Regulatory Fit from Stereotype Threat:

Enhancing Women's Leadership Aspirations

Inauguraldissertation

zur Erlangung des akademischen Grades einer

Doktorin der Sozialwissenschaften (Dr. rer. soc.)

der

Universität Mannheim

vorgelegt an der

Fakultät für Sozialwissenschaften

in dem Promotionsfach

Psychologie

Vorgelegt von

Dipl.-Psych. Anke Görzig

April 2008

Dekan der Fakultät für Sozialwissenschaften:

Prof. Dr. Josef Brüderl, Universität Mannheim

1. Gutachter: Prof. Dr. Herbert Bless, Universität Mannheim

2. Gutachterin: Prof. Dr. Dagmar Stahlberg, Universität Mannheim

Tag der Disputation: 11. Juli 2008

ACKNOWLEDGEMENTS

ABSTRACT

Regulatory Fit from Stereotype Threat:

Enhancing Women's Leadership Aspirations

Anke Görzig

A series of studies investigates the impact of regulatory fit on women's leadership aspirations. A regulatory fit occurs when an outcome is presented in gain frames under a promotion focus and in loss frames under a prevention focus. Combining research on regulatory focus and research on stereotype threat it is argued that regulatory fit may result from stereotype threat (loss frame) under a prevention focus and from the absence of stereotype threat (gain frame) under a promotion focus. In line with previous research it is proposed that regulatory fit a) enhances motivation (Studies 1 and 2) and b) creates a *feeling right* experience that increases the persuasiveness of external stimuli (Study 3). In all three experiments regulatory fit was operationalized as experiencing stereotype threat when under a prevention focus or, respectively, experiencing the absence of stereotype threat when under a promotion focus. Further, women's aspirations to engage in a leadership role were assessed. In Studies 1 and 2 it was shown that women's motivation to occupy a leadership role was enhanced in the regulatory fit conditions compared to women in the nonfit conditions. Study 3 demonstrated that a stimulus (i.e., role model) was more persuasive under regulatory fit. Women experiencing regulatory fit compared to women in the nonfit conditions were more persuaded by role models, showing more interest in a leadership role when confronted with a positive model and less interest when confronted with a negative model. These studies show that stereotype threat can elicit regulatory fit, which in turn affects women's leadership aspirations. Future directions and limitations are discussed.

TABLE OF CONTENTS

INTRODUCTION

> "We women are not made for governing and if we are good women, we must dislike these masculine occupations; but there are times which force one to take interest in them mal gré bon gré, and I do, of course, intensely."
>
> - Victoria, British monarch
> (Queen of Great Britain and Ireland, 1837-1901),
> *Letter to Leopold I, King of the Belgians*, Feb. 3, 1852

> "No woman in my time will be Prime Minister or Chancellor or Foreign Secretary - not the top jobs. Anyway I wouldn't want to be Prime Minister. You have to give yourself 100%."
>
> - Margaret Thatcher, British Conservative politician
> (British Prime Minister, 1979-1990),
> *Interview in Sunday Telegraph,* London, Oct. 26, 1969

Two women, primary political leaders of their country, more than a century apart and yet their statements have something in common. Both note that a leadership post is a masculine occupation not appealing to women of their time, nonetheless both are genuinely and intensely or 100% committed to their leadership position. Of course the examples given above are grand exceptions with regard to women's career paths. However, even though stereotypically masculine occupations are male dominated this does not always mean that they are solely aspired by men (e.g., European Commission, 2007). But what makes women withdraw from stereotypically masculine occupations and why do some women despite the masculine stereotype still aspire those careers?

The basic root of the research proposed in this thesis is the differential distribution of men and women into occupations also referred to as the sex segregation of occupations. Different explanations for the sex segregation of occupations have been postulated. Overall, explanations relating to external versus

internal causes are distinguished. Both are further classified into direct and indirect influences (Stangor & Sechrist, 1998). External influences are those, which come from the outside of the individual such as discrimination, sexism, prejudice, and self-fulfilling prophecies. In the present thesis I will focus on internal influences, which are those within the person such as ability, performance expectancies, and preferences. Specifically, the research proposed here concerns the influence of gender stereotypes on women's domain preferences and aspirations. In particular, the effects of stereotype threat on women's leadership aspirations will be examined.

Stereotype threat theory (Steele, 1997) poses that, when a negative stereotype about a group in a certain performance domain exists, members of this group will be threatened by this stereotype, which will in turn lead to a negative impact on their performance and aspirations (i.e., performance and aspirations will decrease; e.g., Davies, Spencer, Quinn, & Gerhardstein, 2002). To date a huge body of research has addressed and confirmed the assumptions of stereotype threat theory concerning *performance* as an outcome variable (for reviews see Maas & Cadinu, 2003; Smith, 2004; Steele, Spencer, & Aronson, 2002). However, research addressing the effects of stereotype threat on *aspirations* or *motivation* is still very rare. In addition, those studies that have shown effects of stereotype threat on motivation do not present a consistent picture whether stereotype threat will decrease or, in contrast to effects on performance, increase motivation (e.g., Davies, Spencer, & Steele, 2005; Nussbaum & Steele, 2007).

The present research aims to address the issue *when* stereotype threat will have a decreasing or an increasing effect on women's leadership aspirations or motivation. Furthermore, the question whether stereotype threat effects on motivation and performance will differ is explored. It is proposed that stereotype threat can enhance

or decrease motivation depending on a person's motivational orientation. For this purpose it is referred to regulatory fit theory (Higgins, 2000).

Regulatory fit theory (Higgins, 2000) states that a regulatory fit occurs, when there's a fit between a person's motivational orientation, i.e., a person's regulatory orientation, and his or her goal. Further, regulatory *focus* theory (Higgins, 1997; 1998) proposes that a person's regulatory orientation can either be predominantly promotion- or prevention-focused. According to regulatory fit theory (Higgins, 2000) a regulatory fit will occur, if a person's motivational orientation and his or her goal share the same regulatory orientation. A regulatory fit is assumed to lead to an increase in a person's motivation and/or a *feeling of rightness*. The *feeling of rightness* is proposed as a subjective kind of experience that occurs through a regulatory fit and will lead to an increase in a person's reactions and evaluations of stimuli during that experience, whatever these reactions or evaluations happen to be (e.g., Higgins, Idson, Freitas, Spiegel, and Molden, 2003; Schwarz, 2006).

The current research proposes that a regulatory fit can occur from stereotype threat. In particular, it is put forward that a prevention focus is associated with stereotype threat conditions whereas a promotion focus is associated with no stereotype threat conditions (i.e., when the negative stereotype is removed and relatively positive expectations are present). According to regulatory focus theory (Higgins, 1997; 1998) a person with a prevention focus is concerned with losses and failures and particularly sensitive to the presence or absence of negative outcomes. At the same time the possibility of a failure and negative outcomes activate prevention goals (e.g., the approach of nonlosses and the avoidance of losses). A person with a promotion focus, on the other hand, is concerned with gains and successes and particularly sensitive to the presence or absence of positive outcomes. Respectively,

the possibility of a success and positive outcomes activate promotion goals (e.g., the

approach of gains and the avoidance of nongains). In stereotype threat conditions the

absence or presence of the possibility of a failure and negative outcomes is made

salient by the presence of a negative stereotype about one's group's abilities.

Therefore, stereotype threat conditions should instigate prevention goals. In no

stereotype threat conditions, on the other hand, the negative stereotype about one's

group is removed and relatively positive expectancies are present in the situation,

making the absence or presence of the possibility of a success and positive outcomes

salient. Hence, no stereotype threat conditions should induce promotion goals. These

assumptions have been supported by previous research showing that stereotype threat

conditions are associated with a prevention focus and no stereotype threat conditions

are associated with a promotion focus (Seibt & Förster, 2004)[1].

Given that a regulatory fit occurs when a person's motivational orientation and

his or her goal share the same regulatory orientation, a regulatory fit or nonfit[2] should

occur for predominantly prevention- or promotion-focused individuals under

stereotype threat or no stereotype threat conditions. Specifically, a regulatory fit is

assumed to occur under stereotype threat conditions for prevention-focused

individuals and under no stereotype threat conditions for promotion-focused

individuals. Contrarily, a regulatory nonfit is assumed to occur under *no* stereotype

---

[1] Conversely, other authors have argued that stereotype threat does not activate a prevention focus and no stereotype threat a promotion focus, rather prevention-focused individuals are thought to be particularly sensitive to the negative expectancies present under stereotype threat whereas promotion-focused individuals are thought to be particularly sensitive to the relatively positive expectancies present in no stereotype threat conditions (see Keller & Bless, 2008). The approach taken in this thesis integrates both accounts by postulating that stereotype threat can temporarily activate a prevention focus and no threat a promotion focus, *because* the presence or absence of negative outcomes (stereotype threat) or positive outcomes (no stereotype threat) are salient in the situation (cf. Higgins, 1997)

[2] According to regulatory fit theory (Higgins, 2000) regulatory nonfit refers to the mismatch of a person's regulatory orientation and his or her goal.

threat conditions for prevention-focused individuals and under stereotype threat conditions for promotion-focused individuals.

The Regulatory Fit from Stereotype Threat Assumption will be outlined in further detail in the current work and experimentally tested in three studies. I will start outlining stereotype threat effects on performance to explain the concept in further detail and present proposed processes and moderators underlying these effects. Then I will introduce other outcome variables that have been shown to be affected by stereotype threat and finally elaborate on research showing stereotype threat effects on motivation. Here I will point out the inconsistencies of stereotype threat effects on motivation in the research to date and propose the match of a person's motivational orientation and his or her goal as a possible explanation. Following, I will introduce regulatory fit and regulatory focus theory and give an extensive overview of the literature on regulatory fit as it relates to the current studies. Finally, I will point out how stereotype threat can lead to a regulatory fit and test this assumption experimentally.

Three experiments will test the Regulatory Fit from Stereotype Threat Assumption with women's leadership aspirations as the outcome variable. In Studies 1 and 2 the effect of regulatory fit from stereotype threat on motivation will be tested. Study 3 examines whether regulatory fit from stereotype threat will lead to an increase in stimuli persuasiveness due to an effect of *feeling right*. Furthermore, in all three studies the possible differential effects on motivation and performance and their interaction will be explored.

In sum, the current research question is based on the sex segregation of occupations. Specifically, the questions addressed here concern the link between gender stereotypes and women's domain aspirations or motivation. In particular, the

present research investigates when stereotype threat effects will lead to an increase or decrease in leadership motivation. To answer this question it is drawn from regulatory fit theory. It is put forward that stereotype threat conditions can lead to a regulatory fit and thus enhance motivation and/or lead to an increase stimuli persuasiveness.

1   THEORETICAL PART

I want to begin by outlining the interrelations between the sex segregation of occupations, gender stereotypes, and occupational preferences. The sex segregation of occupations exists on a horizontal level (between occupations) and a vertical level (within occupations). The horizontal sex segregation is shown by women being the majority among service workers, clerical and sales workers and in the care, nursing and education professions whereas occupations such as technical workers, production workers and transport workers are heavily male-dominated (e.g., European Industrial Relations Observatory [EIRO], 2000). The vertical sex segregation is marked by the fact that upper level positions are mostly occupied by men and women are less likely found in managerial positions (EIRO, 2000). In fact, the percentage of women in top-management positions has been found to be not more than 7% in Germany (Hoppenstedt, 2005).

It has been argued that the occupational sex segregation corresponds with and results in gender stereotypes (Eagly, 1987; Eagly, Wood, & Diekman, 2000). Empirical support for this argument can be found in various studies. Ceijka and Eagly (1999), for example, found that the gender ratio in several occupations correlated significantly with the gender-stereotypic images of those occupations. Further, Schein, Mueller, Lituchy, and Liu (1996) found in several studies that successful middle managers were perceived to be more similar to men in general than to women in general. The correspondence between the occupational sex segregation and gender stereotypes was already shown among young boys and girls, who believed that certain jobs should be performed by a woman whereas others should be performed by a man.

These beliefs matched the pattern of occupational sex segregation (Miller & Budd, 1999; Smithers & Zientek, 1992).

Furthermore, Miller and Hayward (2006) showed that the occupational sex segregation strongly correlated with young boys' and girls' sex-role stereotyping as well as their occupational preferences. Additional support for the influence of the occupational sex segregation on occupational preferences via gender stereotypes was shown in studies by Jacobs and Eccles (2000) where boys chose stereotypically masculine jobs whereas girls choose stereotypically feminine jobs. Moreover, data from the Equal Opportunity Commission (EOC, 2001) provides evidence that most individuals prefer jobs that are viewed as gender-congruent (i.e., correspond to the occupational sex segregation and gender stereotypes of one's own sex).

Taken together, there is clear evidence for a link between the occupational sex segregation, gender stereotypes, and domain aspirations. The link between gender stereotypes and domain aspirations is multi-faceted and has been addressed by many different authors (e.g., Eagly, 1987; Eccles, 1994; Konrad, Ritchie, Lieb, & Corrigal, 2000). For example, in Eagly's social role theory (Eagly, 1987; Eagly, Wood, & Diekman, 2000) it is argued that gender stereotypes are the result of the segregation of women and men into different social roles such as occupations. Those gender stereotypes in turn elicit sex-differentiated behavior and choices such as domain aspirations. Konrad et al. provided an extensive review with a meta-analysis on gender-differences in job attribute preferences, which showed that men and women generally preferred job attributes that are consistent with gender roles and stereotypes. Further, a comprehensive model of achievement-related choices was offered by Eccles (1994). Eccles proposes that achievement behaviors such as choice of activity (e.g., domain selection), persistence, and actual performance are a result of the

interaction of a number of variables that can be grouped into two basic components, a component concerning social factors and a component concerning psychological factors. In this model gender stereotypes are seen as one among many interacting variables that influence achievement related behavior such as domain aspirations.

Although, it is acknowledged here that the influence of gender stereotypes on behavior operates within a wide array of variables, such as socialization, social structures and roles, this thesis will address how gender stereotypes can influence behavior in a specific situation namely through stereotype threat (Steele, 1997). Hence, the focus in this thesis is on how women's career aspirations can be influenced by stereotype threat.

1.1   Stereotype Threat

Stereotype threat theory has proposed valuable insights and created a vast body of research on how negative stereotypes can impede behavior of a stereotyped group. Stereotype threat has been characterized as a situational threat that occurs when negative stereotypes about one's group are thought to apply. As a result one might perceive to be judged or treated in terms of the stereotype or might inadvertently confirm it (cf. Steele et al., 2002). Stereotype threat has been studied for more than a decade now, and different authors have offered different definitions of the concept encompassing the one offered above in different ways. Those definitions mostly differ in their statement by whom one might be judged or treated in terms of the stereotype (i.e., the self, out-group others, or in-group others) and who might be judged or treated in terms of the stereotype or might be at risk to confirm it (i.e., the self or one's group; for a review see Shapiro & Neuberg, 2007).

Since all of the above definitions are applicable to the theoretical model that I will put forward at a later point as well as to the later proposed studies I want to slightly alter a definition of stereotype threat proposed by Wheeler and Petty (2001, p. 804) to take in the full range of proposed definitions: Stereotype threat is "defined as the pressure an individual faces when he or she may be at risk of confirming negative, self-relevant group stereotypes [in others' eyes, or in one's own][3]".

Further definitions of stereotype threat include its outcome variables such as stating that stereotype threat is "the apprehension people feel when *performing* in a domain in which their group is stereotyped to lack ability" (Aronson & Inzlicht, 2004, p. 830) or "a negative stereotype can elicit a disruptive state […] that undermines *performance and aspirations* […] – a situational predicament termed stereotype

---

[3] Words in brackets were added to the definition offered by Wheeler and Petty (2001).

threat" (Davies, et al., 2002, p. 1616). There is a massive body of research evidence showing that stereotype threat impairs the performance of members of the stereotyped group in the stereotyped domain (for reviews see Maas & Cadinu, 2003; Smith, 2004; Steele et al., 2002). Far less empirical evidence exists on the impact of stereotype threat on aspirations or interest and motivation for a domain (i.e., Davies, et al., 2002; Davies et al., 2005; Nussbaum & Steele, 2007; Rosenthal & Crisp, 2006; Smith, Sansone, & White, 2007). Therefore, in order to give an overview of the phenomena of stereotype threat including its proposed mechanisms, moderators, and interventions I will first outline the effects of stereotype threat on performance. However, of particular interest for this thesis are the effects of stereotype threat on motivation and related outcome variables. Hence, these will be discussed in greater detail in the section thereafter.

1.1.1   *Stereotype Threat and Performance*

A meanwhile classic example of stereotype threat effects on the academic performance of women is a study by Spencer, Steele, and Quinn (1999). They asked male and female participants to complete a test measuring mathematical ability. Half of the participants were told that the test has shown no gender differences in the past (no stereotype threat condition), presumably rendering the stereotype irrelevant. The other half of the participants who were in the stereotype threat condition were given no information about gender differences on the test. The assumption was that in the stereotype threat condition the negative stereotype about women's math performance would become relevant simply by presenting a test in the stereotyped domain. The results showed that women and men performed equally well in the no stereotype threat condition but that women in the stereotype threat condition underperformed in

comparison to men and in comparison to women in the no stereotype threat condition (see Figure 1).

Figure 1. Performance on a math test as a function of gender and test characterization (adapted from Spencer et al., 1999)
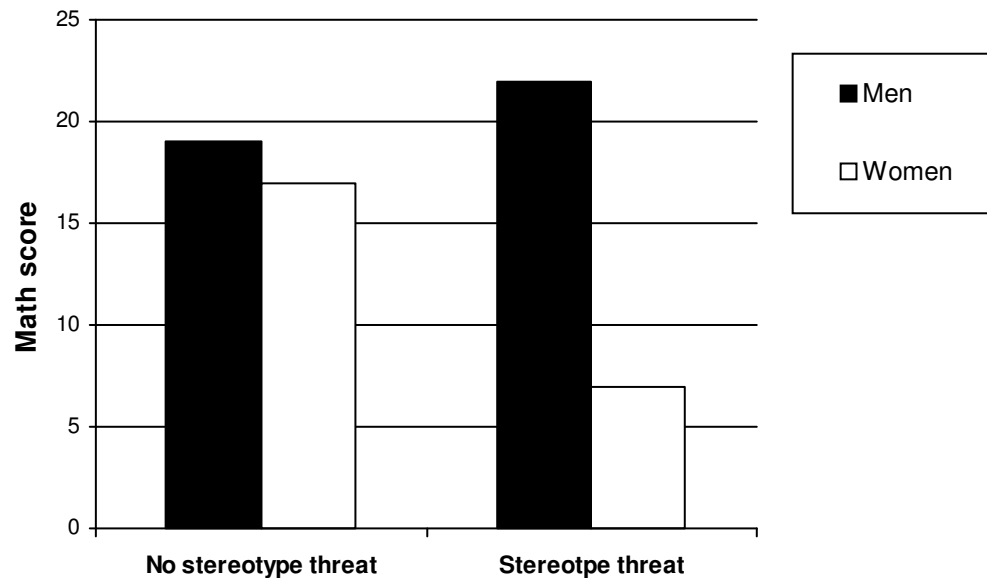
Further evidence for the detrimental effects of stereotype threat on performance relates, for example, to African-American's academic performance (e.g., Steele & Aronson, 1995), low SES (Socio-Economic Status) participants' verbal performance (Croizet & Claire, 1998), women's negotiation abilities (Kray, Thompson, & Galinsky, 2001), men's performance on an affective decision task (Leyens, Désert, Croizet, & Darcis, 2000), decreased memory performance of elderly (Levy, 1996), or Caucasians' athletic performance when compared to African-Americans' (Stone, Lynch, Sjomeling, & Darley, 1999).

1.1.1.1   Paradigms

The general paradigm for stereotype threat effects to occur is that the stereotype has to be relevant in the situation. Many manipulations have been used by researchers studying stereotype threat. However, most manipulations can be grouped into three categories.

First, stereotype threat can be manipulated by *activating group differences* in performance either implicitly or explicitly. The implicit activation of group differences in performance is accomplished by giving participants a test of performance for the stereotyped domain without mentioning any group differences in performance for the stereotype threat condition assuming that the stereotype would be activated merely by the test itself. In the no stereotype threat condition the stereotype is rendered irrelevant by stating that no group differences in performance have occurred on this test in the past (e.g., Spencer et al., 1999). The explicit activation of group differences is either indirect by stating that group differences (e.g., gender differences) in performance have occurred on the test in the past or blatant and direct by stating that the stereotyped group (e.g., women) was found to perform worse than the non-stereotyped group (e.g., men). In the no stereotype threat conditions the stereotype is in both cases again removed by stating that no group differences in performance have occurred on this test in the past (e.g., Spencer et al., 1999).

Second, stereotype threat can be manipulated by *varying the test diagnosticity* for the stereotyped domain. The stereotype is made relevant by depicting the test as diagnostic of a domain for which the stereotype applies or, when removing the stereotype threat, depicting the test as diagnostic of a domain for which the stereotype does *not* apply (e.g., in a study with African-Americans by stating that the proposed test is diagnostic of verbal vs. problem solving abilities; Steele & Aronson, 1995).

Third, stereotype threat can be manipulated in a subtle manner usually by *activating the category membership* of the negatively stereotyped group, e.g. by having participants indicate their gender or race prior to the test, by exposing participants to gender stereotypic TV commercials, or putting them in a solo-status condition among members of a group which is not negatively stereotyped for the performance domain (e.g., Davies et al., 2002; Steele & Aronson, 1995; Sekaquaptewa & Thompson, 2003).

1.1.1.2 Underlying Processes

Why do these detrimental effects of negative stereotypes on people's behavior occur? Much research has been conducted to determine the processes that drive stereotype threat effects on performance. Up to date there is no unitary answer or as Osborne (2001, p. 296) stated stereotype threat "is an effect without a clearly explicated mechanism".

According to Steele and Aronson (1995) minority members are *afraid* to confirm the stereotype which creates a tension due to the *preoccupation* with the inadvertent confirmation of the stereotype. Thus, two mechanisms are suggested here to go hand in hand: anxiety and disruptive thoughts. Indeed both have been among the most frequently studied processes to account for stereotype threat effects.

Anxiety or arousal. Many researchers have attempted to show that the detrimental effects of stereotype threat on performance are due to an increase in anxiety or arousal. The results however provide a mixed picture. Often no effects at all could be established (e.g., Steele & Aronson, 1995; Aronson, Lustina, Good, Keough, Steele, & Brown, 1999; Stone et al., 1999). Other researchers found marginal or full evidence for partial mediation (e.g., Osborne, 2001; Spencer et al., 1999). In

addition to most of the anxiety measures which were assessed on self-report scales Blascovich, Spencer, Quinn, and Steele (2001) found support for anxiety as a plausible mechanism by showing an increase in blood pressure under stereotype threat.

