite, 1987; Sczesny, 2003b) it was hypothesized that females and males are perceived to be typical on different dimensions (i.e., task- versus team-orientation). Thus, males and females are perceived to be mutually typical in different areas. Despite this assumed mutual typicality it was hypothesized that males and females are not perceived as to complement each other at work, thus as being mutually prototypical (cf., Krell, 1994). Instead, drawing on assumptions of the IPM, it was predicted that females are perceived as being low in relative group prototypicality and thus as lacking fit with regard to the organizational standard.

The second research aim was to test for implications of perceived relative group prototypicality (high fit vs. lack of fit) on ingroup identification and subsequent behavioural strategies. Drawing from research on self-prototypicality (Eisenbeiss & Otten, paper submitted; Kashima et al., 2000) and organizational identification (van Knippenberg & van Schie, 2000) it was argued that group-prototypicality affects ingroup identification. It was predicted that relatively high ingroup prototypicality leads to higher ingroup identification compared to relatively high outgroup prototypicality and equal subgroup prototypicality. Research in the tradition of SIT (Tajfel, 1978; Tajfel & Turner, 1979) has shown that ingroup identification is a key variable predicting intergroup differentiation, collective behaviour in favour of the ingroup as well as organizational behaviour. As the current research model predicts that relative group prototypicality affects ingroup identification it is furthermore hypothesized that relative group prototypicality indirectly affects intergroup differentiation, collective behaviour in favour of the ingroup and organizational behaviour.

Four studies were conducted to test the outlined hypotheses. Two correlational studies shed some light on the assumed underlying processes that lead to the perception of lack of fit (relative group prototypicality). Study 1 (N = 84) was set up within the student context and found support for the hypothesis that male and female students are perceived to be mutually typical on different dimensions (task- versus team-dimension). Moreover, results provided evidence that both gender groups were indeed not perceived to be mutually prototypical on these dimensions. Instead, females were consensually perceived as being low in relative group prototypicality, i.e., as lacking fit within the student context. In order to test the applicability of these results to the field, Study 4 (N = 238) was conducted with a sample of female employees. Empirical evidence replicated the finding of Study 1 that male and



female employees are perceived to be mutually typical but not to be mutually prototypical with regard to task- and team-orientation. Furthermore, results indicated that in organizations in which women constitute equal or less than 50% of the staff, female employees were perceived as being low in relative group prototypicality (lack of fit). However, in organizations in which women constitute more than 50% of the staff, female employees were perceived to be high in relative group prototypicality (high fit).

Study 1 to Study 4 were conducted to test the hypothesis that relative group prototypicality affects ingroup identification and subsequent behavioural strategies in correlational and experimental studies. Study 1 tested the hypothesis that relative group prototypicality and ingroup identification are positively correlated. However, results did not support this assumption which might be due to some methodological drawbacks of this first study. Study 2 (N = 68) experimentally tested the hypothesis that relative high group prototypicality leads to stronger ingroup identification compared to relative high outgroup prototypicality and equal prototypicality. Results are indeed in line with this prediction. Study 3 (N = 103) aimed at experimentally replicating and extending this result. More precisely, it tested for indirect effects of relative group prototypicality on intergroup differentiation and collective behavioural strategies in favour of the ingroup. Results were in line with these assumptions. Finally, Study 4 (N = 238) was set up to test the applicability of the developed research model within the field. Thus, the hypotheses were tested that relative group prototypicality is positively related to ingroup identification and indirectly affects intergroup differentiation, collective behavioural strategies in favour of the ingroup as well as organizational behaviour. A path-analytic model empirically supported these predictions.

Summing up, the presented research shed some light on the perception of a lack of fit of women at work and its resulting consequences on women themselves. Hence, it develops further the proposition that the “glass ceiling” phenomenon is based on gender stereotypes. It gives some insights under which conditions women are willing to collectively challenge status relations at work. Therefore, practical implications with regard to human resource management can be drawn from this research. Furthermore, the integrative theoretical approach of this research enlarges the perspective on gender relations at work. It provides implications for research on gender stereotypes as well as intergroup research. Most importantly, it undertakes a first step in the further theory development of the IPM, by showing that relative group prototypicality affects ingroup identification and subsequent behavioural strategies.