Disruptive thoughts. Further, disruptive thoughts such as the number of negative thoughts, self-doubts, low performance expectancies, or task confidence were tested as a mediational process for stereotype threat effects on performance. It is argued that stereotyped group members' cognitive resources will be occupied by these thoughts limiting further resources for performance. Again across different studies no clear picture emerges when comparing the results. Sometimes no effects of mediation were found as for performance expectancies (e.g., Keller, 2002; Kray et al., 2001; Sekaquaptewa & Thompson, 2003) and self-efficacy (e.g., Oswald & Harvey, 2001). Others found effects of stereotype threat on the mediator (performance expectancies: e.g., Stangor, Carr, & Kiang, 1998; self-doubt: e.g., Steele & Aronson, 1995) but no effect of the mediator on performance. Then some researchers found evidence of partial mediation (performance expectancies: Cadinu, Maas, Frigerio, Impagliazzo, & Latinotti, 2003; self-doubt: Stone, 2002).

Other mediators that are related to anxiety and/or intrusive thoughts such as increased evaluation apprehension and lowered working memory capacity have also been studied. In particular, no evidence for evaluation apprehension as a mediator could be obtained so far (e.g., Spencer et al., 1999; O'Brien & Crandall, 2003). However, results concerning working memory capacity have been proven to be most promising when compared to other investigated processes. Schmader and Johns (2003) found evidence of stereotype threat effects on working memory and

established working memory as a significant mediator of stereotype threat effects on women's math performance.

Overall, the processes underlying stereotype threat effects cold not be fully established yet. Except for working memory capacity none of the mediators investigated could show a full mediation. Smith (2004) proposes that the fact that none of the processes could be proven so far when studied individually would imply that different processes cumulatively cause the effects. As a result Smith put forward a multiple-mediator model of stereotype threat effects. However, Shapiro and Neuberg (2007) suggest that the mixed picture of results on stereotype threat processes is due to the different definitions and operationalizations of stereotype threat and offer a multi-threat framework proposing different kinds of stereotype threat that differ in their underlying processes. Nevertheless, the multiple-mediator model and the multi-threat framework still remain to be tested empirically.

Even though the empirical evidence concerning the underlying mechanisms of stereotype threat remains somewhat puzzling, some parts are clear and consistent across all studies. A negative stereotype is salient in the situation and the members of the stereotyped group do not want to confirm this stereotype. Whether they fear or are anxious to confirm it, have thoughts and worries about confirming it, put too much effort into disconfirming the stereotype, other processes, all or some of the above lead to performance decrements still remains to be shown.

1.1.1.3 Moderators

The mostly acknowledged moderators in the stereotype threat literature were already identified by Steele (1997) stating that one of the general features of stereotype threat is "an identified-with setting" (p. 617) implying that for stereotype

threat to occur it is necessary that an individual identifies a) with the domain and b) with the stereotyped group. Steele (1997) further states that "the work of dispelling stereotype threat through performance probably increases with the difficulty of work in the domain" (p. 618). Accordingly, task difficulty is suggested as another major moderator variable for stereotype threat effects on performance.

Domain identification. Domain identification is often seen as a prerequisite for stereotype threat effects to occur. As a result, many researchers have limited their samples to highly domain identified individuals (e.g., Marx & Roman, 2002; Schmader, 2002; Schmader & Johns, 2003; Spencer et al., 1999). It is argued that an individual has to care about the domain in order for stereotype threat effects to become self-relevant. A few studies have indeed successfully tested this assumption by comparing high and low domain-identified individuals (Aronson et al., 1999; Cadinu et al., 2003; Stone et al., 1999). However, according to the definition of stereotype threat offered above an individual might not only fear to confirm the stereotype in his or her *own eyes* but also in the *eyes of others* without seeing the domain as relevant to his or her self-concept. Indeed (Marx, Stapel, & Muller, 2005) have found that stereotype threat effects were mediated by impression related concerns (sample item: "I am concerned what other people think of me") for high *and* low identified individuals. In addition, stereotype threat effects have also, for example, been found for the domain of social sensitivity or emotional intelligence in men (Koenig & Eagly, 2005; Leyens, et al., 2000) a group that generally is not likely to be highly identified with those domains. However, other research in which the perceived relevance of the domain was manipulated suggests that men are more vulnerable to stereotype threat in the domain of emotional intelligence when their domain identification is high (Görzig, Keller, & Bless, 2005). In sum, these results

suggest that domain identification is sometimes, but not always, a prerequisite for stereotype threat effects to occur. Future research should address the question under which conditions domain identification is a necessity for stereotype threat effects and in which conditions stereotype threat effects can be found for both high and low identified individuals.

Group identification. Identification with the stereotyped group is also often seen as a presumed necessity for stereotype threat effects, but has not been studied as frequently as domain identification. The reasoning is the same as the one for domain identification. An individual has to identify with his or her group in order for the negative stereotype about the group to become self-relevant. Again, this argument can only hold when the individual fears to confirm his or her group's stereotype in his or her *own eyes*. When an individual could be seen as a member of his or her group by others and thus fears to confirm the group stereotype in *others' eyes,* group identification fails to be a necessary condition in order for stereotype threat effects to appear. Accordingly, the empirical evidence again presents a mixed picture. For example, Schmader (2002) showed that gender group identification is a moderator for stereotype threat effects on women's math performance whereas Cadinu et al. (2003) failed to show the very same effect.

Task difficulty. The difficulty of the task is another potential moderator of stereotype threat effects. It is argued that performance-impeding factors triggered by stereotype threat such as anxiety and/or intrusive thoughts are particularly relevant under conditions of high task difficulty. The argument put forward concerning anxiety is in line with research showing that enhanced arousal increases performance on moderately difficult items but decreases performance on very difficult items (e.g., Hill & Wigfield, 1984; Yerkes & Dodson, 1908). As mentioned in the section on

mediators, intrusive thoughts occupy a person's cognitive resources, which should become particularly debilitating under difficult performance tasks. Supporting these arguments, Spencer et al. (1999) found that stereotype threat effects on women's math performance only occurred under conditions of high task difficulty. Nonetheless, the assumed mechanisms (i.e., anxiety and intrusive thoughts) have not yet proven to be present under all conditions of stereotype threat. Thus, it cannot be assumed that stereotype threat effects are always enhanced under high test difficulty. In fact, it has been demonstrated in a recent study that stereotype threat effects can also occur on relatively easy test items (Wade, 2007).

Although the moderators outlined above have been agreed upon by many scholars, the theoretical background and empirical evidence seem not as clear. Further research should be considered to identify the conditions under which certain variables do or do not moderate stereotype threat effects. Furthermore, it is relevant to differentiate between moderators for different types of domains and groups as well as the nature of the task.

1.1.1.4 Coping Mechanisms and Interventions

Members of stereotyped groups have developed different types of coping behaviors when faced with stereotype threat. They have been shown to engage in self-handicapping by providing external explanations (e.g., lack of sleep) or engaging in behavior which would link a possible failure to other sources than their ability level (e.g., lack of training; e.g., Keller, 2002; Steele & Aronson, 1995; Stone, 2002). Further, they have shown to disengage their self-worth from performance in the domain (Stone et al., 1999). As an attempt not to be seen as typical members of the stereotyped group, individuals have been found to engage in counter-stereotypic

behavior (e.g., African-Americans reporting to dislike jazz, hip-hop, or basketball; Steele & Aronson, 1995) or to disidentify from characteristics of the stereotyped group (e.g., women disidentified from typical feminine characteristics such as emotional, flirtatious, and planning to have children; Pronin, Steele, and Ross, 2004). Furthermore, individuals have been found to avoid or disidentify from the stereotyped domain (e.g., Davies et al., 2002; Davies et al., 2005).

Some attempts to externally eliminate stereotype threat effects go in hand with the manipulations used for the no stereotype threat conditions. For example, stereotype threat can be eliminated by rendering the stereotype irrelevant (e.g., Spencer et al., 1999). Others have shown that shaping individuals' theories of intelligence as malleable (Aronson, Fried, & Good, 2002) or informing participants about stereotype threat effects (Johns, Schmader, & Martens, 2005) offers protection against stereotype threat effects on performance tests. In addition, various researchers showed that presenting positive models of members of the stereotyped group, who have succeeded in the stereotyped task or domain, can also buffer from the detrimental effects of stereotype threat on performance (e.g., Blanton, Crocker, & Miller, 2000; Blanton, Christie, & Dye, 2002; Marx & Roman, 2002; Marx et al., 2005; McIntyre, Paulson, & Lord, 2003).

1.1.2   *Stereotype Threat and Other Outcome Variables*

Although most studies on stereotype threat have investigated performance as the main dependent variable, a smaller number of studies have also shown that stereotype threat can influence other outcome variables some of which have already been reported above as coping mechanisms. Further outcome variables of stereotype threat besides performance are, for example, blood pressure (Blascovich, et al., 2001),

anxiety and frustration (Marx & Stapel, 2006a), domain-specific self-efficacy (Aronson & Inzlicht, 2004), disidentification from characteristics associated with the stereotyped group (Pronin, et al., 2004; Steele & Aronson, 1995), but most importantly for the proposed framework disengagement or disidentification from the negatively stereotyped domain, aspirations for stereotype relevant careers, and motivation or avoidance of a task for which one's own group is negatively stereotyped (e.g., Davies et al., 2002; Davies et al., 2005; Major & Schmader, 1998; Major, Spencer, Schmader, Wolfe, & Crocker, 1998; Osborne, 1995; Nussbaum & Steele, 2007). Nonetheless, compared to performance measures, these outcome variables have been largely understudied.

1.1.2.1   *Disengagement and Disidentification*

It has been theorized that members of stereotyped groups will disengage their self-esteem from self-evaluative feedback in the face of stereotype threat (e.g., Major et al., 1998; Steele et al., 2002). Disengagement can be temporary and a situationally specific response to stereotype threat or it can be chronic, i.e., when exposure to threat has been persistent. The chronic form of disengagement has also been referred to as disidentification (e.g., Steele & Spencer, 1992; Steele, 1997; Steele et al. 2002). Major & Schmader (1998) put forward two processes by which disengagement occurs: a) discounting (i.e., the validity or diagnosticity of feedback in the domain is questioned as a true indicator of one's behavioral outcome), b) devaluing (i.e., the importance of the domain for one's self is questioned). Both could be shown to be related to general disengagement (i.e., domain performance is seen as unrelated to one's sense of self). However, discounting is mostly associated with situational

disengagement whereas devaluing is associated with chronic disengagement or disidentification.

In line with the theorizing mentioned above, Major et al. (1998) provided correlational data showing that African Americans, who are negatively stereotyped in the intellectual domain, discounted and disengaged from the intellectual domain more than European Americans. Disengagement was further correlated with (higher) global self-esteem, underlining the assumption that when disengaging, one's sense of self is not affected by the negative stereotype. In addition, it was shown that African Americans had higher self-esteem than European Americans when doing poorly in school and their self-esteem was equivalent to European Americans' when doing well in school. Further, Osborne (1995) found a weakening of the correlation between self-esteem and academic outcomes of African Americans from 8th to 10th grade suggesting that African Americans disengage more from the academic domain the longer they are exposed to it.

Results of two experimental studies support these findings. In the first study, African-Americans' self-esteem and performance was shown to be less affected by success and failure feedback than European Americans'. At the same time African Americans attributed their performance outcomes to a biased test (Major et al., 1998). In the second study, following a race-prime, African Americans showed higher self-esteem when receiving failure feedback than European Americans and African Americans who did not receive a race-prime. Furthermore, African Americans who scored high in a chronic disengagement measure also showed higher self-esteem after failure feedback than African Americans who scored low on the chronic disengagement measure (Major et al., 1998).

These experimental data provide further evidence that when a negative stereotype about one's group's performance exists an individual tends to disengage from the domain by devaluing the test outcome as biased. This disengagement shows to protect the individual's self-esteem and performance from performance feedback. Thus, one could draw the conclusion that disengagement following stereotype threat can further protect from stereotype threat. Empirical support for this argument can be seen in studies that show that only those high in domain identification are affected by stereotype threat. Individuals who did not identify with the domain, i.e., are chronically disengaged from the domain, did not show any performance decrements under stereotype threat. However, their performance was shown to be quite low to begin with (Aronson et al., 1999; Cadinu et al., 2003; Stone et al., 1999). As Steele et al. (2002) argue both domain identified and disengaged individuals may suffer from low performance under stereotype threat for different reasons. The performance of the highly domain identified might suffer from stereotype threat due to frustration and experienced pressure whereas the performance of the disengaged might decrease due to a decline in their motivation. This reasoning implies that stereotype threat would lead to a decrease in motivation.

In fact it was shown in a study by Davies et al. (2005) that stereotype threat can decrease women's leadership aspirations. This study is of particular relevance, because it has investigated stereotype threat effects on women's leadership aspirations and thus has partially inspired the methodology for the studies presented later in this thesis. Therefore, I will briefly introduce the study by Davies et al. in the following.

Davies et al. (2005) exposed male and female participants to either stereotypic commercials (stereotype threat) or neutral commercials (no stereotype threat). Then they were asked to take part in an alleged role play for which they were told they

could either take over a leader role or a problem solver role. Specifically, they were told that "both the problem solver and the leader will be given a written description of a series of complex problems to be solved. The leader, however, will also be supplied with the answers to those problems. It's the leader's job to guide the problem solvers to the solution without explicitly telling them the answers." (Davies et al., p. 279). Further, the participants were told that for the role play they would join a group of other participants down the hall to avoid effects of the particular group composition. They were then asked to indicate their interest for each role on a scale from 1 (*no interest*) to 7 (*strong interest*). No significant effects were found among the male participants. However, for female participants it was shown that when exposed to gender-stereotypic commercials the problem solver role was preferred over the leader role whereas no difference was found in the interest for the problem solver and the leader role for female participants in the neutral commercials condition. Further, female participants in the neutral commercial condition had more interest in the leader role than those in the gender-stereotypic commercials condition. Conversely, female participants in the gender-stereotypic condition expressed more interest for the problem solver role than female participants in the neutral commercials condition (see Figure 2).

Figure 2. Women's role motivation as a function of stereotype threat and role type (adapted from Davies et al., 2005).
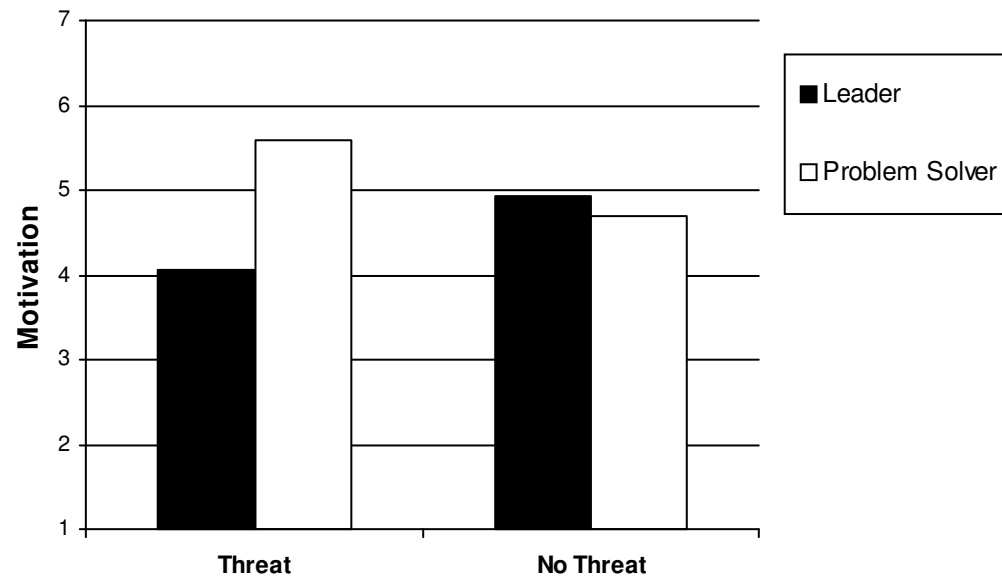
Davies et al.'s (2005) study shows that stereotype threat can have an impeding effect on motivation. However, the overall empirical evidence concerning stereotype threat effects on motivation is not as clear. In fact motivation and aspirations have sometimes, but not always, been shown to decrease from stereotype threat.

1.1.2.2   Domain Aspirations and Motivation or Avoidance?

Davies et al. (2002), for example, have shown that stereotype threat can lead to a *decrease* in motivation and an avoidance of the domain among highly domain identified individuals. Nussbaum and Steele (2007), on the other hand, found that stereotype threat caused a situational disengagement which helped to maintain domain identification and *increased* motivation.

Davies et al. (2002) exposed highly math identified male and female participants to commercials which were either gender-stereotypic (stereotype threat condition) or neutral (no stereotype threat condition). Then they gave them an aptitude test containing the same number of verbal and math items. Nussbaum and Steele (2007) gave European and African American participants a test of anagrams which were allegedly either diagnostic (stereotype threat condition) or non-diagnostic (no stereotype threat condition) of academic ability. Then they gave them a second test containing the same number of anagram and verbal analogy items. In both studies the numbers of chosen or attempted items for the stereotypic domain (i.e., math or anagram items) were measured. The results showed that female participants in Davies et al.'s study choose *fewer* math items under stereotype threat whereas African Americans in Nussbaum's and Steele's study choose *more* anagram tasks under stereotype threat compared to all other conditions (see Figure 3 and 4).

Figure 3. Math items attempted as a function of stereotype threat (adapted from Davies, et al., 2002)
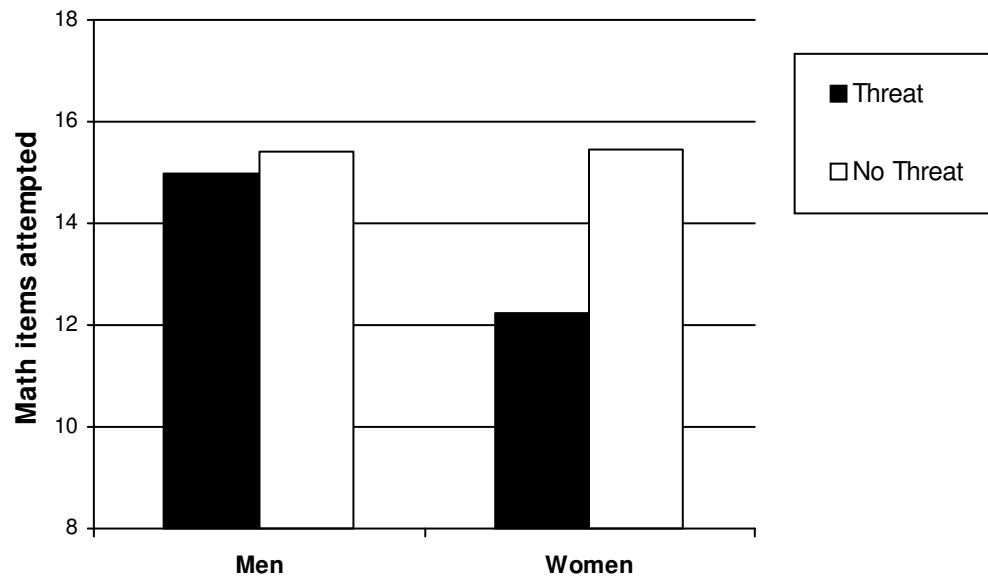
Figure 4. Anagram items selected as a function of stereotype threat (adapted from Nussbaum & Steele, 2007)
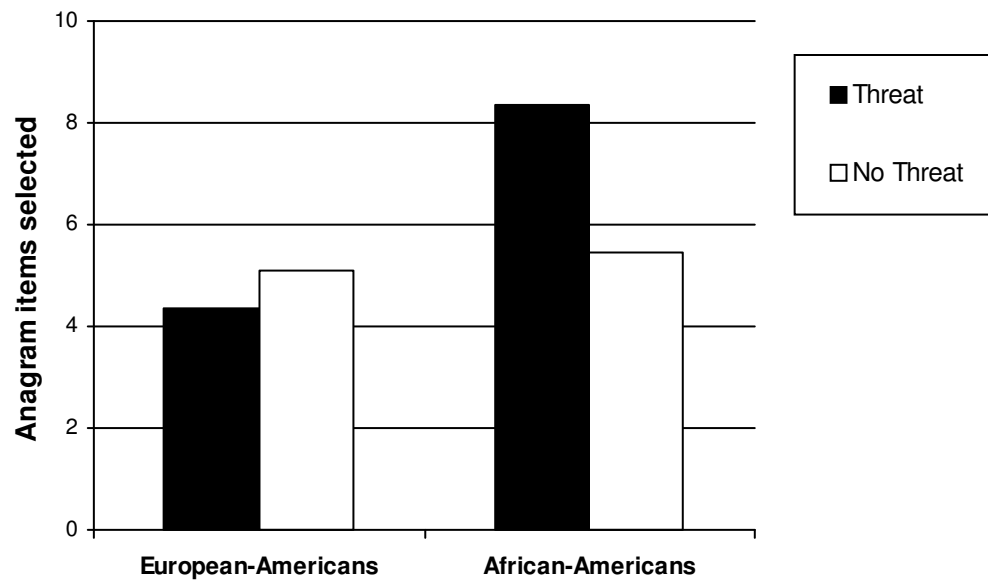
Furthermore, results in Nussbaum's and Steele's (2007) study were mediated by situational disengagement but not by domain devaluation, suggesting that as in Davies et al.'s (2002) study participants did not differ in their chronic domain identification.

Despite their similarities in design and procedure, these studies show diverging evidence for stereotype threat effects on motivation or avoidance for the stereotyped domain. Taken together the results suggest that there are conditions under which participants' motivation for the stereotyped domain decreases under stereotype threat and are in line with results of stereotype threat effects on performance (e.g., Davies et al., 2002). It is also shown that there are other conditions under which participants' motivation for the stereotyped domain increases and participants might feel motivated to disconfirm the stereotype present under stereotype threat (e.g., Nussbaum & Steele, 2007). Thus, the remaining question is *when* motivation might increase or decrease as a function of stereotype threat.

Although not explicitly addressing the *when* question, Smith et al. (2007) provided empirical evidence pointing to the joint effect of performance goals and achievement motivation (cf. Elliot & Church, 1997) as a potential moderator of stereotype threat effects on task interest. Smith et al. induced stereotype threat by explicitly activating group differences on a computer task for female participants who were high or low in achievement motivation. Then performance avoidance vs. performance approach goals (cf. Elliot & Church, 1997) were manipulated via the following instructions: "Some students stand out because they do quite poorly (vs. well) on the [task]. For instance, if you do worse (vs. better) on the [task] than a majority of students, you will demonstrate that you have poor (vs. good) computing aptitude." (Smith et al., 2007, p. 103). As a dependent measure, participants' interest

in the task was assessed via three items (e.g., "This task is fun to do"). The researchers found that under stereotype threat women who were high in achievement motivation showed higher computer task interest under a performance approach goal than a performance avoidance goal whereas women who were low in achievement motivation showed higher computer task interest under a performance avoidance goal than a performance approach goal (see Figure 5).

Figure 5. Women's interest in a computer task as a function of achievement motivation and performance goal under stereotype threat (adapted from Smith et al., 2007).
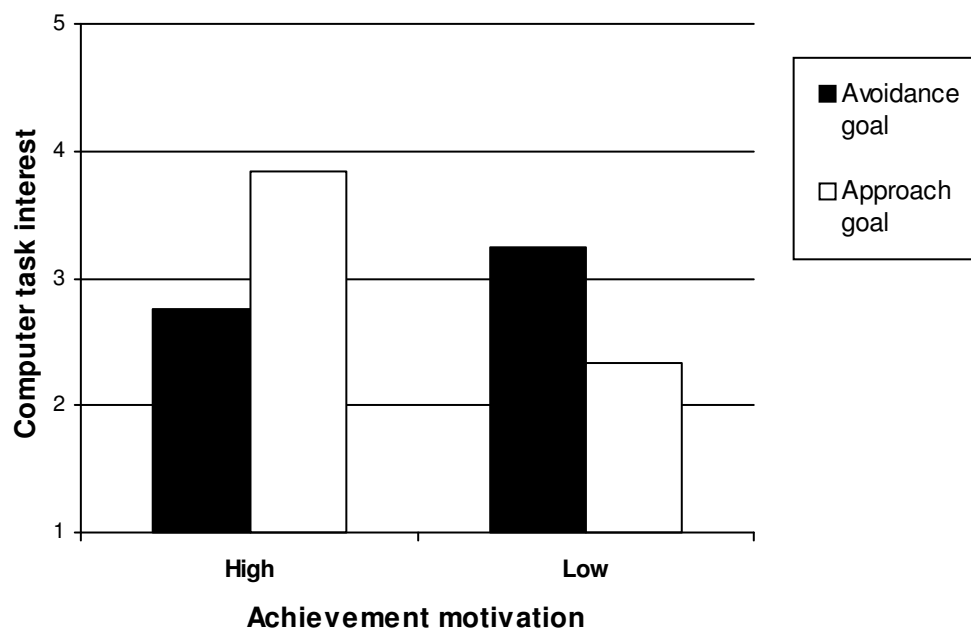
I will discuss the results of Smith et al.'s (2007) study in the following in an attempt to answer the question when stereotype threat can lead to increased or to decreased motivation. Someone high in achievement motivation as described by Smith et al. is "someone who aspires to accomplish difficult tasks, maintain high

standards and is […] willing to put forth effort to attain excellence" (p. 101).

Someone low in achievement motivation on the other hand wants to "avoid

demonstrating incompetence" (p. 100). Not surprisingly, it has been argued that high

achievement motivation goes along with domain identification and low achievement

motivation is associated with chronic disengagement (see Crocker & Major, 1989;

Steele et al., 1992; Steele, 1997). Thus, participants in Smith et al.'s study who were

low in achievement motivation might also have been psychologically disengaged

from the domain, i.e., they did not consider performance in that domain as important.

Participants high in achievement motivation on the other hand most likely cared a lot

about their performance in that domain.

When introducing a performance approach goal, where the focus is on

attaining success (Elliot & Church, 1997), participants high in achievement

motivation were probably very motivated to show that their performance is among the

best and showed an increase in interest. Participants low in achievement motivation

on the other hand possibly did not care much about achieving high performance and

thus their interest could not be enhanced by the approach goal. When introducing an

avoidance goal, where the focus is on the avoidance of failure (Elliot & Church,

1997), however, participants low in achievement motivation may have wanted to

"avoid demonstrating incompetence" or, in other words, avoid confirming the

negative stereotype present under stereotype threat and thus demonstrated an increase

in interest in the task. Participants high in achievement motivation, however, might

not have been as sensitive to the avoidance goal, because their aim is to attain

excellence and not to avoid failure. Accordingly, individuals should be most sensitive

to the goals in line with their motivational orientation. Returning to the *when* question

motivation should increase under stereotype threat when a person's goal is in line

with his or her motivational orientation and should remain stable or decrease when it is not. Before continuing with this rationale, however, certain weaknesses comprised in the framework put forward by Smith et al. (2007) need to be addressed.

The goal framework from achievement motivation theory that was established by Elliot and his colleagues (e.g., Elliot & Church, 1997) was used in the study by Smith et al. (2007). In the achievement motivation framework, two types of goals are distinguished: Performance goals and learning or mastery goals. The performance goals as activated in the experiment described above are thought to affect performance but not motivation. For learning goals, on the other hand, it is questioned whether they affect performance, but it is argued that they should mainly affect motivation (Elliot & Church, 1997). Thus, it is somewhat puzzling that the results obtained by Smith et al. were obtained by inducing performance goals (as opposed to learning goals), considering that their dependent variable was task interest which is clearly a motivational measure. A motivational framework which does not show a fixed connection between particular motivational orientations and their behavioral outcome variables (i.e., motivation or performance) should be considered.

Furthermore, the performance goal manipulations induced in Smith et al.'s (2007) study reflect a restriction present in most achievement motivation theories. For example, in the performance avoidance goal induction it is stated that "some students stand out on the task because they do poorly". There are two kinds of conclusions that could be drawn: a) if a person stands out he or she did poorly or b) if a person does not stand out he or she *did not* do poorly. However, only one of the two is offered in the remainder of the manipulation: "if you do worse […] you will demonstrate that you have poor computing ability". A similar limitation can be found for the performance approach goal manipulation. By stating that "some students stand out

because they do quite well" again two kinds of conclusions can be drawn: a) if a person stands out he or she did well b) if a person did not stand out he or she *did not* do well. Once more, only one of the conclusions is given within the manipulation: "if you do better […] you will demonstrate that you have good computing aptitude". These manipulations reflect the fixed relationship which is inherent in achievement motivation theories between approach as a strategy when the outcome is success and avoidance as a strategy when the outcome is failure. However, as argued above a person could also approach a non-failure (e.g., approach to not stand out and show to not do poorly) or avoid a non-success (e.g., avoid not standing out and show to not do *not* well).

To sum up, the results of Smith et al.'s (2007) study suggest that motivation under stereotype threat will increase when a person's goal is in line with his or her motivational orientation and should decrease when it is not. Further, the achievement motivation framework applied in this study could be improved by a motivational framework which shows no fixed relationships between a) particular motivational orientations and their behavioral outcome variables (i.e., motivation or performance) and b) approach or avoidance and the valence of the outcome (i.e., success or gain and failure or loss).

A framework which explains an increase in motivation when a person's motivational orientation is in line with his or her goal is regulatory fit theory (Higgins, 2000). Regulatory fit theory derived from regulatory focus theory (Higgins, 1997, 1998) which proposes a motivational framework addressing the limitations and concerns put forward above concerning achievement motivation theories. For these reasons, the concept of regulatory fit is introduced in greater detail in the second section. In the third section the theoretical model underlying the studies presented in

this thesis will be proposed by showing how motivation under stereotype threat might

increase or decrease on the account of regulatory fit.

1.2   Regulatory Fit

Most theories concerning motivation and decision-making put forward that a decision is evaluated according to the value of the outcome and the costs to attain this outcome. For example, in expectancy-value theories (e.g., Atkinson, 1957; Eccles et al., 1983; Wigfield, 1994; Wigfield & Eccles, 1992) a decision is evaluated based on the value of the expected outcome and the likelihood or costs of its attainment as well as by their multiplicative effect. However, based on the regulatory fit assumption, Higgins (2000) proposed that the value of a decision can have a source independent from the outcome or costs, i.e., a value from regulatory fit. A regulatory fit occurs "when individuals use goal pursuit means that fit their regulatory orientation" (Higgins, 2000, p. 1220). In his regulatory focus theory, Higgins (1997, 1998) established basic assumptions about an individuals' regulatory orientation, which is a premise for regulatory fit. Therefore I want to begin by introducing regulatory focus theory in order to fully explain the concept of regulatory fit in the following.

1.2.1   Regulatory Focus Theory

Higgins (1997, 1998) put forward that self-regulation differs between needs for nurturance and for security. Consequently, he proposed two different modes of self-regulation: a promotion focus and a prevention focus. Until this point, most motivational frameworks have proposed that desired end-states are related to approach whereas undesired end-states are associated with avoidance. This dichotomy failed to distinguish between different ways of approaching desired end-states and different types of desired end-states. Regulatory focus theory differs from other motivational theories as, for example, achievement motivation theory, in that it does

not assume a fixed relationship between outcome valence and approach or avoidance behavior.

For example, achievement motivation theories (e.g., Atkinson, 1957; Elliot & Church, 1997) assume that individuals are motivated to avoid failure or to approach success. However, according to regulatory focus theory, things are simplified by such an assumption. Consider, for example, a typical situation where someone is trying to catch a train. The person can either catch the train (gain or success) or miss the train (loss or failure). According to achievement motivation theories a person would either aim to catch the train (approach a gain) or avoid missing the train (avoid a loss). Yet, a person might as well try to avoid not catching the train (avoid a nongain) or to approach not missing the train (approach a nonloss). Thus, regulatory focus theory proposes instead that approach behavior is shown in situations where the presence of positive outcomes or the absence of negative outcomes is expected, whereas avoidance behavior will be shown when the presence of negative outcomes or the absence of positive outcomes is expected. This distinction is explained as a result of a person's dominant regulatory focus, which can be either a promotion or a prevention focus.

A promotion focus is induced by nurturance needs, strong ideals, and gain-nongain situations. An individual with a predominant promotion focus is concerned with the absence or presence of positive outcomes as, for example, ideals, advancement, aspirations, and accomplishments. Further, a person with a promotion focus is thought to aim towards approaching situations in which positive outcomes are present and avoiding situations in which they are absent. Thus, promotion-focused individuals prefer eager strategies when attaining a goal. Moreover, a promotion-focused person will experience cheerfulness-related emotions (e.g., happy, satisfied,

joyful) when succeeding to attain promotion goals and dejection-related emotions (e.g., disappointed, discouraged, sad) when failing to attain promotion goals (Higgins, Shah, & Friedman, 1997; Higgins, Grant, & Shah, 1999).

A prevention focus, on the other hand, is induced by security needs, strong oughts, and loss-nonloss situations. An individual with a predominant prevention focus is concerned with protection, safety, and responsibility or more generally the presence or absence of negative outcomes. In addition, a person with a prevention focus is thought to aim towards approaching situations in which negative outcomes are absent and avoiding situations in which they are present. Consequently, the strategies preferred by prevention-focused individuals are vigilant. Furthermore, a prevention-focused person will experience quiescence-related emotions (e.g., feeling calm or relaxed) when succeeding to attain prevention goals and agitation-related emotions (e.g., feeling uneasy, afraid, nervous) when failing to attain prevention goals (Higgins et al., 1999; Higgins et al., 1997).

Importantly, a prevention focus is *not* associated with negative valence and a promotion focus *not* with positive valence. Rather, a positive event is, for example, for a prevention-focused individual a situation in which negative outcomes are absent and for a promotion-focused person a situation in which positive outcomes are present. Accordingly, a negative event would be, for example, a situation in which negative outcomes are present for a prevention-focused individual and a situation in which positive outcomes are absent for a promotion-focused person.

A person's regulatory focus can be a chronic, individual difference variable as well as a temporary, situationally induced orientation. A person's chronic regulatory focus can be assessed via a variety of measuring instruments as, for example, the Regulatory Focus Questionnaire (RFQ; Higgins et al., 2001), a self-guide strength

measure (Shah & Higgins, 1997), or on Likert-type rating scales (e.g., Keller, 2004; Lockwood, Jordan, & Kunda, 2002). Interestingly, prevention and promotion pride, which are assessed via the RFQ were both found to be positively correlated with achievement motivation demonstrating that one needs to distinguish between two kinds of success related pride (Higgins et al., 2001).

1.2.1.1   Paradigms

In studies examining effects of a situationally activated regulatory focus, prevention and promotion focus have been manipulated in various ways. Mostly task payoffs for failure or success are framed in terms of gains or nongains to induce a promotion focus or as losses or nonlosses to induce a prevention focus (e.g., not gaining or gaining vs. losing or not losing money, Förster, Higgins, & Idson, 1998). In general, regulatory focus can be manipulated by directing a person's focus on negative vs. positive outcomes of different sorts (e.g., rejection vs. acceptance in one's majors honor society, Shah & Higgins, 1997; doing disliked vs. liked tasks, Higgins, 1997; enhancing the accessibility of oughts vs. ideals, Freitas & Higgins, 2002; being a poor friend vs. being a good friend, Higgins, Roney, Crowe, & Hymes, 1994; thinking about losses vs. gains, Higgins et al., 2003, etc.). In addition, it has been found that consequences of each regulatory focus can in turn prime the particular focus itself (see Aaker & Lee, 2006).

1.2.1.2   Consequences

Consequences of regulatory focus are manifold and were shown for individuals' emotional reactions, behaviors, and cognition. A promotion focus, for example, is associated with cheerfulness-dejection emotions, creativity, a distant

temporal perspective, abstract mental representations, a risky response bias, a preference for additive counterfactuals, and more generally a sensitivity to positive outcomes. A prevention focus, on the other hand, is associated with quiescence-agitation emotions, self-control, a proximal temporal perspective, concrete mental representations, a conservative response bias, a preference for subtractive counterfactuals, and more generally a sensitivity to negative outcomes (e.g., Crowe & Higgins, 1997; Freitas et al., 2002; Higgins et al., 1997; Higgins & Spiegel, 2004; Lee, Aaker, & Gardner, 2000; Pennington & Roese, 2003; Roese, Hur, & Pennington, 1999).

1.2.1.3 Moderators

In addition, regulatory focus has been shown to moderate a number of phenomena that present a basis for a couple of well established theories. For example, and also of interest for the subject at hand, is the moderation of outcomes as predicted by expectancy-value theories by regulatory focus (Shah & Higgins, 1997). In one of a series of their studies Shah and Higgins measured participants' chronic regulatory focus and then presented them with different scenarios varying the likelihood of doing well and the value of a course in their major. The indicated likelihood of taking the course showed a positive expectancy x value interaction for promotion-focused participants but a negative expectancy x value interaction for prevention-focused participants. That is, promotion-focused participants' motivation to take the course increased whereas prevention-focused participants' decreased as a function of the likelihood of doing well and the value of the course. Thus, the *classic* expectancy x value effect was replicated for promotion-focused individuals but *reversed* for prevention-focused individuals. It is argued that promotion-focused people want to

maximize gains or positive outcomes and are highly motivated when the value is high as well as when the expectancy to attain this value is high. Prevention-focused people, on the other hand, see their goals as oughts or necessities to prevent losses or negative outcomes. This necessity becomes stronger with an increase in value whereas the expectancy of attainment matters less as the value or necessity increases. In other words when something *must be done* prevention-focused people care less how likely it is that it *can be done*. The result is a negative expectancy x value effect.

Now that the concept of regulatory focus has been introduced the question remains when a particular regulatory focus will result in a regulatory fit. I will address this question in the next section.

1.2.2   From Regulatory Focus to Regulatory Fit

According to Aaker and Lee (2006, p. 15), a "regulatory fit is conceptualized as […] a match between the manner in which a person pursues a goal and his or her goal orientation". As outlined above, a person's goal orientation depends on whether a person has a predominant promotion or prevention focus. When promotion-focused, a person is oriented towards approaching gains and avoiding nongains, whereas when prevention-focused, a person is oriented toward approaching nonlosses and avoiding losses. Thus, a promotion-focused person will experience regulatory fit when approaching gains and avoiding nongains, whereas a prevention-focused person will experience regulatory fit when approaching nonlosses and avoiding losses. Consequently, when the strategies and activities with which a certain goal is pursued fit the regulatory orientation, a regulatory fit results. On the contrary, if the strategies and activities of goal-pursuit do not fit a person's goal orientation, a regulatory *nonfit* is thought to occur.

Two different approaches to operationalize regulatory fit have been proposed: the outcome-based and the process-based approach (see Aaker & Lee, 2006). Individuals with a promotion focus are sensitive to positive outcomes whereas individuals with a prevention focus are sensitive to negative outcomes. Consequently, according to the outcome-based approach, a regulatory fit will occur for a promotion-focused person when confronted with the absence or presence of positive outcomes and for a prevention-focused person when confronted with the absence or presence of negative outcomes. Spiegel, Grant-Pillow, and Higgins (2004), for example, manipulated regulatory focus and outcomes within a health message concerning the consumption of fruits and vegetables. The message was either concerned with accomplishments (promotion focus) or safety (prevention focus) by eating fruit and vegetables. In addition, the message either highlighted the benefits of eating fruits or vegetables (positive outcomes) or the costs of *not* eating fruits or vegetables (negative outcomes). As a result, participants in the regulatory fit conditions (i.e., promotion focus and positive outcomes or prevention focus and negative outcomes) were significantly more motivated to eat fruits and vegetables in the subsequent week than participants in the regulatory nonfit conditions (i.e., promotion focus and negative outcomes or prevention focus and positive outcomes). In fact, participants experiencing regulatory fit ate 21% more fruits and vegetables than participants experiencing regulatory nonfit (see Figure 6).

Figure 6. Intake of fruit and vegetable servings per week by regulatory focus and outcome framing (adapted from Spiegel et al., 2004).
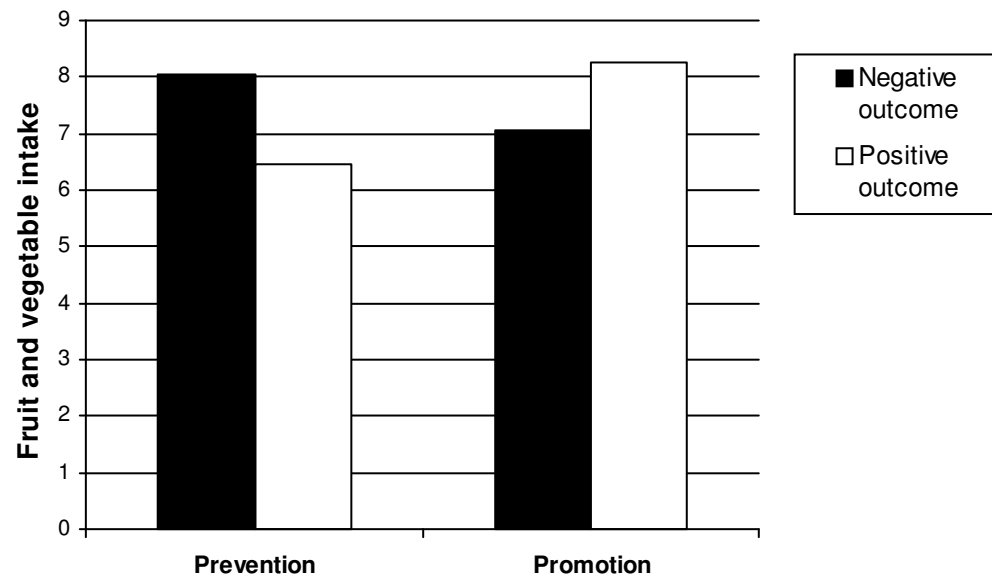
Further, a person with a prevention focus prefers vigilant strategies whereas a person with a promotion focus prefers eager strategies when making judgments. Thus, according to the process-based approach, a person can experience regulatory fit when the decision-making process and the strategies to reach a desired outcome or avoid and undesired outcome fit the goal orientation. Cesario, Grant, and Higgins (2004), for example, assessed participants' chronic regulatory focus before handing them a persuasive message about the implementation of a new after-school program. This message either used eager means (e.g., "the program will support more children to succeed") or vigilant means (e.g., "the program will prevent more children from failing") to promote the after-school program. The message was rated as more persuasive and the program was evaluated as more positive by participants experiencing regulatory fit (i.e., promotion-focused individuals presented with eager

means or prevention-focused individuals presented with vigilant means) as opposed to participants experiencing regulatory nonfit (i.e., promotion-focused individuals presented with vigilant means or prevention-focused individuals presented with eager means; see Figure 7).

Figure 7. Perceived message persuasiveness by regulatory focus and adopted means (adapted from Cesario et al., 2004).
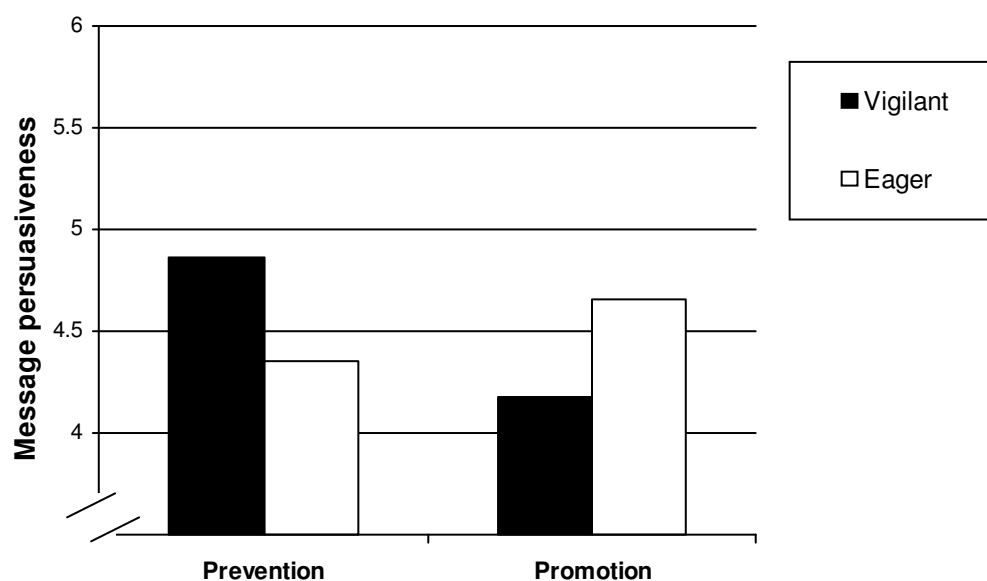
These examples show that regulatory fit can enhance motivation and message persuasiveness. Further, those examples demonstrate that a regulatory fit can be induced by a fit between a person's regulatory orientation and outcome as well as the kind of decision process or strategy involved. Some authors put forward that an outcome framing activates a certain strategy or particular means. For example, a gain-nongain framing would activate eager means and a loss-nonloss framing would activate vigilant means (e.g., Cesario et al., 2004; Idson, Liberman, & Higgins, 2000). The differentiation between the outcome- and the process-based approach is helpful

for understanding how regulatory fit results from different regulatory orientations from a conceptual and a practical perspective. However, this differentiation seems not necessary on a theoretical level and therefore will not be made in the remainder of this thesis.

Overall a regulatory fit will occur whenever a person's regulatory orientation is sustained or as Shah, Higgins and Friedman (1998, p. 291) put it "when the dispositions, task incentives, and means of goal attainment all share the same regulatory focus". Given that the consequences of regulatory focus in turn also induce the very same regulatory focus, a person can experience a regulatory fit when he or she is confronted with an outcome or is prompted to use a strategy that would have resulted from his or her regulatory focus (e.g., confronting a loss-nonloss situation when under a prevention focus or confronting a gain-nongain situation when under a promotion focus, being primed with quiescence-agitation emotions when under a prevention focus or being primed with cheerfulness-dejection emotions when under a promotion focus etc.). As described earlier a regulatory focus is associated with a vast array of consequences. Given that a regulatory fit is a result of a person's regulatory focus, the consequences of a regulatory fit can also be seen for a wide range of variables.