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## Zusammenfassung

In der vorliegenden Dissertation wurden die sozialpsychologischen Faktoren und Auswirkungen des so genannten „glass ceiling“ Phänomens untersucht. Die Metapher „glass ceiling“ steht für die systematische Unterrepräsentation von Frauen in Management Positionen. Geschlechtsstereotype werden in der Forschung als ein Ursachenfaktor dieses numerischen Ungleichgewichts von Frauen und Männern in Führungspositionen diskutiert (Bischoff, 1999; Federal Glass Ceiling Commission, 1995). Studien konnten belegen, dass traditionelle Geschlechtsstereotype bei der Wahrnehmung und Bewertung von Männern und Frauen am Arbeitsplatz wirksam werden, d.h. Männer gelten nach wie vor als eher analytisch und durchsetzungsfähig während Frauen eher als teamorientiert und kooperativ wahrgenommen werden. Gleichzeitig werden Führungsaufgaben stärker mit vermeintlich typisch männlichen als mit vermeintlich typisch weiblichen Attributen assoziiert (Martell et al., 1998; Powell et al., 2002). Daraus resultiert, dass Frauen als weniger geeignet für Führungsaufgaben wahrgenommen werden; Frauen scheinen weniger gut zu diesen Arbeitsanforderungen zu passen als Männer. Dieses Phänomen wird in der Forschungsliteratur auch als „lack of fit“ bezeichnet (Heilman, 1983, 1995, 2001). Die Wahrnehmung eines „lack of fit“ für Frauen ist eng mit schlechteren Leistungsbewertungen von Frauen und benachteiligenden Einstellungsentscheidungen verbunden (Heilman, 2001; Heilman et al. 2004; Sczesny & Stahlberg, 2002). Zentrale Annahme der vorliegenden Arbeit ist, dass Frauen nicht nur weniger gut in Führungspositionen hineinzupassen scheinen, sondern auch insgesamt auch scheinbar weniger gut in die Organisationskultur, d.h. zum Bild des prototypischen organisationalen Mitarbeiters passen. Ein solcher allgemeiner „lack of fit“ sollte in alltäglichen Interaktionen am Arbeitsplatz spürbar werden und daher auch auf das Selbstverständnis von Frauen, ihr Erleben und Verhalten in der Organisation rückwirken.

Die vorliegende Arbeit verfolgt zwei Ziele. Zum einen sollen die psychologischen Prozesse, die zu der Wahrnehmung, dass Frauen weniger gut in die Organisationskultur passen („lack of fit“) beschrieben werden. Zum anderen, sollen die Auswirkungen des „lack of fit“ auf Frauen, ihr Selbstverständnis in Bezug zu Kolleginnen sowie ihre Verhaltensstrategien am Arbeitsplatz (d.h. Intergruppen-Differenzierung, kollektives Verhalten zugunsten der Eigengruppe – Mitarbeiterinnen - und zugunsten der Organisation) untersucht werden. Diese zweite Forschungsfrage steht im Fokus der Dissertation. Sie soll klären unter welchen Bedingungen Frauen kollektiv die gegebenen geschlechtsbedingten Status- und Machtverhältnisse in Organisationen hinterfragen.

Diese Forschungsziele wurden im Rahmen des Eigengruppen Projektionsmodells (EGPM, Mummendes & Wenzel, 1999) konzeptionalisiert. Das EGPM ist ein kognitiv motivationales Modell, in dem Annahmen über die zugrunde liegenden Prozesse unterschiedlicher „Fit“-Wahrnehmungen in Bezug auf zwei soziale Gruppen (relative Gruppenprototypikalität) getroffen werden. Dieser Forschungsansatz erlaubt es auch Annahmen aus der Geschlechtsstereotypforschung (Diekman & Eagly, 2000; Eagly & Kite, 1987; Sczesny, 2003a), dem „lack of fit“ Modell (Heilman, 1983, 1995, 2001) und der Forschung zu organisationalen Prototypen (Hogg 2001a, 2001b) zu integrieren. Gleichzeitig wird ein Bezug zur Forschungstradition des Soziale Identitätsansatzes (Tajfel, 1978; Tajfel & Turner, 1979; Turner et al., 1987) hergestellt.

In einem ersten Schritt sollten die Prozesse beschrieben werden, die zu der Wahrnehmung führen, dass Frauen weniger gut in Organisationskulturen passen. In Anlehnung an die Geschlechtsstereotypforschung (Diekman & Eagly, 2000; Eagly & Kite, 1987; Sczesny, 2003b) wurde angenommen, dass Frauen typischerweise als eher teamorientiert und Männer typischerweise als eher aufgabenorientiert wahrgenommen werden. Männer und Frauen werden also als reziprok typisch für unterschiedliche Bereiche wahrgenommen (engl., mutual typicality). Trotz dieser wechselseitigen Typikalität werden Frauen und Männer nicht als sich ergänzend in der Organisation wahrgenommen. Männer werden mit den ihnen zugeschriebenen Eigenschaften als typischerer Repräsentanten der Organisation gesehen. In Worten des Eigengruppenprojektionsmodell werden Männer und Frauen nicht als gleichermaßen prototypisch auf unterschiedlichen Dimensionen für die Organisation wahrgenommen (siehe auch, Krell, 1994). Frauen werden stattdessen mit den ihnen zugeschriebenen Eigenschaften als weniger relativ prototypisch wahrgenommen im Vergleich zu Männern.

Das zweite Forschungsziel bezog sich auf die Konsequenzen von wahrgenommener relativer Gruppenprototypikalität (hoher vs. niedriger Fit) auf die Eigengruppenidentifikation und auf Verhaltensstrategien. In Anlehnung an Forschung zur Selbst-Prototypikalität (Eisenbeiss & Otten, paper submitted; Kashima et al., 2000) und zur organisationalen Identifikation (van Knippenberg & van Schie, 2000) wurde angenommen, dass Gruppenprototypikalität Eigengruppenidentifikation beeinflusst. Relative hohe Eigengruppenprototypikalität sollte zu höherer Eigengruppenidentifikation führen im Vergleich zu relative hoher Fremdgruppenprototypikalität und gleicher Subgruppenprototypikalität. Die Forschungstradition um die Theorie der Sozialen Identität (Tajfel, 1978; Tajfel & Turner, 1979) hat gezeigt, dass Eigengruppen Identifikation eine

zentraler Prädiktor für Intergruppendifferenzierung, kollektives Verhalten zugunsten der Eigengruppe und organisationales Verhalten ist.

Diese Forschungsfragen wurden in vier Studien untersucht. Zwei korrelative Studien bilden die angenommen Prozesse ab, die zu der Wahrnehmung eines lack of fit (relativer Eigengruppenprototypikalität) führen. Studie 1 (N = 84) wurde im Studierendenkontext durchgeführt und unterstützt die Hypothese, dass männliche Studenten und weibliche Studentinnen als reziprok typisch in Bezug auf unterschiedliche Dimensionen (Aufgaben- vs. Teamorientierung) wahrgenommen werden. Die Studienergebnisse zeigen jedoch auch, dass männliche und weibliche StudentInnen auf diesen Dimensionen nicht als reziprok prototypisch wahrgenommen werden. Stattdessen wurden Studentinnen im Vergleich zu Studenten von männlichen wie weiblichen Versuchspersonen als weniger relativ prototypische Studierende wahrgenommen; d.h. unabhängig von den stereotyp zugeschriebenen Attributen werden Studentinnen als weniger passend innerhalb des Studierendenkontext wahrgenommen als männliche Studenten („lack of fit“). Studie 4 (N = 238) wurde an einer Stichprobe von weiblichen Mitarbeiterinnen erhoben. Diese Studie repliziert zentrale Befunde von Studie 1. Männliche Mitarbeiter und weibliche Mitarbeiterinnen werden als reziprok typisch, aber nicht als reziprok prototypisch in Bezug auf Aufgaben- und Teamorientierung in der Organisation wahrgenommen. Darüber hinaus zeigen die Ergebnisse, dass Mitarbeiterinnen in Organisationen, in denen Frauen 50% oder weniger der Belegschaft ausmachen, als relativ niedrig prototypisch in der Organisation („lack of fit“) wahrgenommen werden. In Organisationen, in denen Frauen mehr als 50% der Belegschaft stellen, werden weibliche Mitarbeiterinnen als relativ hoch prototypisch wahrgenommen („high fit“).

Die Studien 1 bis 4 wurden durchgeführt, um die Hypothese, dass relative Gruppenprototypikalität Eigengruppenidentifikation und Verhaltensstrategien beeinflusst, in korrelativen und experimentellen Studien zu testen. Studie 1 prüfte die Hypothese, dass relative Gruppenprototypikalität und Eigengruppen Identifikation positiv korreliert sind. Die Ergebnisse der ersten Studie belegen diese Annahme nicht. Dafür sind wahrscheinlich methodische Schwächen im Studien- und Fragebogendesign verantwortlich. Studie 2 prüfte experimentell die Hypothese, dass hohe relative Eigengruppenprototypikalität (hoher fit) zu stärkerer Eigengruppenidentifikation führt im Vergleich zu relativ hoher Fremdgruppenprototypikalität („lack of fit“) und ausgeglichener Subgruppenprototypikalität (gleicher fit). Die Studienergebnisse unterstützen diese Annahme. Studie 3 (N = 103) zielte darauf ab, diesen Effekt experimentell zu replizieren und zu erweitern. Daher wurde getestet,