1.2.2.1   Consequences

Regulatory fit has two major elements a) an increase of motivational intensity and b) an effect of *feeling right*. People prefer to pursue a goal in a manner that sustains their regulatory state, which will further intensify their motivation[4] to pursue that goal (cf. Higgins, 2000). Consequently, a person's motivational intensity for

---

[4] In the remainder of this thesis the term *motivation* will be used when referring to individuals' motivation to pursuit a relevant goal.

whatever he or she may be doing will increase from regulatory fit and decreases from regulatory nonfit. Further, regulatory fit is thought to lead to a subjective experience, which makes a person *feel right* about his or her reactions. In contrast, regulatory nonfit should make a person *feel wrong* about his or her reactions. As a result, a person will increase or decrease his or her reactions. These reactions can be positive or negative in valence and anything ranging from positive or negative feelings, object and moral evaluations, to being persuaded by communications of positive or negative content (e.g., Higgins et al., 2003; Idson, Liberman, & Higgins, 2004; Camacho, Higgins, & Luger, 2003). In sum, regulatory fit is thought to enhance motivation whereas regulatory nonfit is thought to lessen it. Further, a person's initial reactions are assumed to become more intense due to *feeling right* under regulatory fit and less intense or even reverse due to *feeling wrong* under regulatory nonfit.

Motivational intensity. To date, several studies have supported the notion of an increase of motivational intensity as well as the effect of feeling right from regulatory fit. The increase of motivational intensity was shown for the motivation to process task-relevant information as well as the motivation to work on the task itself. The effect of feeling right from regulatory fit is thought to *spill over* to subsequent judgments and has been shown for moral evaluations, feelings of guilt, self-confidence, intensity of feelings, and most importantly for perceived value and message persuasion.

An example for the increase of motivation to process information is a study by Wang and Lee (2006) where, when seeing an ad for a toothpaste which contained both promotion claims (i.e., breath freshening, teeth whitening, tooth enamel strengthening) and prevention claims (i.e., cavity prevention, gingivitis prevention, plaque control), promotion-focused participants spent more time reviewing promotion

than prevention features whereas prevention-focused participants spent more time reviewing prevention features than promotion features. Further, it was shown that participants who have an independent self-view, which is associated with a promotion focus (cf. Lee, et al., 2000), had a greater recall for a promotion-framed message whereas participants who have an interdependent self-view, which is associated with a prevention focus, had a greater recall for a prevention-framed message compared to the regulatory nonfit conditions (Aaker & Lee, 2001). In another study, Evans and Petty (2003) showed that participants, who either received strong or weak arguments concerning a breakfast product, were more motivated to process the information in regulatory fit than in nonfit conditions and consequently showed a more favorable attitude for the breakfast product in the strong compared to the weak argument condition. Participants in the regulatory nonfit conditions however differentiated less well between strong and weak arguments than participants in the regulatory fit conditions.

A greater motivation or persistence for the task itself was shown for prevention-focused participants who solved more anagrams when instructed to work in a vigilant manner whereas promotion-focused participants solved more anagrams when instructed to work in an eager manner (e.g., Förster et al., 1998; Lee & Hong, 2006; Shah & Higgins, 1997). Furthermore, participants whose goal-pursuit strategies fit as opposed to conflicted with their regulatory orientations showed more physical endurance on a handgrip task and better self-control when resisting temptation (choosing an apple over a chocolate bar; Lee & Hong, 2006). Freitas and Higgins (2002) found that promotion-focused participants aiming to attain a high GPA imagined eager strategies to be more enjoyable (i.e., be prepared for tests, spend more time at the library) than vigilant strategies (i.e., spend less time at parties, stop

procrastinating) whereas prevention-focused participants indicated that they would find vigilant strategies more enjoyable than eager strategies. Additionally, Freitas and Higgins found that promotion-focused participants actually found an eagerness-framed task more interesting, enjoyable[5], exciting, and were more motivated to repeat the task in the future than a vigilant-framed task whereas the reverse was true for prevention-focused participants. Taken together, there has been ample empirical evidence that the experience of regulatory fit results in an increase of motivational intensity.

Feeling right. An example for the effect of feeling right from regulatory fit was shown in a study by Camacho et al. (2003) where a conflict resolution carried out in eager terms was judged as being more right by promotion-focused participants than a resolution that had been carried out in a vigilant manner. The reverse was true for prevention-focused participants. In another study, Camacho et al. found that feeling wrong after a regulatory nonfit was transferred to moral evaluations, i.e., individuals experienced an increase in their feelings of guilt. Prevention-focused individuals expressed higher feelings of guilt when recalling errors of commission, which are an indicator for a risky response bias and thus sustain a promotion focus, than when committing errors of omission, which are an indicator for a conservative response bias and thus sustain a prevention focus. Promotion-focused individuals, on the other hand, felt guiltier when recalling errors of omission than when committing errors of commission.

Further, participants in the regulatory fit conditions felt right about and have shown higher confidence in their evaluation ratings than those in nonfit conditions

---

[5] Note that *task enjoyment* in Freitas et al.'s (2002) study is not the same as the *feeling* of joy rather than a measure for task interest and motivation. This distinction is important because the effects of regulatory fit on motivation sometimes differ from those on feelings in valence as is reported in the following paragraphs.

(Cesario et al., 2004). Importantly, Cesario et al. proposed that feeling right is not the same as feeling good. In support of this assumption they have shown that feeling right from regulatory fit is independent from positive mood and led to an increase in positive as well as *negative* evaluations. Furthermore, in a series of studies by Idson, Liberman, and Higgins (2004), it was shown that feeling right from regulatory fit or feeling wrong from regulatory nonfit also had an influence on the intensity with which individuals experienced their feelings. Imagining negative outcomes increased the intensity of negative feelings for prevention-focused participants but not for promotion-focused participants whereas imagining positive outcomes increased the intensity of positive feelings for promotion-focused but not for prevention-focused participants. Notably, Idson et al's studies again demonstrated that feeling right does not necessarily equal feeling good. If a person feels right about feeling good he or she is indeed prone to feel better, but if one feels right about feeling bad one is inclined to feel worse.

The most influential consequence of feeling right that Higgins (2000; 2006) pointed out is the *value from regulatory fit*. A value from feeling right through regulatory fit has been transferred to evaluations of anticipated outcomes and to the monetary value of objects (e.g., Higgins & Idson, 2000 cited in Higgins, 2000; Higgins et al., 2003). In one of the studies, participants were asked to solve anagrams either with eager or with vigilant means. Participants felt better about an anticipated success in the task when promotion-focused and asked to use eager means and prevention-focused and asked to apply vigilant means compared to the other two conditions (Higgins & Idson, 2000). In another study by Higgins at al. (2003) participants were asked to choose between a (more preferred) coffee mug and a (less preferred) pen by either comparing what they would loose when not choosing the

preferred object as opposed to what they would gain when choosing the preferred object (all participants preferred the mug). Then they were asked to estimate the dollar-value of the mug. Prevention-focused participants when thinking about what they would loose and promotion-focused participants when thinking about what they would gain assigned a higher dollar-value to the mug than participants in the other conditions. Other authors have replicated this effect of the assignment of higher monetary value to objects chosen under regulatory fit compared to nonfit with different objects and manipulations (e.g., Avnet & Higgins, 2006a; Higgins & Idson, 2000).

This effect of value from feeling right through regulatory fit was also shown for product evaluations. In those studies, participants mostly received a persuasive communication that either described a product as having promotion or prevention features (e.g., Briley & Aaker, 2006; Lee & Aaker, 2004; Wang & Lee, 2006) or they received the persuasive communication after they had experienced regulatory fit (e.g., Cesario et al., 2004). In both cases the product or the goal described in the communication were rated as more favorably in the regulatory fit than in regulatory nonfit conditions. Lee and Aaker, for example, presented participants with an ostensible ad for a grape juice which either emphasized promotion claims (i.e., energy creation) or prevention claims (i.e., cancer and heart disease prevention). Furthermore, they activated a gain or a loss frame (i.e., get energized/prevent clogged arteries vs. don't miss out on getting energized/preventing clogged arteries). Participants who were given the ad with promotion claims in a gain frame or with prevention claims in a loss frame evaluated the grape juice more favorably than the participants in the regulatory nonfit conditions. Cesario at al. asked participants to either list a current "hope and aspiration" (promotion focus) or a "duty or obligation"

(prevention focus). Then participants were asked to list means by which they could achieve their afore-listed goal, which should be either eager means (i.e., "Please list some strategies you could use to ensure that everything goes right") or vigilant means (i.e., "Please list some strategies you could use to avoid anything that could go wrong"). Next, all participants received an essay endorsing an after-school program. Participants in the regulatory fit conditions had a better opinion of the after school program and rated the essay as more persuasive than those in the nonfit conditions. Thus, the effect of feeling right from a prior task had *spilled over* to the evaluation and the persuasiveness of a subsequent persuasive stimulus.

As described above, an impressive body of recent research has demonstrated that regulatory fit will enhance individuals' motivation as well as create a feeling of rightness which enhances the evaluation and persuasiveness of stimuli. Nonetheless, the empirical evidence of how and when regulatory fit can have such effects on motivation, evaluation, and persuasion is still ambiguous.

1.2.2.2   *How and When Regulatory Fit Effects Emerge*

Most authors proposing or investigating underlying mechanisms of regulatory fit effects either focus on the effect of feeling right or compound the effects of feeling right and increased motivational intensity. This is not surprising given that the effect of feeling right should lead to an increase of whatever reaction a person is engaging in at the time and this reaction might as well be a person's motivation. On the other hand, a person's increase in motivation might be the source of an increase of whatever other reactions a person is engaging in at the time. Consequently, these two effects from regulatory fit are somewhat intertwined but "a critical goal of further research is to try to disentangle the two components of regulatory fit, that is, the feeling-right

personal experience and the strength of engagement" (Avnet & Higgins, 2006b, p. 26). For the time being, though, I want to review the attempts that have been made up to date in order to investigate the nature of regulatory fit effects.

Cesario at al. (2004, p. 399) describe regulatory fit as "a subjective experience of feeling right [that] is misattributed and transferred to strength of engagement or evaluation of persuasive stimuli". This definition incorporates an explanation of regulatory fit effects that has been shared by many authors, namely that of a source confusion (e.g., Camacho et al., 2003; Cesario et al., 2004; Higgins et al., 2003; Lee & Aaker, 2004; Schwarz, 2006). A subjective experience (i.e., feeling right) is used as a source of information and then transferred to subsequent judgments and actions. Such a feeling-as-information account is known from other sorts of subjective experiences (see Bless & Forgas, 2000).

No direct measurement of *feeling right* has been established to my knowledge. However, there is some empirical evidence supporting the source confusion account. For example, regulatory fit effects on people's judgments could be eliminated when individuals were made aware of a possible source confusion. In particular, when participants in those studies were told that "sometimes thinking about using the right means to attain each goal can make people "feel right" about their goal pursuit" (Cesario et al., 2004, p. 395), regulatory fit effects on persuasion were eliminated or even reversed. In another study, it was shown that the subjective experience of feeling right might be due to the experience of processing fluency (Lee & Aaker, 2004). In this study, regulatory fit effects on evaluation were mediated by perceived ease of information processing. Processing fluency had previously been shown to be a basis of positive evaluations in numerous studies as well was the elimination of this effect

shown when the perceivers' attention was drawn to processing fluency as a source of their evaluations (for a review see Reber, Schwarz, & Winkielman, 2004).

Additional support for the source confusion account was obtained by studies that established individuals' processing mode as a moderator of regulatory fit effects. Since people rely more on their subjective experiences as a source for their judgments when their processing capacity is limited (e.g., Petty & Cacioppo, 1986) regulatory fit effects should be more pronounced when people engage in heuristic (vs. systematic) processing. Indeed regulatory fit effects on evaluations have been found to be moderated by participants' processing mode (i.e., heuristic vs. systematic; Briley & Aaker, 2006), to occur under low as opposed to high involvement conditions (Wang & Lee, 2006), and when individuals' need for cognition was low as compared to high (Evans & Petty, 2003). However, other studies by Aaker and Lee (2001) showed that information was processed more systematically under regulatory fit as compared to nonfit conditions appear to be in contrast to the finding that regulatory fit is associated with heuristic processing. Yet, taken together, these studies suggest that regulatory fit is more likely to occur when people are not motivated to process information but the experience of regulatory fit can result in an increase in the motivation to process information. Thus, it is necessary to distinguish between processing mode as a precursor and processing mode as a consequence of regulatory fit effects.

Nonetheless, the results of the studies described above cannot be taken as evidence that regulatory fit effects do *not* occur under high involvement or high motivation conditions. If people are highly involved or motivated, they might still experience a regulatory fit but when highly involved both, participants in the regulatory fit and nonfit conditions, are highly motivated to begin with and a ceiling effect might prevent showing any differences in their reactions or behavioral output

variables that are due to a regulatory fit. As a matter of fact, within most designs conditions which contain both, regulatory nonfit *and* low involvement seem to differ the most from all other conditions in that they show the lowest motivation or the least persuasion by a stimulus (e.g., Briley & Aaker, 2006). This suggests that in the low involvement conditions regulatory fit enhanced participants' reactions as compared to the nonfit condition, whereas in the high involvement conditions participants reactions in all conditions were already high to begin with (see Figure 8). Furthermore, regulatory fit effects have also been found - albeit somewhat weaker - for highly involved participants (e.g., Evans & Petty, 2003).

Figure 8. Attitudes towards an ad after receiving a positive message as a function of regulatory fit and processing mode (adapted from Briley & Aaker, 2006)
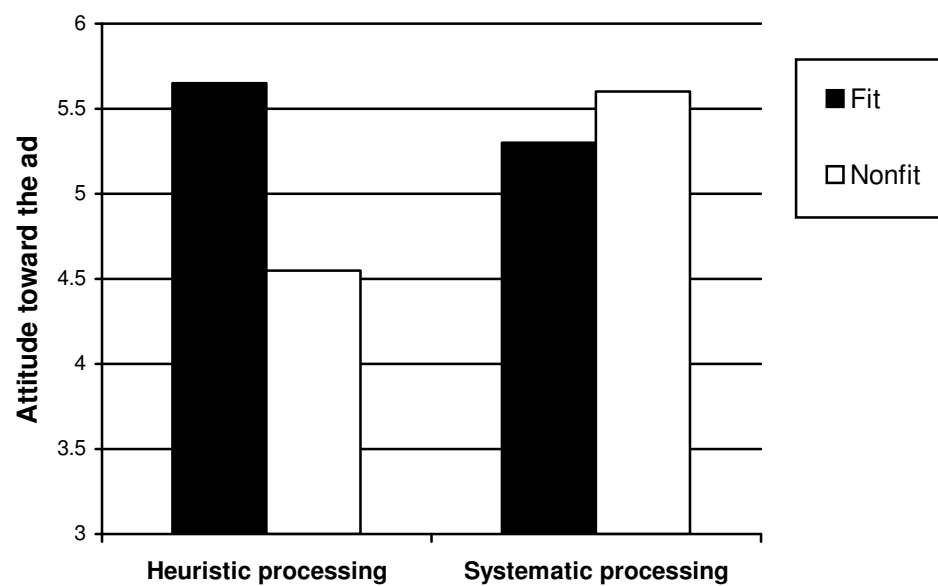
In sum, it has been argued that regulatory fit effects, that is, feelings of rightness *and* increased motivation are due to a source confusion. The feeling of

rightness under regulatory fit serves as a kind of subjective experience and thus enhances motivation, reactions, and behavior. The empirical evidence as a whole yields support for this argument. However, the effect of feeling right has never been measured directly. Thus, it cannot be ruled out that there are other causes, which may fully or in part account for these effects.

Altogether it has been shown that when a person's regulatory focus gets sustained, his or her reactions will increase. This increase in reactions results from a regulatory fit effect which in particular has been shown to increase motivation and the value or persuasiveness of stimuli. These reactions are thought to derive from a feeling of rightness through regulatory fit, which due to a source confusion is transferred to one's own reactions including motivation and the evaluation of messages and objects. The opposite should occur when a person's regulatory focus is disrupted. A feeling of wrongness from regulatory nonfit is thought to be transferred to a person's reactions. Those reactions should in turn be reduced or even reversed, motivation and the value or persuasiveness of stimuli should decrease.

Turning back to the question from the previous chapter when motivation will increase or decrease under stereotype threat raises the issues whether regulator fit effects could be present under stereotype threat. It is argued here that a regulatory fit or nonfit can be induced through stereotype threat. In turn both, an increase (vs. decrease) in motivation or a feeling of rightness (vs. wrongness), can be the result. When and how this is the case will be discussed in the next section.

<center>1.3   Regulatory Fit from Stereotype Threat</center>

A prerequisite for experiencing regulatory fit or nonfit is that a person needs to be situationally or chronically promotion- or prevention-focused. Further, according to Shah et al. (1998, p. 291) regulatory fit occurs when "dispositions, task incentives, and means of goal attainment all share the same regulatory focus". Thus, for a prevention-focused person either task incentives or the means of goal-attainment have to be associated with a prevention focus in order to experience regulatory fit or be associated with a promotion focus in order to experience regulatory nonfit. The opposite should hold for a promotion-focused person. Consequently, for a regulatory fit to occur under stereotype threat, the task incentives or means of goal attainment in the threat and the no threat conditions have to be associated with a particular regulatory focus. I will propose in the following that stereotype threat is associated with a prevention focus, whereas no stereotype threat is associated with a promotion focus.

1.3.1   Stereotype Threat and Regulatory Focus

A person's regulatory orientation can result from the interests or concerns that guide his or her behavior (see Avnet & Higgins, 2006a). Regulatory focus theory (Higgins, 1997, 1998) states that a prevention focus is concerned with safety, responsibility, and obligations (oughts) whereas a promotion focus is concerned with accomplishments, hopes, and aspirations (ideals). Further, a prevention-focused person is particularly sensitive to the absence or presence of negative outcomes (nonlosses or losses) and a promotion-focused person is particularly sensitive to the absence or presence of positive outcomes (nongains or gains). Moreover, a prevention

goal is to avoid losses and to approach nonlosses whereas a promotion goal is to approach gains and avoid nongains.

In a stereotype threat situation, negative outcomes in the form of negative stereotypic expectancies are salient (i.e., the negatively stereotyped group is commonly expected to do worse than the non-negatively stereotyped group in the specific situation or task) and a person is concerned with not confirming the negative stereotype. The outcomes, concerns and goals in the stereotype threat condition match a prevention focus. It can be seen as an *ought* to not confirm the stereotype in order to either prevent a negative self-concept and/or a negative image of one's negatively stereotyped group. Thus, the goal is not to confirm the stereotype, which would be a loss, and/or to disconfirm the stereotype, which would be a nonloss. Conversely, in a no stereotype threat situation positive outcomes in the form of relatively positive stereotypic expectancies are salient (i.e., the commonly negatively stereotyped group is thought to do equally well or better than the commonly non-negatively stereotyped group in the specific situation or task) and a person is concerned with conforming to the relatively positive stereotype[6]. The outcomes, concerns and goals in the no stereotype threat condition match a promotion focus. It can be seen as an ideal to confirm the relatively positive stereotype in order to either promote a positive self-concept and/or a positive image of one's positively stereotyped group. Thus, the goal is to conform to the stereotype which would be a gain and/or not to disconfirm the stereotype which would be a nongain. Moreover, a loss/nonloss situation is thought to temporarily induce a prevention focus, and a gain/nongain situation is thought to temporarily induce a promotion focus (Higgins, 1997). Consequently, stereotype

---

[6] The term stereotype is used here in the sense of an ascribed stereotype meaning that a set of beliefs about a group is acquired in the situation and not necessarily culturally shared (for a review of the disaccord on the definition for stereotypes see Schneider, 2004, pp. 16). Thus, a positive stereotype refers here to the relatively positive expectations that are present in no stereotype threat situations for members of the usually negatively stereotyped group.

threat should induce a prevention focus and no stereotype threat should induce a promotion focus in the momentary situation. Importantly, this does *not* mean that the salience of a negative stereotype is equivalent with a prevention focus and the salience of a positive stereotype is equivalent with a promotion focus. Rather, the possibility to apply the negative (positive) stereotype to one's self-concept or group's image triggers a loss/nonloss (gain/nongain) situation which is further thought to induce a prevention (promotion) focus (cf. Higgins, 1997).

Further support for the assumption that stereotype threat is associated with regulatory focus can be found in the literature (e.g., Idson et al., 2004; Seibt & Förster, 2004). Idson et al. (2004), for example, found that failure was rated to be a more intense experience when in a prevention than a promotion focus, whereas success was rated as a more intense experience when in a promotion than a prevention focus. In a stereotype threat condition the failure of one's group is salient in the situation, and in a no stereotype threat situation the (relative) success of one's group is salient in the situation. Thus, the results of Idson et al.'s study further point to an association between stereotype threat and a prevention focus and no stereotype threat and a promotion focus. Furthermore, Seibt and Förster could show in their studies that negative stereotypes instigate avoidance strategies, slower and more accurate performance, and better analytical performance as opposed to positive stereotypes which instigated approach strategies, led to faster and less accurate performance, and better creative performance. A preference for avoidance strategies, accuracy, and an analytical processing style were found to be associated with a prevention focus, whereas a preference for approach strategies, speed, and a creative processing style were shown to be associated with a promotion focus (e.g., Higgins, 1997; Förster, Higgins, & Bianco, 2003; Friedman & Förster, 2001). Consequently, the results of the

studies by Seibt and Förster lend further support to the assumption that stereotype threat is associated with a prevention focus, whereas no stereotype threat is associated with a promotion focus. Having established the association between the different stereotype threat conditions and regulatory foci, the next section will discuss how regulatory fit effects can occur under stereotype threat.

1.3.2   Stereotype Threat and Regulatory Fit

As pointed out above, the task incentives (i.e., negative vs. positive outcomes) and means of goal attainment (i.e., avoid losses vs. nongains and approach nonlosses vs. gains) under stereotype threat match those in a prevention focus and under no stereotype threat match those in a promotion focus. Thus, a regulatory fit should occur for prevention-focused individuals when confronted with stereotype threat and for promotion-focused individuals when experiencing no stereotype threat. Conversely, a regulatory nonfit should occur for prevention-focused individuals when experiencing no stereotype threat and for promotion-focused individuals when confronted with stereotype threat. Moreover, as suggested by past research on regulatory fit (e.g., Camacho et al., 2003; Cesario et al., 2004; Higgins et al., 2003; Idson, et al., 2004; Spiegel et al., 2004; Wang & Lee, 2006) regulatory fit from stereotype threat should lead to an increase in motivation and the value or persuasiveness of stimuli whereas regulatory nonfit from stereotype threat should lead to a decrease in motivation and the value or persuasiveness of stimuli.

As an example, consider a female student who is asked to join a homework group doing math but is also told that usually girls can't do math (i.e., stereotype threat). A negative outcome is salient in this situation, which would be to confirm the negative stereotype. Thus, confirming the stereotype is a loss and disconfirming it is a

nonloss. If the student is predominantly prevention-focused she will be sensitive to the negative outcomes and feel inclined towards avoiding a loss and approaching a nonloss. Facing a situation where she is given the chance to approach a nonloss and/or avoid a loss will feel right to her and should result in an increase in the intensity of her reactions as well as the persuasiveness or evaluation of subsequent stimuli. In other words, she will most likely be motivated to join the homework group in order to disconfirm the stereotype. If, on the other hand the student has a predominant promotion focus she will be sensitive to positive outcomes but less sensitive to the negative outcomes in the situation. Further, facing a situation where her action opportunities are the approach of a nonloss and/or avoidance of a loss would not match her regulatory orientation and consequently feel wrong to her, which should result in a decrease in the intensity of her reactions as well as the persuasiveness or evaluation of subsequent stimuli. Thus, her motivation to join the homework group will not increase but most likely decrease.