ob relativ hohe Eigengruppenprototypikalität indirekt, d.h. über die erhöhte Eigengruppenidentifikation, die Intergruppendifferenzierung und die kollektiven Verhaltensstrategien zugunsten der Eigengruppe beeinflussen. Diese Vorhersagen wurden durch die Studienergebnisse unterstützt. Ziel von Studie 4 (N = 238) war es, die Anwendbarkeit des entwickelten Forschungsmodells auf reale Bedingungen im Feld zu überprüfen. Es wurde also die Hypothese getestet, dass relative Gruppenprototypikalität positiv mit der Eigengruppenidentifikation korreliert ist und indirekt Intergruppendifferenzierung, kollektive Verhaltensstrategien zugunsten der Eigengruppe sowie organisationales Verhalten beeinflussen. Im Pfadmodell finden diese Hypothesen empirische Bestätigung.

Die vorliegende Forschungsarbeit gibt Aufschluss über die Prozesse, die zur Wahrnehmung eines „lack of fit“ für Frauen in der Organisation führen und die daraus resultierenden Konsequenzen für Frauen. Damit erweitert sie den Erklärungsansatz, wonach das so genannte „glass ceiling“ Phänomen durch traditionelle Geschlechtsstereotype getragen wird. Sie lässt Rückschlüsse zu, unter welchen Bedingungen Frauen bereit sind, gemeinsam geschlechtsbedingte diskriminierende Statusbedingungen zu hinterfragen und sich in Netzwerken und Diversity Management Initiativen zu engagieren. Aus den Ergebnissen der Arbeit lassen sich Konsequenzen für Personalmanagement und –politik ableiten. Darüber hinaus erweitert die Arbeit den Blick auf die Geschlechtsstereotypforschung und hat Implikationen für die Intergruppenforschung. Sie stellt einen ersten Schritt in der theoretischen Weiterentwicklung des Eigengruppenprojektionsmodells dar, in dem sie zeigt, dass relative Gruppenprototypikalität Eigengruppenidentifikation und Verhaltensstrategien beeinflusst.

## Lebenslauf

Name		Ilga Ingeborg Vossen
Geburtsdatum		30. Juni 1974 in Aachen
Familienstand		ledig
Bildungsweg	08/80 – 06/84	Grundschule Mützenich
	08/84 – 05/93	St. Michael Gymnasium Monschau
	06/93	Abitur
	10/93 – 07/96	Rheinische Friedrich-Wilhelms-Universität Bonn
	08/96 – 04/97	University of British Columbia, Vancouver, Kanada
	10/97 – 04/00	Rheinische Friedrich-Wilhelms-Universität Bonn
	04/00	Diplom in Psychologie
Berufserfahrung	04/00 – 03/01	Carl Duisberg Gesellschaft, ASA, Berlin; Compagnie Malienne de Textiles, Kita, Mali „Organisation traditioneller Frauengruppen in Mali“ - Forschungsstipendium
	05/01 – 09/02	Fraunhofer Institut für Arbeitswirtschaft und Organisation, Stuttgart Wissenschaftliche Mitarbeiterin, Beraterin
	10/02 – 09/05	International Graduate College „Conflict and Cooperation between groups“, Jena Forschungsstipendium zur Promotion

Ort, Datum

Unterschrift

## Ehrenwörtliche Erklärung

Hiermit erkläre ich, dass mir die Promotionsordnung der Fakultät für Sozial- und Verhaltenswissenschaften an der Universität Jena bekannt ist.

Weiterhin, erkläre ich, dass ich die vorliegende Dissertation selbst und ohne unzulässige Hilfe Dritter angefertigt habe. Alle benutzten Hilfsmittel und Quellen sind in der Arbeit angegeben. Bei der Durchführung der empirischen Studien haben mir folgende Personen in der jeweils beschriebenen Weise geholfen:

1. Bei der Rekrutierung von Versuchspersonen für Studie 1 halfen Katrin Wodzicki und Doreen Menzel unentgeltlich mit.
2. Bei der Rekrutierung von Versuchspersonen für Studie 2 half Susanne Quadflieg unentgeltlich mit.
3. Die Rekrutierung von Versuchspersonen und die Durchführung von Studie 3 wurden von Tobias Raabe unentgeltlich unterstützt.

Weitere Personen waren an der inhaltlich-materiellen Erstellung der Arbeit nicht beteiligt. Ich habe weder die Hilfe eines Promotionsberaters in Anspruch genommen, noch haben Dritte unmittelbar oder mittelbar geldwerte Leistungen von mir für Arbeiten erhalten, die im Zusammenhang mit dem Inhalt der Dissertation stehen.

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

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

Ort, Datum

Unterschrift