Now consider almost the same situation with the modification that the student is told that usually girls have done really well in math in this particular homework group (i.e., no stereotype threat). A positive outcome is salient in this situation, which is to conform to the positive stereotype. Thus, conforming to the stereotype is a gain and disconfirming it is a nongain. If the student is predominantly prevention-focused, she will be sensitive to negative outcomes but less sensitive to the positive outcomes in the situation. Further, facing a situation where her action opportunities are the approach of a gain and/or avoidance of a nongain will not match her regulatory orientation and consequently feel wrong to her, which should result in a decrease in the intensity of her reactions as well as the persuasiveness or evaluation of subsequent stimuli. Thus, her motivation to join the homework group will not increase but most

likely decrease. If, on the other hand, the student is predominantly promotion-focused she will be sensitive to the positive outcomes and feel inclined towards approaching a gain and avoiding a nongain. Facing a situation where she is given the chance to approach a gain and/or avoid a nongain will feel right to her and should result in an increase in the intensity of her reactions as well as the persuasiveness or evaluation of subsequent stimuli. In other words, she will most likely be motivated to join the homework group in order to conform to the stereotype.

Further indicators for the assumption of regulatory fit effects from stereotype threat can be found in the literature (e.g., Förster, Grant, Idson, & Higgins, 2001; Idson & Higgins, 2000; Seibt & Förster, 2004). Seibt and Förster, for example, showed that promotion-related messages were better recalled than prevention-related messages when positive stereotypes about participants' in-group were salient whereas prevention-related messages were better recalled than promotion-related messages when negative stereotypes about participants' in-group were salient[7]. These results are in line with previous research on regulatory fit which has shown that information was better recalled when the message framing and personal dispositions shared the same regulatory focus (Aaker & Lee, 2001).

Moreover, Förster et al. (2001) demonstrated that the motivational effects of success and failure feedback were moderated by regulatory focus. Specifically, motivation on a task employing strategic approach was higher after success as compared to failure feedback for promotion-focused participants and no differences were found for prevention-focused participants. Contrary, motivation on a task employing strategic avoidance was higher after failure than after success feedback for prevention-focused participants and no differences were found for promotion-focused

---

[7] Previous studies have shown that stereotype salience can produce stereotype threat effects, if those stereotypes are self-relevant (see Davies et al., 2002; Davies et al., 2005; Marx & Stapel, 2006b).

participants. In line with Förster et al.'s findings, Idson and Higgins (2000) found that promotion-focused individuals have shown higher motivation and subsequent performance than prevention-focused individuals following success feedback whereas the reverse was shown following failure feedback. Specifically, they found that participants generated more solutions over time for the last ten anagrams of a set following success feedback when promotion-focused and following failure feedback when prevention-focused (see Figure 9).

Figure 9. Mean number of anagram solutions generated (z-scores) on the second half of the last set of anagrams as a function of regulatory focus and type of feedback (adapted from Idson & Higgins, 2000).
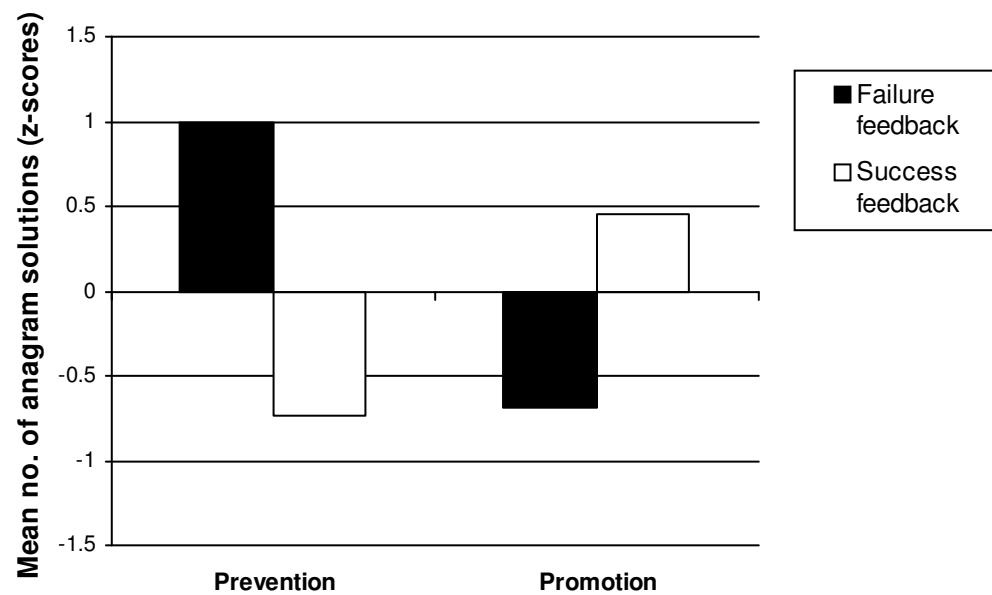
Idson and Higgins (2000) argue that because individuals are motivated to approach gains when promotion-focused, success feedback makes them believe they have "everything to gain" (p. 585) and consequently they are eager to continue gaining. Furthermore, they argue that because individuals are motivated to avoid

losses when prevention-focused, failure feedback makes them believe they have "everything to lose" (p. 586) and thus they are vigilant to prevent losing more. Given that no stereotype threat can be regarded as success feedback and stereotype threat can be regarded as failure feedback on a group level, Idson and Higgins (2000) rationale can be transferred to the expected interactive effects of stereotype threat and regulatory focus supporting the Regulatory Fit from Stereotype Threat Assumption. In particular, the assumption of an increase in motivation under no stereotype threat for promotion-focused individuals and under stereotype threat for prevention-focused individuals is affirmed.

It is hypothesized here that stereotype threat conditions are associated with a prevention focus, whereas no stereotype threat conditions are associated with a promotion focus. Consequently, regulatory fit will result from a stereotype threat and a prevention focus or a no stereotype threat and a promotion focus. Conversely, a regulatory nonfit will result from a stereotype threat and a promotion focus or a no stereotype threat and a prevention focus. The consequences of regulatory fit from stereotype threat are assumed to be identical to regulatory fit effects reported in the literature. That is, a regulatory fit (vs. nonfit) from stereotype threat is assumed to increase (vs. decrease) a person's motivational intensity and make a person feel right (vs. wrong) about his or her reactions, which in turn will increase (vs. decrease) the evaluation and persuasiveness of subsequent stimuli.

1.3.2.1 *Motivational Intensity and Performance*

Although, the main focus of investigation in this thesis is that of motivation and not that of performance some particular issues regarding stereotype threat induced regulatory fit effects on performance need to be discussed.

In several studies investigating the effects of regulatory fit performance is used as an indicator for motivation (e.g., Förster et al., 1998; Förster et al., 2001; Shah et al., 1998). However, as outlined in the previous chapters, stereotype threat effects, which have detrimental effects on performance, produced differential effects on motivation (e.g., Davies et al., 2002; Nussbaum & Steele, 2007). Furthermore, studies on stereotype threat that have included performance and motivational measures in the same paradigm do not present a clear picture. Davies et al., for example, have shown that both performance and motivation decreased under stereotype threat as compared to no threat when employing almost the same stereotype threat manipulation. In particular, women who were exposed to gender-stereotypic commercials (stereotype threat) showed lower scores on a math section of the GRE (Study 1) and were less motivated to attempt math items (Study 2) than men who were exposed to gender-stereotypic commercials and women who were exposed to counter-stereotypic (Study 1) or neutral commercials (Study 2). Consequently, stereotype threat had the same effect on performance as on motivation. However, other studies have shown that motivation for counter-stereotypic behavior can *increase* under stereotype threat when at the same time performance will *decrease* (e.g., Pronin et al., 2004; Steele & Aronson, 1995). Conversely, counter-stereotypic behavior, i.e., engagement in a math task, decreased under stereotype threat in the study by Davies et al., presumed that the engagement in a math task is a counter-stereotypic behavior for women. Consequently, the results of these studies and the ones of Davies et al. are somewhat contradictory.

As pointed out earlier in this thesis, motivation has sometimes shown to increase and other times to decrease under stereotype threat. These differential results are explained here by a fit or nonfit of a person's motivational orientation with her or

his goals. However, if differential effects of performance under stereotype threat could be explained by the same effect, the effects of stereotype threat on motivation and performance should be equivalent and consistent across studies. Given that this is sometimes but not always the case gives rise to the assumption that if induced through stereotype threat, regulatory fit effects on performance might present a special case. In fact there is some empirical evidence showing that promotion-focused individuals have better performance under negative expectancies (i.e., stereotype threat) than prevention-focused individuals whereas the opposite was true under positive expectancies (i.e., no stereotype threat; Keller & Bless, 2008). Those findings at first glance contradict the Regulatory Fit from Stereotype Threat Assumption. However, Keller's and Bless' theoretical assumptions which are summarized in Keller's MERF model (Moderation of Expectancy Effects by Regulatory Focus) are very much in line with the assumptions stated for the *Regulatory Fit from Stereotype Threat Hypothesis*.

In the MERF model, Keller and Bless (2008) propose that a prevention-focused individual will be particularly sensitive to negative expectancies as present under stereotype threat as opposed to positive expectancies as present under no stereotype threat. A promotion-focused individual on the other hand should be particularly sensitive to positive expectancies as present under no stereotype threat as opposed to negative expectancies as present under stereotype threat. In addition, Keller and Bless also state that in negative expectancy situations prevention-focused individuals, but not promotion-focused individuals, will fear to confirm these negative expectancies. Conversely, in positive expectancy situations promotion-focused individuals, but not prevention-focused individuals, will fear not being able to conform to these positive expectancies. So far the assumptions made in the MERF model and for the Regulatory Fit from Stereotype Threat Assumption resemble each

other. However, Keller and Bless state further that negative expectancy situations when prevention-focused and positive expectancy situation when promotion-focused will be perceived as more demanding and threatening and consequently *impede* performance. At this point the MERF model and the Regulatory Fit from Stereotype Threat Assumption still put forward the same processes (i.e., the fear of confirming vs. not conforming to the negative vs. positive expectancy) but at the same time, the predicted consequences differ. For the regulatory fit from stereotype threat conditions introduced in this thesis, i.e., stereotype threat and prevention focus or no stereotype threat and promotion focus, the MERF model assumes a perceived threat that will result in a *decrease in performance* whereas the Regulatory Fit from Stereotype Threat Assumption predicts an *increase in motivation* and the feeling of rightness. The differences in the predicted consequences by the MERF model and the Regulatory Fit from Stereotype Threat Assumption are not necessarily contradictory. In fact, a *decrease in performance* under stereotype threat has been argued to occur for difficult test items due to an *increase in motivational strength* (i.e., Keller, 2007). Keller refers to the model of optimal motivational strength (cf. Atkinson, 1974) and points out that an increase in motivational strength can increase test performance on easy test items but impede test performance on difficult test items. Indeed empirical evidence has shown that participants under stereotype threat, who were assumed to be highly motivated to disprove the stereotype, showed performance impediments on difficult test items as opposed to no threat conditions but showed better performance under stereotype threat as opposed to no threat (O'Brien & Crandall, 2003) or no differences between stereotype threat and no threat conditions (Keller, 2007) when solving easy test items.

Both the MERF model and the assumptions put forward in this thesis agree in their view that promotion-focused individuals are *gain-oriented* and do want to conform to the positive expectancy or stereotype present in a no stereotype threat condition whereas prevention-focused individuals are *loss-oriented* and do not want to confirm the negative expectancy or stereotype present in a stereotype threat condition. Consequently, a high pressure or demand is present to live up to regulatory standards or a fear not to live up to them. A similar kind of pressure or fear was shown in previous research on stereotype threat that has shown that participants had higher impression related concerns (e.g., "I am concerned that I will be seen as a success or a failure") under stereotype threat when a prevention-goal congruent role model was presented as opposed to when a promotion-goal congruent role model was presented and under no stereotype threat when a promotion-goal congruent role model was presented as opposed to when a prevention-goal congruent role model as presented[8] (i.e., Marx et al., 2005). These results point to the conclusion that the fear of confirming the negative expectancy or not conforming to the positive expectancy is associated with the concern of making a bad or a good impression. Consequently, a person will be motivated to counteract the negative expectancies (e.g., engage in counter-stereotypic behavior; Pronin et al., 2004; Steele & Aronson, 1995) or act in accordance with the positive expectancies. Furthermore, this pressure or fear can make individuals feel that they are doing the right thing (i.e., feel right and motivated) when at the same time they might feel bad (e.g., anxious, nervous etc.) which can take up their cognitive resources. Given that cognitive resources are essential for cognitive performance, in particular on difficult tasks, impeding effects on performance in those

---

[8] A prevention-goal congruent role model is a role model which highlights strategies for avoiding failure and has shown to motivate prevention-focused individuals more compared to promotion-focused individuals. A promotion-goal congruent role model is a role model which highlights strategies for achieving success and has shown to motivate promotion-focused individuals more compared to prevention-focused individuals (see Lockwood, Jordan, & Kunda, 2002).

regulatory fit inducing conditions seem reasonable. In fact this explanation gains support by research on the underlying processes of stereotype threat, which has shown that the detrimental effects of stereotype threat on performance are driven by a reduction in working memory (i.e., Schmader & Johns, 2003). This reasoning might explain why the same circumstances that might be beneficial for an increase in motivation and a feeling of rightness could impede performance. In addition, as pointed out earlier differential effects of stereotype threat on performance and motivation have been shown before to occur at the same time. Therefore, it must be considered that the equivalence of performance and motivation as traditionally assumed in regulatory fit research might not hold for regulatory fit effects when induced through stereotype threat.

However, it also seems reasonable that an increase in motivation and a feeling of rightness might transfer to a subsequent performance task. As pointed out earlier, motivation can lead to an increase in performance when test items are easy. Moreover, it seems reasonable that a highly motivated person will try harder and therefore show higher persistence and performance on a task than a person, whose motivation is low. In line with this assumption research on self-efficacy has demonstrated across a number of studies that individuals high in self-efficacy (i.e., when a person believes to have the abilities necessary to master a given task; cf. Bandura, 1977; 1982) were highly motivated and performed well at the same time (cf. Multon, Brown, & Lent, 1991).

Due to the issues discussed above it is not clear whether the joint effects of regulatory focus and stereotype threat on performance will lead to an interaction pattern as shown by Keller and Bless (2008) and presented in the MERF model or whether regulatory fit effects similar to those assumed for motivation and persuasion

can be expected to occur. For these reasons no predictions on the direction of the effect on performance will be made in this thesis.

1.3.3 Summary of the Main Hypothesis and Experimental Overview

The studies in the present thesis investigate the Regulatory Fit from Stereotype Threat Assumption. In the presented studies stereotype threat induced regulatory fit effects on women's leadership aspirations are investigated. The general hypothesis is that a regulatory fit will result for a prevention-focused person when experiencing stereotype threat and for a promotion-focused person when experiencing no stereotype threat. Conversely, a regulatory nonfit is hypothesized to occur for a prevention-focused person when experiencing no stereotype threat and for a promotion-focused person when experiencing stereotype threat. Regulatory fit from stereotype threat is further hypothesized to lead to an increase in motivation and a feeling of rightness which increases positive or negative reactions as well as the evaluation and persuasiveness of subsequent stimuli. A regulatory nonfit from stereotype threat on the other hand is hypothesized to lead to a decrease in motivation and a feeling of wrongness which decreases positive or negative reactions as well as the evaluation and persuasiveness of subsequent stimuli (for a summary see Figure 10).

Figure   10.   The   Regulatory   Fit   from   Stereotype   Threat   Assumption summarized.
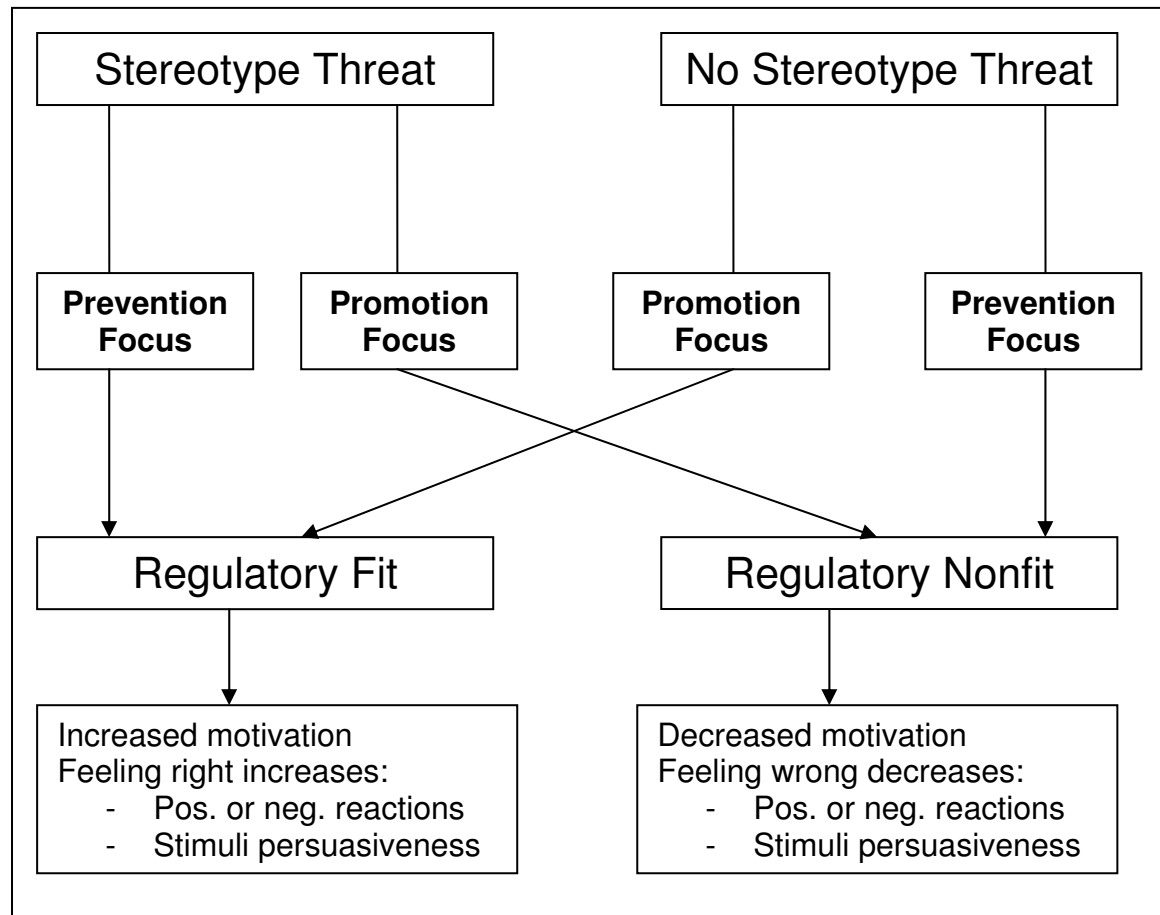
In addition, to the general hypotheses presented above, it is proposed that an increase in motivation for a particular domain goes along with an increase of a person's self-efficacy. The concept of self-efficacy was originally proposed by Bandura (1977; 1982) as part of his social learning theory. Self-efficacy expectations are a person's beliefs that he or she will have the ability to perform a given task or behavior. Bandura proposed self-efficacy to be a central mediator of behavior and it was shown to predict behavior in various areas (see Bandura, 1997).

Importantly for the present research, self-efficacy was found to be a predictor for motivation in many spheres (see Bandura & Locke, 2003). For example, self-efficacy was shown to determine a person's goals and aspirations (Locke & Latham, 1990). In particular, Hackett and Betz (1981) extended Bandura's (1977) social learning theory by applying it to gender differences in the choice of careers. They postulated that career-related self-efficacy would mediate between gender and career choice. In line with this assumption subsequent studies could show gender differences in occupational self-efficacy (e.g., Williams & Betz, 1994) and a relationship between self-efficacy and considered career options (e.g., Matzeder & Krieshok, 1998). Furthermore, as Bandura (2002, p. 3) stated "Unless people believe they can produce desired outcomes and forestall undesired ones by their actions they have little incentive to act or to persevere in the face of difficulties" suggesting that people will only act on their regulatory goals, if they believe to have the ability to accomplish them, that is if they have adequate self-efficacy expectations.

Applying self-efficacy to the current research, it is thought that a person needs to believe that she or he has the ability to conform to (i.e., when promotion-focused) or disconfirm (i.e., when prevention-focused) the stereotype in order to show an increase of motivation under regulatory fit. Moreover, feeling right through regulatory fit or the enhanced impact of a persuasive stimulus should affect a person's self-efficacy. Therefore it is hypothesized that the proposed effects of regulatory fit from stereotype threat on motivation will be partially mediated by self-efficacy.

As described earlier it was shown in a study by Davies et al.'s (2005) that stereotype threat can undermine women's leadership aspirations. It is argued in this thesis that this is not always the case. In particular the experience of regulatory fit from stereotype threat should alter the impeding effects of stereotype threat on

women's leadership aspirations. The studies in this thesis are designed to demonstrate the effects of regulatory fit from stereotype threat on women's leadership aspirations.

In the present studies stereotype threat was induced by explicitly activating the stereotype about women's weak leadership abilities compared to men's (stereotype threat) or removing the stereotype (no stereotype threat). Further, regulatory focus was manipulated by focusing on losses as outcomes (prevention focus) or focusing on gains as outcomes (promotion focus). It was assumed that a regulatory fit would result when the negative stereotype was activated and the focus was on losses as outcomes or when the negative stereotype was removed and the focus was on gains as outcomes. Conversely, it was thought that a regulatory nonfit would result when the negative stereotype was activated and the focus was on gains as outcomes or when the negative stereotype was removed and the focus was on losses as outcomes.

Studies 1 and 2 investigated whether a stereotype threat induced regulatory fit compared to a nonfit led to an increase in motivation for a leader role in an impending leadership task. Further, it was examined whether a feeling of rightness or, respectively, a feeling of doing something the right way from regulatory fit from stereotype threat would lead to an increase in self-efficacy for the leadership domain as compared to a feeling of wrongness or, respectively, a feeling of doing something the wrong way from regulatory nonfit from stereotype threat would lead to a decrease in self-efficacy for the leadership domain. Eventually, it was tested whether self-efficacy for the leadership domain would mediate the relationship between regulatory fit from stereotype threat and motivation.

As an additional dependent measure performance on an alleged leadership test was assessed to explore possible effects of regulatory fit from stereotype threat on performance and a possible interplay of motivation and performance measures. In

Study 1 performance was assessed after leadership motivation measures in order to ensure that the motivation measures would not be influenced by participants' perceived test performance and further to assess whether the effects on motivation might transfer to performance. In Study 2 performance was assessed before the leadership motivation measures in order to test whether the effects on motivation would be affected or are independent from participants' perceived performance on a prior test and further to assess the effects on performance independently from participants' indicated motivation.

In Study 3 it was investigated whether an increase in persuasiveness of a subsequent stimulus resulted from feeling right after a regulatory fit from stereotype threat as opposed to a decrease in the persuasiveness of a subsequent stimulus due to feeling wrong after a regulatory nonfit from stereotype threat. Specifically, it was tested whether the influence of role models on women's leadership motivation would be stronger after experiencing regulatory fit as compared to nonfit. Again, self-efficacy was assessed as a mediator between the effects of regulatory fit from stereotype threat on stimuli persuasiveness and women's leadership motivation. In addition, Study 3 examined whether regulatory fit from stereotype threat would be accompanied by impression-related concerns (Marx et al., 2005) and feelings of pressure or fear as argued for the interactive effects of regulatory focus and stereotype threat on performance (i.e., the fear to confirm negative expectancies or not to conform to positive expectancies; see Keller & Bless, 2008). Last, the effects of stimuli persuasiveness from regulatory fit on an alleged leadership test were explored.

2   EMPIRICAL PART

2.1   Study 1

To test the assumption that stereotype threat can enhance motivation through regulatory fit effects, in the first study women's leader role motivation for a role play was assessed. In addition, women's performance in a performance test that was allegedly testing leadership abilities was measured. The performance measure was added in order to explore potential differential effects of the interplay of stereotype threat and regulatory focus on motivation and performance. Stereotype threat as well as the mode of self-regulation were induced via the description of the role play and the description of the performance test.

It was hypothesized that women who were confronted with negative stereotypic expectancies concerning their leadership abilities as present under stereotype threat conditions would experience a regulatory fit when a prevention focus was induced. Similarly, women who were confronted with relatively positive (non-)stereotypic[9] expectancies concerning their leadership abilities as present under no stereotype threat conditions were expected to experience a regulatory fit when a promotion focus was induced. On the contrary, women who were confronted with negative stereotypic expectancies concerning their leadership abilities when under a promotion focus and women who were confronted with relatively positive (non-)stereotypic expectancies concerning their leadership abilities when under a prevention focus were expected to experience a regulatory nonfit.

---

[9] The term (non-)stereotypic is used here to describe that the expectancies are *stereotypic* according to a *situationally* induced relatively positive stereotype about women's leadership abilities but at the same time are *non-stereotypic* according to the *culturally shared* negative stereotype about women's leadership abilities.

According to regulatory fit theory (Higgins, 2000) regulatory fit increases value which in turn enhances motivation. On the other hand, conditions which induced a regulatory nonfit have shown to produce a decrease in motivation (Lockwood, 2002). Thus, it was expected that women in the regulatory fit conditions show higher leader role motivation than in the regulatory nonfit conditions.

The predictions about women's performance were of exploratory nature. Their performance was either expected to increase with increased motivation in the regulatory fit conditions as compared to the regulatory nonfit conditions or to show exactly the opposite pattern, i.e., lower performance in the regulatory fit as opposed to the regulatory nonfit conditions. The later prediction was made with respect to the findings of the moderation of expectancy effects by regulatory focus (MERF) model on performance by Keller and Bless (2008)[10]. Participants' leader role motivation and their performance served as the main dependent measures.

In addition to assessing participant's leader role motivation their ratings on a leader role motivation scale and their domain specific self-efficacy regarding the role play was assessed. Self-efficacy was assessed as a potential mediator of the predicted regulatory fit effects on motivation. According to the regulatory fit hypothesis individuals will feel right about what they are doing. Thus, it was expected that participants would also feel right about their prospective task in the role play and show increased self-efficacy under regulatory fit but decreased self-efficacy under regulatory nonfit. The increased self-efficacy from regulatory fit then should make participants believe that they have the ability to confirm (i.e., when promotion-focused) or disconfirm (i.e., when prevention-focused) the stereotype and further lead to an increase in participants' motivation. The decreased self-efficacy from regulatory

---

[10] Note that the combination of stereotype threat and regulatory focus conditions are interpreted as regulatory fit or nonfit conditions according to the Regulatory Fit from Stereotype Threat Assumption, but have not been referred to as such by Keller and Bless (2008).

nonfit, on the other hand, should make participants not believe in having the ability to confirm or disconfirm the stereotype and further lead to a decrease in participants' motivation. To further examine whether a regulatory fit would also occur for a match of participants' chronic regulatory orientation and stereotype threat conditions the chronic regulatory focus was measured at the beginning of the study.

2.1.1   Method

2.1.1.1   Design and Participants

A 2 (stereotype threat: threat vs. no threat) x 2 (regulatory focus: prevention vs. promotion) design was applied with leader role motivation and performance as the primary dependent measures. Participants were 58 female students at the University of Mannheim who were randomly assigned to the conditions.

2.1.1.2   Procedure

Female students, who were approached on campus and agreed to participate in the study for the compensation of two Euros and a chocolate bar, were lead into the laboratory where they met the experimenter. The experimenter, who was blind to the conditions, handed them the first of four parts of the questionnaire. In the first part participants were ensured their anonymity and thanked for participating in the experiment. The experiment was described as consisting of different unrelated studies. In the first set of the questionnaire among a number of scales not relevant for the present research questions (see Appendix C), participants' chronic regulatory focus was assessed using a measure developed by Keller (2004) which contained two subscales of nine items measuring a person's promotion focus (e.g., "I hope that my

future career will provide major challenges that will raise my ambitions") and nine items measuring a person's prevention focus (e.g., "When confronted with a negative expectancy concerning my performance I feel pressured and tense.").

Stereotype Threat and Regulatory Focus Manipulations. Participants received the second set of the questionnaire announcing that a test of their leadership abilities would soon follow. They received a sample test item and a brief test description containing the stereotype threat and regulatory focus manipulations. Stereotype threat was manipulated with a common procedure used in research on stereotype threat, namely by explicitly activating stereotype threat (stereotype threat condition) or removing stereotype threat (no stereotype threat condition; cf. Aronson et al., 1999; Cadinu et al., 2003; Spencer et al., 1999). Participants in the stereotype threat conditions were told that in earlier studies men had done better than women on that test. Participants in the no stereotype threat conditions were told that in earlier studies no gender differences were shown and that women had performed equally well or better as compared to men on the test. For the no stereotype threat manipulation it was assumed that stating the absence of gender difference in a domain which is negatively stereotyped for women would instigate relatively positive expectancies for female participants. In addition, regulatory focus was manipulated by giving participants a certain scoring scheme and by explaining them the meaning of the role play. Participants in the prevention focus condition were told that they would receive a point for each correct answer, but that one point would be deducted for each missing or incorrect answer. Then they were told that to obtain a good test result it would be most sufficient to work thoroughly and to avoid mistakes. Participants in the promotion focus condition were told that they would receive a point for each correct answer and that *no* points would be deducted for missing or incorrect answers. Then

they were told that to obtain a good test result it would be most sufficient to get as many right answers as possible. This regulatory focus manipulation was adapted from previous studies inducing regulatory focus (e.g., Shah et al., 1998). After this first manipulation participants' rated a number of scales not relevant to the present research question (see Appendix C).

In a third set of the questionnaire both, the stereotype threat and the regulatory focus manipulations were reinforced. Participants were told that after the performance test they would be asked to participate in a role play developed to assess methods of personnel selection. Participants in the prevention focus conditions were told that the personnel selection method would be able to identify individuals who have particularly *weak* leadership abilities and that only those people who are within the *worst* 5% in leadership competence can be picked out via this method. Participants in the promotion focus conditions were told that this method would be able to identify individuals who have particularly *strong* leadership abilities and that only those people who are within the *best* 5% in leadership competence can be picked out via this method. This regulatory focus manipulation was adapted from a study by Brown and Josephs (1999) showing the moderation of stereotype threat effects on math performance by gender-specific concerns. In addition, stereotype threat was manipulated by telling participants in the prevention focus conditions that the group of people who have particularly *weak* leadership abilities was mainly made up of *women* in the past, whereas participants in the promotion focus conditions were told that the group of people who have particularly *strong* leadership abilities was mainly made up of *men* in the past. On the contrary, no stereotype threat was manipulated by telling participants in the prevention focus conditions that the group of people who have particularly *weak* leadership abilities was mainly made up of *men* in the past,

whereas participants in the promotion focus condition, learned that the group of people who have particularly *strong* leadership abilities was mainly made up of *women* in the past (for the exact wording of regulatory focus and stereotype threat manipulations see Appendix A).

Dependent measures. At the end of the role play description it was stated that participants could either take over a leader or a team worker role in the role play. Then their role motivation was assessed with four items asking participants to indicate their preference, interest, anticipated success, and anticipated fun for the leader and the team worker role on a scale from 1 to 7 with higher numbers indicating a higher value. This role play measure was partially adapted from a study of Davies et al. (2005) showing stereotype threat effects on women's leadership aspirations. Davies et al. asked participants to indicate their interest for a leader role and problem solver role on a scale from 1 (*no interest*) to 7 (*strong interest*). Davies et al.'s procedure was altered in this study for the following reasons. The problem solver role as introduced by Davies et al. requires cognitive skills which are stereotypically masculine (e.g., problem solving, analytic thinking; see Ceijka & Eagly, 1999; Diekman & Eagly, 2000) and thus would potentially elicit an implicit stereotype threat activation by rendering the role play as diagnostic for a gender stereotypic ability (e.g., Croizet & Claire, 1998; cf. Steele et al., 2002). Therefore, a different role (i.e., team worker role) was chosen as the alternative role. The team worker role was chosen, because working in a team is associated with skills that are stereotypically feminine (e.g., verbally skilled, cooperative; see Ceijka & Eagly, 1999; Diekman & Eagly, 2000) and thus if anything would implicitly elicit a stereotype lift (i.e., beneficial effects of the stereotype for the positively stereotyped group; see Walton & Cohen, 2003) for women. Further, the scale assessing leader role motivation was extended from

exclusively assessing participants' *interest* in each role to also capture participants' anticipated *preference*, anticipated *success*, and *fun* to provide a wider range of indicators for motivation as a dependent measure.

After participants had indicated their leader role motivation for the role play their self-efficacy for the leadership role was assessed. Five items from a scale measuring general self-efficacy (Schwarzer, 1994) were selected and rewritten to measure specific self-efficacy for the role play (e.g., "I have no difficulties to realize my plans and intentions" was rewritten to "I will have no difficulties to realize my plans and intentions in the role play"). This scale was anchored 1 (*not at all true*) and 7 (*extremely true*).

Then participants' *general* leadership motivation was assessed with five selected items from a general leader role motivation scale, which is part of a measure assessing personality traits as related to occupations (BIP; Hossiep & Paschen, 2003). The items of the general leader role motivation scale were rewritten to assess participants' leader role motivation in the role play (e.g., "I am content when I can influence others." was rewritten to "I am content when I can influence others in the role play."). The scale was labeled at the endpoints with 1 (*not at all true*) and 7 (*extremely true*).

After completing the third set of the questionnaire participants received the performance test ostensibly assessing leadership abilities. At the beginning of the test the stereotype threat and regulatory focus manipulations in relation to the performance test were repeated as stated in the second set of the questionnaire. Then participants were given eight test items which were taken from a subsection of the Graduate Record Exam (GRE) measuring analytic ability. On the top of the page with the test items the title "Leadership Ability Test" appeared in large font letters.

Participants were told that they had no more than eight minutes to solve the test items and a stop watch showing the time was placed on their desk. The time constraint was added to obtain a greater variance of correct results among participants and to make the test more difficult as stereotype threat effects occur in particular on difficult tasks (O'Brien & Crandall, 2003; Spencer et al., 1999). The exact items and wording of all dependent measures can be found in Appendix B.

Manipulation check. After the performance test participants received the fourth and last set of the questionnaire containing a number of scales not relevant for the present research question, the manipulation check of the stereotype threat manipulation, and demographic variables. For the manipulation check participants were asked to indicate the percentage of items of the performance test they thought women had solved and the percentage of items of the performance test they thought men had solved.

2.1.2   Results and Discussion

2.1.2.1   Manipulation Check

As a measure for the stereotype threat manipulation the difference between participants' estimated percent of men's correct answers minus the estimated percent of women's correct answers on the performance test was computed. Thus, higher values indicated a higher estimate for men's in comparison to women's performance. A 2 (stereotype threat) x 2 (regulatory focus) ANOVA revealed the expected main effect for stereotype threat. Participants in the stereotype threat conditions showed a higher estimate of men's in comparison to women's performance on the test ($\underline{M}$ = 10.86, $\underline{SD}$ = 15.02) than participants in the no stereotype threat conditions ($\underline{M}$ = 3.57,

SD = 8.20), $\underline{F}$(1, 54) = 5.37, $\underline{p}$ < .02 (one-tailed). No other statistical significant effects emerged, all $\underline{p}$'s > .05. Hence, it can be concluded that the stereotype threat manipulation was successful.

2.1.2.2 *Leader Role Motivation*

The four items assessing leader role motivation for the anticipated role play were combined into a single measure (Cronbach's α = .91). As expected participants in the manipulated regulatory fit conditions (situational prevention focus and stereotype threat or situational promotion focus and no stereotype threat conditions) showed higher leader role motivation than in the remaining regulatory nonfit conditions (for means and standard deviation see Table 1), which resulted in a significant interaction of stereotype threat with the situational regulatory focus, $\underline{F}$(1, 54) = 4.79, $\underline{p}$ < .04. Simple comparisons showed that when a prevention focus was induced participants had marginal significantly higher leader role motivation under stereotype threat than under no stereotype threat, $\underline{t}$(54) = 1.52, $\underline{p}$ < .08 (one-tailed). Thus, for prevention-focused participants' leader role motivation was shown to be higher when their regulatory concerns (i.e., approaching a non-loss) matched the concern that was activated by the stereotype threat condition (i.e., the loss of confirming the negative stereotype under stereotype threat) than when it did not (i.e., the gain of conforming to positive expectancies under no stereotype threat). Likewise when a promotion focus was induced participants had marginal significantly higher leader role motivation when their regulatory concerns (i.e., approaching a gain) matched the concern that was activated by the stereotype threat condition (i.e., gain) than when it did not (i.e., loss), $\underline{t}$(54) = 1.57, $\underline{p}$ < .08 (one-tailed).

Table 1

Leader Role Motivation as a Function of Stereotype Threat and Situational Regulatory Focus (Study 1)

Regulatory focus	Stereotype Threat					
	Threat			No Threat		
	M	(SD)	n	M	(SD)	n
Prevention	4.38	(1.43)	14	3.55	(1.43)	15
Promotion	3.71	(1.53)	14	4.57	(1.43)	15

Note. Leader role motivation was rated on a scale from 1 to 7. Higher scores indicate higher motivation.

These results show first support for the hypothesis that a regulatory fit can be induced by activating (non-)stereotypic concerns which match an individual's regulatory concerns given in a specific situation. Further, the data provides preliminary evidence that regulatory fit can enhance women's leader role motivation.

Chronic regulatory focus. After eliminating one item from the promotion subscale (item 18, see Appendix A) due to an unsatisfactory item total correlation both the prevention and promotion subscales, yielded satisfactory reliabilities (prevention focus: Cronbach's α = .76, promotion focus: Cronbach's α = .77). The two subscales were marginal significantly correlated, r = .25, p < .06. To assess participants' dominant regulatory focus a difference of participants' ratings on the promotion scale minus participants' ratings on the prevention scale was computed. Twenty-eight participants who had higher ratings than the median (Mdn = 1.13) on

the scale were grouped as having a chronic promotion focus whereas 29 participants who had lower or equal ratings than the median were grouped as having a chronic prevention focus[11], one participant had to be excluded from the analyses because not all items of the scales were completed properly.

A marginal significant interaction of stereotype threat with chronic regulatory focus occurred, $\underline{F}$(1, 53) = 3.75, $\underline{p}$ < .06. Simple comparisons showed that when a prevention focus was induced, participants had marginal significantly higher leader role motivations when their regulatory concerns (i.e., approaching a non-loss) matched the outcome that was activated by the stereotype threat condition (i.e., loss of confirming the negative stereotype under stereotype threat) than when it did not (i.e., the gain of conforming to the positive stereotype under no stereotype threat), $\underline{t}$(53) = 1.57, $\underline{p}$ < .08 (one-tailed). Although when a promotion focus was induced participants also showed higher leader role motivations when their regulatory concerns (i.e., approaching a gain) matched the outcome that was activated by the stereotype threat condition (i.e., gain) than when it did not (i.e., loss) this difference was not significant, $\underline{t}$(53) = 1.17, $\underline{p}$ > .10 (one-tailed; for means and standard deviation see Table 2). Even though the results for stereotype threat condition by participants chronic regulatory focus were weaker than for the situational induced regulatory focus the basic pattern could be replicated for participants with a prevention focus providing additional support for the hypothesis. For participants with a promotion focus however, the results in support of the hypothesis were not significant.

---

[11] According to Higgins's (1997; 1998) regulatory focus theory the grouping of individuals as a result of the difference between their promotion and prevention foci is not a fully accurate procedure. It is theoretically assumed that prevention and promotion foci are independent from each other. Consequently, participants, who were labeled as chronically prevention-focused, only have stronger prevention focus concerns *in comparison* to their promotion focus concerns and participants, who were labeled as chronically promotion-focused, only have stronger promotion focus concerns *in comparison* to their prevention focus concerns. Therefore, it is theoretically possible that, for example, a particular individual grouped as chronically prevention-focused has weaker prevention focus concerns than a particular individual grouped as chronically promotion-focused. Hence, strictly speaking it is participants' *relative* regulatory focus that is reflected in the measures established in this thesis.

Table 2

Leader Role Motivation as a Function of Stereotype Threat and Chronic Regulatory Focus
(Study 1)

| | Stereotype Threat | | | | | |
| | Threat | | | No Threat | | |
Regulatory focus	M	(SD)	n	M	(SD)	n
Prevention	4.51	(1.54)	13	3.56	(1.65)	16
Promotion	3.62	(1.65)	14	4.33	(1.62)	14

Note. Leader role motivation was rated on a scale from 1 to 7. Higher scores indicate
higher motivation.

Theoretically, a regulatory fit or nonfit should also occur when situationally
induced and chronically regulatory foci match versus mismatch. However, the present
statistical design would not yield a sufficient number of participants per cell when
adding another factor to the analyses. Therefore a regression analyses was performed
with situational regulatory focus, chronical regulatory focus, stereotype threat, and
their interactions as predictors. All predictors were entered using effect coding (cf.
Aiken & West, 1991). The results showed a marginal significant effect for the
situational regulatory focus by stereotype threat interaction, $\underline{B} = 0.26$, $\underline{t}(50) = 1.96$, $\underline{p}$
$< .06$. No other effects were found, all $\underline{p}$'s $> .10$. I will return to this issue in the
discussion section.

In regard of the stronger results of the situational regulatory focus and
considering that the main hypotheses concerned the match of *induced* regulatory and

stereotypic concerns all further analyses reported for Study 1 will show the findings

for the situational regulatory focus only.

Team role motivation. The four items assessing motivation for the team

worker role in the anticipated role play were combined into a single measure

(Cronbach's α = .87). To compare regulatory fit (as opposed to regulatory nonfit

effects) on participants' leader role motivation to their team worker role motivation, a

regulatory fit variable was created by combining cells of the regulatory fit conditions

(i.e., combining prevention focus and threat with promotion focus and no threat

conditions) and combining cells of the regulatory nonfit conditions (i.e., combining

prevention focus and no threat with promotion focus and threat conditions).

Combining cells of regulatory fit conditions for the sake of representation is a

common procedure (e.g., Cesario et al., 2004) and is particularly appropriate for this

study since information about leader role motivation in individual cells can be

obtained from the preceding analyses[12].

A 2 (regulatory fit: fit vs. nonfit) x 2 (role type: leader vs. team worker role)

MANOVA was performed with role type as the within subject factor. Overall,

participants showed significantly higher team worker role motivation ($\underline{M}$ = 4.75, $\underline{SD}$ =

1.32) than leader role motivation ($\underline{M}$ = 4.05, $\underline{SD}$ = 1.48), $\underline{F}$(1, 56) = 6.28, $\underline{p}$ < .02.

Furthermore, a marginal significant interaction occurred, $\underline{F}$(1, 56) = 3.10, $\underline{p}$ < .09.

Planned contrasts revealed that participants only had higher team worker ($\underline{M}$ = 4.81,

$\underline{SD}$ = 1.24) than leader role motivation ($\underline{M}$ = 3.63, $\underline{SD}$ = 1.46) in the regulatory nonfit

condition, $\underline{F}$(1, 56) = 9.10, $\underline{p}$ < .002 (one-tailed)[13]. However, in the regulatory fit

---

[12] A 2 (stereotype threat) x 2 (regulatory focus) ANOVA with team role motivation as the dependent variables yielded no significant results, all $\underline{p}$'s > .10.

[13] The contrasts between leader role motivation and team role motivation remained significant when computed for each regulatory nonfit condition individually (prevention focus/no stereotype threat: $\underline{F}$(1,54) = 5.69, $\underline{p}$ < .01 (one-tailed); promotion focus/stereotype threat: $\underline{F}$(1,54) = 3.28, $\underline{p}$ < .04 (one-tailed)).

condition participants' team worker ($\underline{M}$ = 4.68, $\underline{SD}$ = 1.42) and leader motivation ($\underline{M}$ = 4.47, $\underline{SD}$ = 1.41) did not differ, $\underline{F}$(1, 56) < 1 (see Figure 11)[14].

Figure 11. Role motivation as a function of regulatory fit and role type in Study 1.
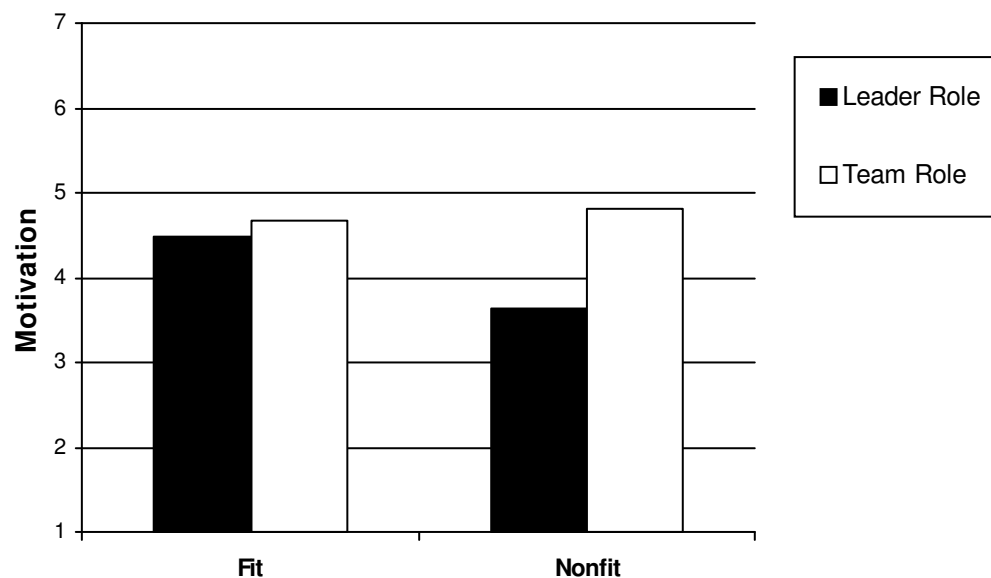
These results suggest that regulatory fit effects on motivation occur only for the domain for which the stereotype is made (ir)relevant, namely the leadership domain. For the team worker domain in which no (non-)stereotypic concerns are activated no differences in motivation were found. Moreover, these results show that despite a higher leader role motivation in regulatory fit than in nonfit conditions, regulatory fit effects do not lead to a general preference of the leader role over another role (i.e., the team worker role). Rather, these data suggest that regulatory fit enhances leader role motivation relatively to the other conditions bringing it on one level with women's motivation for other not negatively stereotyped domains (i.e., working in a

---

[14]The contrasts between leader role motivation and team role motivation remained non-significant when computed for each regulatory fit condition individually (prevention focus/stereotype threat: $\underline{F}$(1,54) < 1, $\underline{p}$ > .10; promotion focus/no stereotype threat: $\underline{F}$(1,54) < 1, $\underline{p}$ > .10).

team). Thus, regulatory fit could act as a buffer against potential detrimental effects of stereotype threat on women's leader role motivation.

Mediated moderation. To examine whether self-efficacy in the role play would function as a mediator for regulatory fit effects on leader role motivation the five items assessing self-efficacy were combined into a single measure (Cronbach's α = .82). To test the mediation of the regulatory focus by stereotype threat interaction a procedure recommended by Muller, Judd, and Yzerbyt (2005) was applied. First it was tested whether the Regulatory Focus x Stereotype Threat interaction was a predictor of leader role motivation while controlling for the main effects. As shown in previous analysis this was the case, $\underline{B}$ = 0.42, $\underline{t}$(54) = 2.19, $\underline{p}$ < .04. Second, it was examined whether the same interaction would also predict self-efficacy in the role play. This effect was marginal significant, $\underline{B}$ = 0.23, $\underline{t}$(54) = 1.83, $\underline{p}$ < .08. As a third step it was examined whether self-efficacy would predict leader role motivation while controlling for the manipulations and their interaction. Self-efficacy in the role play was shown to be a strong predictor for participants' leader role motivation, $\underline{B}$ = 0.60, $\underline{t}$(53) = 3.09, $\underline{p}$ < .004. As a last step it was investigated whether the effect of the Regulatory Focus x Stereotype Threat interaction as a predictor was reduced or eliminated when controlling for self-efficacy. The interaction became non-significant, $\underline{B}$ = 0.28, $\underline{t}$(53) = 1.54, $\underline{p}$ > .10. The beta was reduced from $\underline{B}$ = 0.42 to $\underline{B}$ = 0.28. Surprisingly, as shown by the Sobel (1982) test this reduction only leaned towards marginal significance, $\underline{Z}$ = 1.57, $\underline{p}$ > .10 (Goodman: $\underline{Z}$ = 1.64, $\underline{p}$ < .10). Even though the results strongly point in the direction that self-efficacy for the role play would partially mediate the effects of regulatory fit on leader role motivation they could not be supported by the Sobel test. This is probably due to the only marginal significant

relation between the Regulatory Focus x Stereotype Threat interaction and self-efficacy as shown in the second step of the analyses.

2.1.2.3   Leadership Motivation – BIP

Due to unsatisfactory item properties (item total correlation < .30; see Bortz & Döring, 2003) two items had to be eliminated (item 1 and item 3[15], see Appendix B). The remaining items were combined into a single score (Cronbach's α = .77). As expected participants in the manipulated regulatory fit conditions showed higher leadership motivation than in the remaining regulatory nonfit conditions (for means and standard deviation see Table 3). However, the interaction of stereotype threat with the situational regulatory focus was not shown to be significant, $F(1, 54)$ = 2.24, p > .10. Simple comparisons revealed that when a prevention focus was induced, participants had marginal significantly higher leadership motivations when in the stereotype threat (regulatory fit) than when in the no stereotype threat (regulatory nonfit) condition, $t(54)$ = 1.51, p < .08 (one-tailed). However, when a promotion focus was induced participants leadership motivation in the no stereotype threat condition (regulatory fit) was only slightly higher than in the no stereotype threat condition (regulatory nonfit). This difference was non-significant, $t(54)$ = 0.60, p > .10.

---

[15] Both items did not yield sufficient item-total correlations (both r' < .20). However, as the items' content does reflect leadership interests those unsatisfactory item properties are not theoretically explicable.

Table 3

Leadership motivation (BIP) as a Function of Stereotype Threat and Situational Regulatory Focus (Study 1)

| | Stereotype Threat | | | | | |
| | Threat | | | No Threat | | |
Regulatory focus	M	(SD)	n	M	(SD)	n
Prevention	4.22	(1.19)	14	3.56	(1.01)	15
Promotion	4.07	(1.30)	14	4.33	(1.18)	15

Note. Leadership motivation was rated on a scale from 1 to 7. Higher scores indicate higher motivation.

For participants with a prevention focus, these results further support the hypothesis that a regulatory fit can be induced by activating (non-)stereotypic concerns, which match an individual's regulatory concerns. However, this hypothesis could not be supported for participants with a promotion focus.

2.1.2.4 Test Performance and Effort

As a performance measure the number of solved items was computed. Further as a measure of effort on the performance test the number of attempted items were counted. The 2 (stereotype threat) x 2 (regulatory focus) ANOVA did not show any effects for participants' performance. However, for test effort a marginal significant main effect of stereotype threat was found, $F(1, 54) = 3.61$, $p < .07$[16]. Participants in the stereotype threat condition attempted fewer items ($M = 4.39$, $SD = 1.73$) than

---

[16] Note that no additional effects were found when computing the analyses with the chronic instead of the situationally induced regulatory focus, all p's < .10.

participants in the no stereotype threat condition ($\underline{M}$ = 5.37, $\underline{SD}$ = 2.08). Unexpectedly, these results neither show effects of the interplay of stereotype threat and regulatory focus that would have been predicted due to an increase in motivation by regulatory fit nor could the findings by Keller and Bless (2008) be replicated. These null findings might possibly be due to a diminishing impact of the manipulation throughout the experiment. Since the performance test was administered at the end of the experiment the manipulation might have not been effective anymore at that point. Nonetheless, the stereotype threat effect on test effort is in line with prior findings in stereotype threat research which show a decrease of effort under stereotype threat (e.g., Keller & Dauenheimer, 2003).

2.2   Study 2

The results of Study 1 generally confirmed the hypothesis that regulatory fit effects on motivation can be induced through the interplay of regulatory focus and stereotype threat. However, no effects of regulatory fit on test performance were found. Consequently, Study 2 was aimed to further investigate potential effects of stereotype threat induced regulatory fit effects on performance and the interplay of performance and motivation. Thus, it was examined in Study 2 whether a) effects on performance could be found measured immediately after the regulatory focus and stereotype threat manipulations and b) assessing performance before motivation would affect the results found on motivation or whether the regulatory fit effects on motivation as found in Study 1 were independent from prior performance on a test. If regulatory fit effects on motivation are independent from a prior performance task the results from Study 1 that were found for motivation should be replicated in Study 2. As a result Study 2 was designed as a replication of Study 1 with the exception that the test performance was assessed *before* motivation.

2.2.1   Method

2.2.1.1   Design and Participants

A 2 (stereotype threat: threat vs. no threat) x 2 (regulatory focus: prevention vs. promotion) design was applied with performance and leader role motivation as the primary dependent measures. Participants were 60 female students at the University of Mannheim who were randomly assigned to the conditions.

2.2.1.2   Procedure

The procedure as in Study 1 was replicated and identical measures were used. In contrast to Study 1, participants received the performance test prior to the motivation measures. Thus, participants received the first set of the questionnaire including the chronic measure of regulatory focus. Then they received the second set which in this study contained the sample performance test item and the stereotype threat and regulatory focus manipulation in relation to the performance test. Immediately after the second set the performance test was distributed. After the performance test the third set of the questionnaire was handed out with information about the role play and the stereotype threat and regulatory focus manipulation in relation to the role play. Then participants' leader role motivation, specific self-efficacy, and leadership motivation items (BIP) were assessed. Last the manipulation check measure was completed.

2.2.2   Results and Discussion

2.2.2.1   Manipulation Check

As in Study 1 the measure for the stereotype threat manipulation check was the difference between participants' estimated percent of men's correct answers minus the estimated percent of women's correct answers on the performance test. Thus, higher values indicated a higher estimate for men's in comparison to women's performance. One participant had to be excluded from the analyses because she failed to complete the manipulation check measure. A 2 (stereotype threat) x 2 (regulatory focus) ANOVA revealed that participants in the stereotype threat conditions showed a higher estimate of men's in comparison to women's performance on the test ($M = 9.7$, $\underline{SD} = 17.12$) than participants in the no stereotype threat conditions ($\underline{M} = 1.79$, $\underline{SD} =$

10.78), $\underline{F}(1, 55) = 4.86$, $\underline{p} < .02$ (one-tailed). No other statistical significant effects were found, all $\underline{p}$'s $> .05$. Hence, it can be concluded that the stereotype threat manipulation was successful.

2.2.2.2 Test Performance and Effort

As in Study 1 the number of solved items served as a performance measure and the number of items attempted as a measure of effort on the performance test. A 2 (stereotype threat) x 2 (regulatory focus) ANOVA revealed a marginal significant main effect for participants' performance, $\underline{F}(1, 56) = 3.94$, $\underline{p} < .06$. Surprisingly, participants in the stereotype threat conditions solved more test items ($\underline{M} = 2.87$, $\underline{SD} = 1.61$) than in the no stereotype threat conditions ($\underline{M} = 2.10$, $\underline{SD} = 1.35$)[17]. Even though no interaction effect was found planned contrasts showed that only when a prevention focus was induced participants in the stereotype threat condition ($\underline{M} = 2.80$, $\underline{SD} = 1.57$) marginally significantly outperformed those in the no threat condition ($\underline{M} = 1.80$, $\underline{SD} = 1.15$), $\underline{t}(56) = 1.83$, $\underline{p} < .08$. When a promotion focus was induced the difference between participants performance in the stereotype threat ($\underline{M} = 2.93$, $\underline{SD} = 1.71$) and no stereotype threat ($\underline{M} = 2.40$, $\underline{SD} = 1.50$) conditions was non significant, $\underline{t}(56) = -0.98$, $\underline{p} > .10$. No effects were found for the number of attempted items, all $\underline{p}$'s $> .10$.

The marginal significant main effect on test performance contradicts the usual findings for stereotype threat effects on performance. One explanation for this effect provided by stereotype threat theory could be that stereotype threat leads to increased performance on easy test items vs. difficult test items due to beneficiary as opposed to detrimental effects of arousal (e.g., O'Brien & Crandall, 2003). However, participants

---

[17] Note that no additional effects were found when computing the analyses with the chronic instead of the situationally induced regulatory focus, all $\underline{p}$'s $< .10$.

in Study 2 solved on average only 2.48 of the eight test items. Thus, the explanation that the test items were easy can be ruled out. Another explanation is that the stereotype threat manipulation might not have been successful. Considering that the manipulation check was successful and that stereotype threat effects on test effort have been shown in Study 1 on the very same test, this explanation also seems not very plausible.

A third explanation can be provided by the results obtained through the planned contrasts. Those results suggest that the higher performance under stereotype threat as opposed to no stereotype threat conditions was mainly due to participants with a prevention focus. Consequently, higher performance was found for one of the regulatory fit conditions (stereotype threat and prevention focus) as opposed to one of the regulatory nonfit conditions (no stereotype threat and prevention focus). This explanation would be in line with the results found for the leadership motivation measures. Nonetheless, prevention-focused participants showed the reversed stereotype threat effects on performance when compared to the findings on test effort in Study 1 on the very same test and compared to the usual findings of stereotype threat effects on performance (cf., Steele et al., 2002). In addition, stereotype threat effects on test performance, in particular when assessed for *difficult* test items, should not show the same effects as those expected for motivation (cf. Keller, 2007). Hence, the findings obtained for test performance in Study 2 do not fit any of the theoretical assumptions.

2.2.2.3   Leader Role Motivation

The four items assessing leader role motivation for the anticipated role play were combined into a single measure (Cronbach's α = .92). A significant Stereotype

Threat x Regulatory Focus interaction was found, $\underline{F}(1, 56) = 4.27$, $\underline{p} < .05$. As can be seen in Table 4 the interaction pattern from Study 1 was replicated.

Simple comparisons showed that when a prevention focus was induced participants had marginal significantly higher leader role motivation when in the stereotype threat (regulatory fit) condition than when in the no stereotype threat (regulatory nonfit) condition, $\underline{t}(56) = 1.60$, $\underline{p} < .06$ (one-tailed). On the other hand, when a promotion focus was induced participants had marginal significantly higher leader role motivation when in the no stereotype threat (regulatory fit) condition than when in the stereotype threat (regulatory nonfit) condition, $\underline{t}(56) = 1.33$, $\underline{p} < .10$ (one-tailed). These results further support the hypothesis that a regulatory fit can be induced by activating (non-)stereotypic concerns which match an individual's regulatory concerns in a specific situation and that regulatory fit can enhance women's leader role motivation. Further, the effects of regulatory fit on motivation as found in Study 1 were replicated. Thus, it could be assumed that those regulatory fit effects are not affected by taking a performance test directly before the motivation measure. However, considering the unexpected results on the performance measure this assumption can only be of preliminary nature at this point.

Table 4

Leader Role Motivation as a Function of Stereotype Threat and Situational Regulatory

Focus (Study 2)

Regulatory focus	Stereotype Threat					
	Threat			No Threat		
	M	(SD)	n	M	(SD)	n
Prevention	4.45	(1.11)	15	3.67	(1.55)	15
Promotion	3.87	(1.38)	15	4.52	(1.30)	15

Note. Leader role motivation was rated on a scale from 1 to 7. Higher scores indicate

higher motivation.

Chronic regulatory focus. As in Study 1 one item had to be eliminated from

the promotion subscale (item 18, see Appendix A) due to an unsatisfactory item-total

correlation ($\underline{r}$' < .25). With the remaining items both the prevention and promotion

subscales yielded satisfactory reliabilities (prevention focus: Cronbach's α = .82,

promotion focus: Cronbach's α = .82). The two subscales were not correlated, $\underline{r}$ = .08,

$\underline{p}$ > .10. As in Study 1 a difference of participants' ratings on the promotion scale

minus participants' ratings on the prevention scale was computed. Then a median split

was performed. Thirty-one participants' who had higher ratings than the median ($\underline{Mdn}$

= .89) on the scale were grouped as having a chronic promotion focus whereas 29

participants' who had lower or equal ratings than the median were grouped as having

a chronic prevention focus. A marginal significant interaction of stereotype threat

with chronic regulatory focus was found, $\underline{F}(1, 56) = 3.51$, $\underline{p}$ < .07. Simple

comparisons showed that when a prevention focus was induced participants had significantly higher leader role motivation when in the stereotype threat condition than when in the no stereotype threat condition, $\underline{t}(56) = 1.90$, $\underline{p} < .04$ (one-tailed). Although when a promotion focus was induced participants showed higher leader role motivations when in the no stereotype threat condition than when in the stereotype threat condition, as in Study 1 this difference was not shown to be significant, $\underline{t}(56) = .73$, $\underline{p} > .10$ (see Table 5 for means and standard deviations) .

Table 5

<u>Leader Role Motivation as a Function of Stereotype Threat and Chronic Regulatory Focus</u> <u>(Study 2)</u>

	Stereotype Threat					
	Threat			No Threat		
Regulatory focus	<u>M</u>	<u>(SD)</u>	<u>n</u>	<u>M</u>	<u>(SD)</u>	<u>n</u>
Prevention	4.22	(1.43)	18	3.15	(1.73)	11
Promotion	4.11	(1.31)	12	4.51	(1.46)	19

<u>Note.</u> Leader role motivation was rated on a scale from 1 to 7. Higher scores indicate higher motivation.

Replicating the findings from Study 1 the general effect of stereotype threat and situational regulatory focus on leader role motivation was replicated with the chronic regulatory focus measure. Nonetheless, the effect was weaker and regulatory fit and nonfit conditions for participants with a promotion focus did not differ significantly.

As in Study 1 the present statistical design would not yield a sufficient number of participants per cell for a test of a regulatory fit vs. nonfit between situationally induced and chronically regulatory foci. Therefore again a regression analyses was performed with situational regulatory focus, chronical regulatory focus, stereotype threat, and their interactions as predictors. All predictors were entered using effect coding (cf. Aiken & West, 1991). The results showed a significant effect for the situational regulatory focus by stereotype threat interaction, $\underline{B}$ = 0.27, $\underline{t}$(52) = 2.02, $\underline{p}$ < .05. No other effects were found, all $\underline{p}$'s > .10. This subject will be returned to in the discussion section.

Considering the fact that again stronger results appeared for the situational regulatory focus and that the main hypotheses concerned the match of *induced* regulatory and stereotypic concerns all other analyses reported for Study 2 show the findings for the situational regulatory focus only.

Team role motivation. The four items assessing team worker role motivation for the anticipated role play were combined into a single measure (Cronbach's α = .78). Regulatory fit as opposed to regulatory nonfit effects on participants' leader role motivation were compared to their team worker role motivation. A regulatory fit variable was created in the same manner as in Study 1. A 2 (regulatory fit: fit vs. nonfit) x 2 (role type: leader vs. team worker role) MANOVA was performed with role type as the within subject factor[18]. Overall, participants team worker role motivation ($\underline{M}$ = 4.72, $\underline{SD}$ = 1.00) was significantly higher than their leader role motivation ($\underline{M}$ = 4.13, $\underline{SD}$ = 1.36), $\underline{F}$(1, 58) = 8.05, $\underline{p}$ < .007. Furthermore, a marginal significant interaction occurred, $\underline{F}$(1, 58) = 4.22, $\underline{p}$ < .08. Planned contrasts showed that only in the regulatory nonfit condition participants had higher team worker ($\underline{M}$ =

---

[18] A previously performed 2 (stereotype threat) x 2 (regulatory focus) ANOVA with team role motivation as the dependent variables had yielded no significant results, all $\underline{p}$'s > .10

4.73, $\underline{SD}$ = .94) than leader role motivation ($\underline{M}$ = 3.77, $\underline{SD}$ = 1.44), $\underline{F}$(1, 58) = 10.74, $\underline{p}$

< .002 (one-tailed)[19]. Conversely, in the regulatory fit condition participants' team

worker ($\underline{M}$ = 4.70, $\underline{SD}$ = 1.08) and leader motivation ($\underline{M}$ = 4.48, $\underline{SD}$ = 1.19) did not

differ, $\underline{F}$(1, 58) < 1 (see Figure 12)[20].

Figure 12. Role motivation as a function of regulatory fit and role type in Study 2.
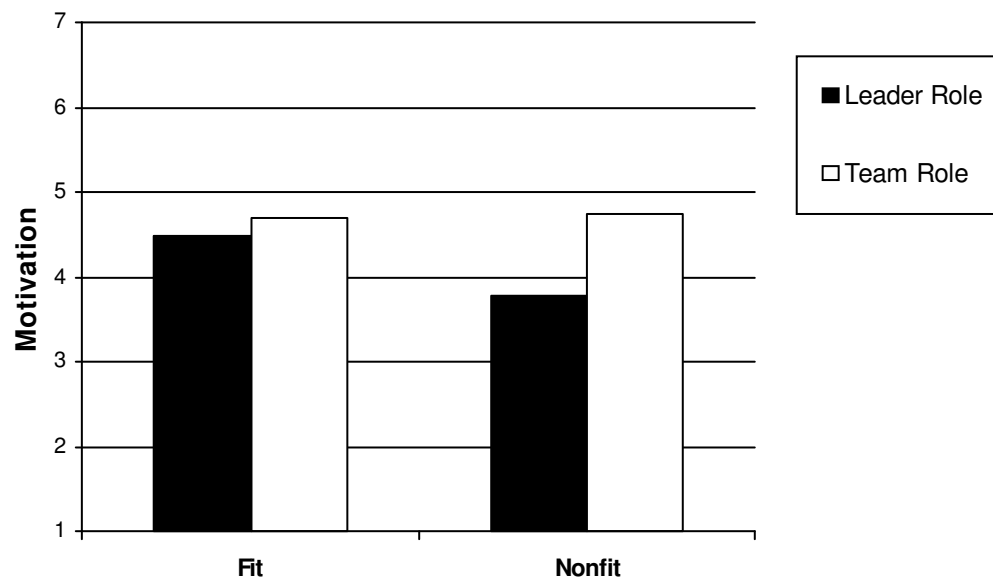
In line with Study 1 these results suggest that regulatory fit effects on

motivation occur only for the domain for which the stereotype is made (ir)relevant

and that regulatory fit enhances leader role motivation only relatively to the regulatory

nonfit conditions as opposed to an absolute preference of the leader role in

comparisons to other available roles.

---

[19]The contrasts between leader role motivation and team role motivation remained significant when computed for each regulatory nonfit condition individually (prevention focus/no stereotype threat: $\underline{F}$(1,56) = 4.53, $\underline{p}$ < .02 (one-tailed); promotion focus/stereotype threat: $\underline{F}$(1,56) = 5.96, $\underline{p}$ < .01 (one-tailed)).

[20] The contrasts between leader role motivation and team role motivation remained non-significant when computed for each regulatory fit condition individually (prevention focus/stereotype threat: $\underline{F}$(1,56) = 0.89, $\underline{p}$ > .10; promotion focus/no stereotype threat: $\underline{F}$(1,56) < 1, $\underline{p}$ > .10).

Mediated moderation. As in Study 1 the five items assessing self-efficacy for the role play were combined into a single measure (Cronbach's α = .76). The same analytic procedure as in Study 1 was applied. The Regulatory Focus x Stereotype Threat interaction was a significant predictor of leader role motivation while controlling for the main effects, $\underline{B}$ = 0.36, $\underline{t}$(56) = 2.07, $\underline{p}$ < .05. Also this interaction marginal significantly predicted self-efficacy in the role play, $\underline{B}$ = 0.21, $\underline{t}$(56) = 1.77, $\underline{p}$ < .09. Further, self-efficacy did strongly predict leader role motivation while controlling for the manipulations and their interaction, $\underline{B}$ = 0.67, $\underline{t}$(55) = 3.85, $\underline{p}$ < .001. And last the effect of Regulatory Focus x Stereotype Threat interaction as a predictor became non-significant when controlling for self-efficacy, $\underline{B}$ = 0.22, $\underline{t}$(55) = 1.36, $\underline{p}$ > .10. The beta was reduced from $\underline{B}$ = 0.36 to $\underline{B}$ = 0.22. Again as in Study 1 applying the Sobel (1982) test this reduction only leaned towards marginal significance, $\underline{Z}$ = 1.61, $\underline{p}$ > .10 (Goodman: $\underline{Z}$ = 1.65, $\underline{p}$ < .10). Although again only the marginal significance level was approached these results replicated those found in Study 1 suggesting that self-efficacy for the role play should be considered as a potential mediator of the effects of regulatory fit on leader role motivation in future studies.

2.2.2.4 Leadership Motivation – BIP

All selected items of the BIP scale were combined into a single score (Cronbach's α = .71). A significant interaction of stereotype threat and the situational regulatory focus was shown, $\underline{F}$(1, 56) = 8.49, $\underline{p}$ < .006. As expected, planned contrasts could show that when a prevention focus was induced, participants had significantly higher leadership motivation when in the stereotype threat than when in the no stereotype threat condition, $\underline{t}$(56) = 2.59, $\underline{p}$ < .007 (one-tailed). Respectively, when a

promotion focus was induced participants leadership motivation in the no stereotype threat condition was marginal significantly higher than in the no stereotype threat condition, $\underline{t}(56) = 1.53$, $\underline{p} < .07$ (one-tailed). Consequently, as expected and in line with the previous findings participants in the manipulated regulatory fit conditions showed higher leadership motivation than in the remaining regulatory nonfit conditions (for means and standard deviation see Table 6).

Table 6

<u>Leadership motivation (BIP) as a Function of Stereotype Threat and Situational Regulatory Focus (Study 2)</u>

Regulatory focus	Stereotype Threat					
	Threat			No Threat		
	<u>M</u>	<u>(SD)</u>	<u>n</u>	<u>M</u>	<u>(SD)</u>	<u>n</u>
Prevention	4.49	(.83)	15	3.67	(1.04)	15
Promotion	3.80	(.78)	15	4.28	(.82)	15

<u>Note.</u> Leadership motivation was rated on a scale from 1 to 7. Higher scores indicate higher motivation.

2.3   Discussion Study 1 and Study 2

In line with the predictions Study 1 and Study 2 could show that when activating (non-)stereotypic concerns and corresponding self regulatory concerns, regulatory fit effects occur. Specifically it was shown that when (non-)stereotypic concerns matched situationally activated self-regulatory concerns women's leader role motivation was enhanced as opposed to when activated (non-)stereotypic concerns did not match activated self-regulatory concerns. For chronic self-regulatory concerns however this effect could only be reliably replicated for participants whose self-regulatory concerns had a prevention focus. When regulatory concerns were situationally activated the effect could also be replicated on a general leadership motivation measure (BIP) in Study 2. In Study 1 however, it was again only shown for participants whose prevention concerns had been activated.

The stronger effects found for the situationally induced regulatory focus as compared to the chronic regulatory focus has two possible explanations. First, the reliabilities for the scales measuring prevention and promotion focus in Study 1 were somewhat weak (Cronbach's α's = .76 and .77). However, reliabilities were still satisfactory in Study 1 and on a sufficient level in Study 2 (Cronbach's α's = .82). Another explanation is that situationally activated regulatory concerns and (non-)stereotypic concerns both were manipulated while introducing the very same task and in fact both manipulations have even been intertwined. Consequently, regulatory concerns did not only (mis)match the (non-)stereotypic concerns in content and direction but also in the way they were activated thus possibly enhancing the (non)fit. A similar account could explain why the effect was weaker for the general leadership motivation measure (BIP). The manipulations were both targeted at the role play task,

thus leader role motivation for the role play was directly related to the manipulations whereas the general leadership motivation measure was closely related but not as directly connected to the concerns activated by the manipulations therefore possibly yielding weaker effects.

Furthermore, no evidence of a regulatory fit from situationally induced and chronic regulatory foci was found for both studies. Possibly the fit between the stereotype threat and regulatory focus manipulations was stronger and has overridden any further regulatory fit effects. Again, one might argue that stereotype threat and regulatory focus manipulations related to the very same task and therefore had a higher potential for a regulatory fit. While this explanation has to remain speculative, given that a regulatory fit due to individuals' chronic and situational regulatory focus was neither hypothesized nor shown with the manipulations and the measures used in the present studies it will not be explored further in the remainder of this thesis.

It is not clear why the effects for the chronic regulatory focus and in Study 1 for the general leadership motivation measure were found exclusively for participants with prevention concerns. Most studies on stereotype threat reveal a stronger effect when a negative stereotype is activated than when a positive stereotype is activated (e.g., Steele & Aronson, 1995). If this is also true for the two reported studies then a regulatory fit effect under prevention focus (i.e., when negative stereotypic concerns are activated) should be stronger than a regulatory fit effect under promotion focus (i.e., when positive non-stereotypic concerns are activated). This implies though that the differences in motivation between the regulatory fit and the regulatory nonfit conditions are due to an increase in motivation in the regulatory fit conditions. However, the effects might also have been a result of a decrease in motivation in the

regulatory nonfit conditions. To clarify this issue a control group assessing baseline motivation should be employed in future studies.

Moreover, Studies 1 and 2 could show that regulatory fit effects only affected participants' motivation for the leadership role but not for the team role in the role play. These results suggest that stereotype threat induced regulatory fit effects only occur for the domain of the activated stereotype (i.e., leadership). This distinguishes stereotype threat induced regulatory fit effects from other research investigating regulatory fit effects, which has shown that regulatory fit effects also occur for evaluations that are independent from the fit process itself (Higgins, Chen Idson, Freitas, Spiegel, and Molden, 2003, Study 4). This issue will be addressed in more detail in the general discussion.

Furthermore, when testing for mediation of the regulatory fit effects on leader role motivation by self-efficacy in both studies the necessary relationships to establish mediation were shown. Yet, both times the relationship between the interaction term and the dependent variable was not significantly decreased when adding the mediator to the equation. Nonetheless, these results suggest that self-efficacy should be considered as a potential mediator of regulatory fit effects on motivation. A methodological shortcoming of the mediational analyses in both studies is though that self-efficacy was assessed after the main dependent variable (i.e., leader role motivation) and thus it cannot be ruled out that the causal relation between both is reverse from the assumed and that the dependent variable has affected the mediator.

The results for test performance and effort have been inconsistent and mostly unpredicted in both studies. Possibly the analytic test was not perceived as a test of leadership abilities by all of the participants despite its description. Thus, it is suggested to use different performance test items for future studies.

2.4   Study 3

Study 3 was meant to compliment Studies 1 and 2 in three ways. *First*, Studies 1 and 2 did not show whether the effects of regulatory fit were due to an increase in motivation in the regulatory fit or to a decrease in motivation in the regulatory nonfit conditions. Thus, a control group was added in Study 3 to obtain information about the baseline. *Second*, the mediated moderation analyses in studies 1 and 2 examined the specific self-efficacy as a mediator of regulatory fit effects. Since, the specific self-efficacy was assessed after the main dependent variable it is not entirely clear whether the mediator itself has not been affected by the dependent variable. To clarify this issue and to further examine the impact of general self-efficacy as a mediator, general self-efficacy was assessed before the main dependent measure while specific self-efficacy was still measured after the dependent measure to reassess the mediational pattern shown in Studies 1 and 2. *Third* and most importantly, while Studies 1 and 2 investigated the impact of stereotype threat induced regulatory fit effects on motivation and performance, Study 3 was aimed to extend the findings of stereotype threat induced regulatory fit effects to other outcomes commonly found in regulatory fit research, namely the effect of *feeling right* (cf. Aaker & Lee, 2006). Feeling right from regulatory fit has been shown to increase positive or negative reactions to various stimuli. Specifically, it has been found that information was perceived to be more valid (Lee & Aaker, 2004) and messages have been more persuasive (Cesario et al., 2004). Regulatory fit violation on the other hand has been shown to produce a feeling of wrongness which was also transferred to subsequent evaluations (Camacho, et al., 2003). In order to assess whether a stimulus would have a more persuasive effect due to a feeling of rightness from regulatory fit in Study 3 we

manipulated regulatory fit in the same manner as in studies 1 and 2 and then presented participants either a negative or positive stimulus. The stimulus in Study 3 was either a positive or a negative role model. Given the vast array of research concerning the influence of role models on self-evaluation and behavior (e.g., performance and motivation) this issue will be addressed more detailed in the following section.

The role of role models for motivation and performance. The term role model has mainly been used to describe a person who is influential on others. In which way a role model is thought to exert this influence varies between different authors. The two most common descriptions of role models describe the role model's influence in the sense that a) others behavior will be modeled after the model's behavior, no matter if positive or negative, or b) the role model is an admirable and ideal exemplar who exerts a positive influence on others (cf. Nauta & Kokaly, 2001). The term role model will be used in this thesis in the sense of the first description, that is, as the description of a person whose positive or negative behavior serves as a model to others.

The most influential theories relating to a role model's influence on behavior are Bandura's (1977; 1982) social learning theory and Festinger's (1954) social comparison theory and their further advancements. According to social learning theory the observation of relevant role models lead to a reproduction of the model's behavior, such as career decisions (see Hackett & Betz, 1981), through an increase or decrease of a person's self-efficacy expectations for specific tasks (Bandura, 1977; 1982). Social comparison theory suggests that individuals are driven to make comparisons with similar others in order to gain knowledge about themselves, their opinions and abilities.

Subsequent research has focused on when individuals will assimilate to or contrast themselves from a comparison target (e.g., Lockwood & Kunda, 1997; Mussweiler, 2003; Stapel & Koomen, 2000; see also Schwarz & Bless, 2007). Consistent with the claim of social learning theory (Bandura, 1977; 1982), that individuals reproduce behavior of *relevant* role models, social comparison research has shown that individuals assimilate to a comparison target on self-evaluation, performance, motivational, and other behavioral measures when the comparison target is considered to posses relevant traits that are included in ones self-representation. On the contrary, individuals contrasted themselves from a comparison target when this was not perceived to be close to themselves and thus used as a reference point for self-evaluations (e.g. Brown, Novick, Lord, & Richards, 1992; Stapel & Koomen, 2000). In support of this argument, it was shown that individuals assimilate their self-evaluations to members of the same group. That is, individuals tended to have negative self-evaluations after a downward comparison and positive self-evaluations after an upward comparison with an in-group member (Brewer & Weber, 1994; Brown et al., 1992).

Role models have also been applied in research on stereotype threat (e.g., Marx & Roman, 2002; Marx et al., 2005; McIntyre et al., 2003; McIntyre, Lord, Gresky, Ten Eyck, Frye, & Bond, 2005). In these studies positive female role models under stereotype threat have lead to assimilation effects for women but contrast effects for men in self-evaluations and subsequent performance whereas in no threat conditions positive female role models lead to contrast effects (i.e., worse test performance) for women (Marx & Roman, 2002; Marx et al., 2005). Marx et al. argue that because an individual's concern about their group image is at stake (i.e., the burden to disproof the stereotype for women or the burden to proof the stereotype for

men, see Brown & Josephs, 1999), the social self is more accessible under stereotype threat. Therefore, information about other in-group members is more likely to be perceived as part of the self (inclusion) which leads to the perception of closeness to other in-group members. This perception of closeness triggered women's assimilation to the positive female role model under stereotype threat. Under conditions of no stereotype threat, on the other hand, women did not perceive the positive female role model as close to themselves, which lead to a contrast effects from the role model. Consequently, if a positive role model is not perceived to include self-relevant information it will not have positive but can have negative effects on behavior (e.g., self-evaluation and performance).

For Study 3 it was assumed that, if a role model is portrayed as possessing several attributes that are self-relevant to the participant and the perception of the role model is persuasive because of a feeling of rightness from regulatory fit then assimilation to the role models' behavior should occur. In contrast, if participants feel wrong due to a regulatory nonfit and therefore the description of the role model is not persuasive, that is, the role model is not considered to possess traits that are included in participants' self-concepts, then this should result in a contrast from the role models' behavior. Given the findings of previous research on the influence of role models and self-efficacy (see below) on behavior, assimilation or contrast effects are thought to occur on motivation *and* performance measures simultaneously.

Further, impression related concerns and feelings of pressure were assessed as additional dependent variables to test whether participants would despite feeling right from regulatory fit from stereotype threat not feel good. That is, it was tested whether their feelings of pressure and concern as proposed by the MERF model (i.e., fear to

confirm negative expectancies or not to conform to positive expectancies; see Keller & Bless, 2008) would intensify under conditions of regulatory fit.

Different leadership motivation measures as described below and test performance served as the main dependent variables. As in Study 1 participants' test performance was assessed after the leadership motivation measures. Since the results on the performance measure in Studies 1 and 2 were not satisfactory in Study 3 the performance test was altered in a way to appear more likely as a test of leadership as opposed to analytic abilities and some different test items were used (see Appendix B).

It was expected that when participants feel right due to regulatory fit the role model would be perceived as more valid and persuasive and thus motivation and performance would increase when a positive role model is presented whereas motivation and performance would decrease when a negative role model is presented. Furthermore, it was assumed that when participants feel wrong due to regulatory nonfit the role model would be perceived as less valid and persuasive and thus motivation and performance would decrease when a positive role model is presented whereas motivation and performance would increase when a negative role model is presented. Participants in the control condition should provide information about the baseline level of motivation and performance which was in general expected to be rather low due to the negative culturally shared stereotype for women in leadership positions. Thus, it was hypothesized that participants who are confronted with a positive role model will show higher leadership motivation and performance in the regulatory fit than in the regulatory nonfit and the control conditions and that participants who are confronted with a negative role model will show higher leadership motivation and performance in the regulatory nonfit than in the regulatory

fit and control conditions. Parallel to Studies 1 and 2 it was hypothesized that self-efficacy would mediate the assumed interactive effects of regulatory fit with role models on motivation. In particular, it was thought that when a role model as a stimulus was more persuasive due to a regulatory fit participants would assimilate their self-efficacy expectations to the role model's valence, i.e., self-efficacy would increase when confronted with a positive role model and decrease when confronted with a negative role model (see Bandura, 1977; 1982). On the other hand, when a role model as a stimulus was less persuasive due to a regulatory nonfit participants would contrast their self-efficacy expectations from the role model's valence, i.e., self-efficacy would increase when confronted with a negative role model and decrease when confronted with a positive role model. Further, it was hypothesized that participants' impression related concerns and feelings of pressure would be stronger in the regulatory fit as compared to the regulatory nonfit conditions.

2.4.1   Method

2.4.1.1   Design and Participants

A 2 (stereotype threat: threat vs. no threat) x 2 (regulatory focus: prevention vs. promotion) x 2 (role model: negative vs. positive) design resulting in a 2 (regulatory fit: fit vs. nonfit) x 2 (role model: negative vs. positive) design was applied with a non-factorial control group. Leadership motivation and performance served as the primary dependent measures. Participants were 135 female students at the University of Mannheim who were randomly assigned to the conditions. Seventeen participants had to be eliminated from the analyses because they were suspicious concerning the nature of the study and another four participants were

excluded, because they failed to follow the study's instructions. Therefore, the subsequent analyses were performed with the remaining 114 participants.

2.4.1.2   Procedure

Female students, who were approached on campus and agreed to participate in the study for the compensation of 2.50 Euros and a chocolate bar, were lead into the laboratory where they met the experimenter. They were then asked to fill out a sign-up sheet with demographic information which among other questions asked about their major of study. This information was used later in the experiment to match each participant with the appropriate role model. It should be noted that the questions assessing demographic variables did not contain an item assessing participants' gender at this point. This was avoided, because a number of studies have manipulated stereotype threat via assessing participants' gender prior to a performance test (e.g., Steele & Aronson, 1995; cf. Steele et al., 2002). The rest of the procedure resembled that applied in Study 1 with the add-on that participants received the information about the role model after the first manipulation of stereotype threat and regulatory focus. The procedure for participants in the control group resembled the one for participants in the other conditions with the exception that they neither received information about a role model nor any of the manipulations.

Accordingly, participants received the first set of the questionnaire including the chronic measure of regulatory focus. Then they received the second set which contained the sample performance test item and the stereotype threat and regulatory focus manipulation in relation to the performance test followed by five items from the general self-efficacy scale (Schwarzer, 1994).

Role model manipulation. After the second set the role model information was handed out. The role model manipulation was modeled after Lockwood et al. (2002) and Marx et al. (2005). In order to facilitate a sense of closeness between the role model and the participant the role model was described as sharing several self-relevant features with the participants (e.g., gender, University, major), was a few years older than the average participant ($\underline{M}$ = 22.13) and was given a name among the three most popular first names within that birth cohort in Germany (www.beliebte-vornamen.de). Participants in the negative and positive role model conditions were told that they would participate in another unrelated study concerning writing style and means of presentation of print media. They then received a bogus newspaper article. In the newspaper article participants were told that Julia K., age 26 and a former student from the University of Mannheim, had been interviewed by the newspaper to inspect whether getting a university degree would pay off. They also learned that Julia K. had just graduated in a subject area that was matched with their major as indicated in the sign-up sheet (i.e., social sciences, language, or business sciences). Then the article continued with Julia K. reporting her experiences after graduation. Participants in the positive role model condition read that Julia K. had graduated with a very good degree and has now found a promising position where she already is successfully taking over leadership tasks and will probably be promoted soon. Participants in the negative role model condition on the other hand read that Julia K. was mostly working within a team, had difficulties fulfilling the tasks, has no chances of being promoted, and might loose her job after the probation period (for the exact wording of the role model manipulation see Appendix A). After reading the newspaper article participants were asked to indicate in which newspaper they thought this article had appeared and indicate how similar they perceived Julia K. to

themselves on a scale from 1 (*not at similar*) to 7 (*very similar*). After the role model manipulation the third set of the questionnaires was handed out with information about the role play and the stereotype threat and regulatory focus manipulation in relation to the role play.

   Dependent measures. After already assessing general self-efficacy in the second set of the questionnaire, in the third set participants' leader role motivation and specific self-efficacy ratings were assessed parallel to Studies 1 and 2. In addition, participants received two items assessing their impression related concerns (i.e., "I am concerned that I will be seen as a success or failure" and "I am concerned about what other people think of me"; see Marx et al., 2005, p. 439) on a scale from 1 (*not at all true*) to 7 (*very true*). Then participants received the leadership motivation items (BIP) but differing from Studies 1 and 2 participants' ratings on *all original* items of the leadership motivation scale (BIP) containing 15 items were assessed (see Appendix B for the full scale). Next participants completed a new measure of leadership motivation: they indicated their degree of interest in a leadership workshop (see Appendix B). This leadership motivation measure was adapted after Ehrlinger and Dunning (2003), who assessed gender differences in motivation for mathematics. A flyer was handed out with the questionnaire announcing a free workshop about leadership competence at the career center of the University of Mannheim. Participants were asked to indicate on three dichotomous scales whether or not they were interested in (1) participating in the workshop (2) receiving free information material about the workshop and (3) being added to a mailing list on leadership competence. Following this last leadership motivation measure participants were asked to indicate how they were feeling on four emotional adjectives related to

pressure and concern (i.e., agitated, calm (reverse coded), insecure, nervous)[21] on a scale from 1 (*not at all true*) to 7 (*very true*).

After completing the third set of the questionnaire participants received the performance test ostensibly assessing leadership abilities. At the beginning of the test the stereotype threat and regulatory focus manipulations in relation to the performance test were repeated as stated in the second set of the questionnaire. Then participants were given nine test items which were framed as assessing basic abilities needed for leadership tasks. The first eight test items were verbal analogies taken from a German version of the Intelligence-Structure-Test 2000 (I-S-T 2000; Amthauer, Brocke, Liepmann, & Beauducel, 1999). The last test item was an altered version of the first test item from Studies 1 and 2. The test item was rewritten to match a leadership task setting (see Appendix B). Again participants were told that they had no more than eight minutes to solve the test items. Last a similar manipulation check measure as in Studies 1 and 2 was completed.

2.4.2   Results and Discussion

2.4.2.1   Manipulation Check

The same measure as in Studies 1 and 2 was used. Again higher values indicated a higher estimate for men's in comparison to women's performance. Four participants did not complete the manipulation check measure and thus were excluded from the analysis.

---

[21] Note that these emotions resemble those associated with a prevention focus (e.g., Higgins et al., 1997; Higgins et al., 1999). However, emotions associated with a particular regulatory focus occurred *after* a person has succeeded or failed to attain his or her goal. Given that participants in the current study are still in the goal-attainment *process*, it is put forward here that emotions elicited through the interaction of individuals' regulatory goals and stereotypic expectancies (i.e., pressure and concern) will be prevalent and possibly enhanced by a regulatory fit (see Idson et al., 2004).

A 2 (stereotype threat) x 2 (regulatory focus) x 2 (role model) ANOVA revealed the expected main effect for stereotype threat. Participants in the stereotype threat conditions showed a higher estimate of men's in comparison to women's performance on the test ($\underline{M}$ = 14.87, $\underline{SD}$ = 15.45) than participants in the no stereotype threat conditions ($\underline{M}$ = -1.94, $\underline{SD}$ = 13.66), $\underline{F}$(1, 54) = 33.35, $\underline{p}$ < .001 (one-tailed). No other effects emerged, all p's > .05. Hence, it can be concluded that the stereotype threat manipulation was successful.

2.4.2.2   *Leadership Motivation*

In Study 3 an overall measure of leadership motivation was computed by combining the items of all three dependent variables assessing leadership motivation (i.e., leader role motivation, the leadership motivation scale (BIP), and interest in the leadership workshop). The leader role motivation measure and the leadership motivation scale were each assessed on a scale from 1 (*low motivation*) to 7 (*high motivation*). However, the measure assessing participants' interest in the leadership workshop was measured via three dichotomously scaled items. The interest in the leadership workshop was calculated as the number of positive answers concerning interest in the workshop yielding a scale from 0 (*no interest*) to 3 (*high interest*). Since, the measures assessing leadership motivation used different scales each measure was standardized (including the control group) and the overall leadership motivation measure was computed by combining the z-scores of all items into a single measure (Cronbach's α = .90). This procedure seemed reasonable since the overall leadership scale yielded quite satisfactory reliabilities and running the analyses for each measure separately would be redundant.

The overall leadership motivation measure had a range from -1.6 (lowest motivation) to 1.45 (highest motivation) and a standard deviation of .58. A 2 (stereotype threat) x 2 (regulatory focus) x 2 (role model) ANOVA yielded a significant 3-way interaction, $\underline{F}$(1, 91) = 4.03, $\underline{p}$ < .03. Planned contrasts revealed that as predicted when a positive role model was presented participants' leadership motivation under a prevention focus was marginal significantly higher in the stereotype threat (regulatory fit) as compared to the no stereotype threat (regulatory nonfit) condition, $\underline{t}$(91) = 1.55, p < .07 (one-tailed). Likewise did participants under a promotion focus when a positive role model was presented have marginal significantly higher leadership motivation in the no stereotype threat (regulatory fit) as compared to the stereotype threat (regulatory nonfit) condition, $\underline{t}$(91) = 1.55, p < .07 (one-tailed). Even though when a negative role model was presented participants leadership motivation under a prevention focus was lower in the stereotype threat (regulatory fit) as compared to the no stereotype threat (regulatory nonfit) condition and participants under a promotion focus had lower leadership motivation in the no stereotype threat (regulatory fit) as compared to the stereotype threat (regulatory nonfit) condition those differences were not shown to be significant, $\underline{t}$'s = -1.22 and -.19, $\underline{p}$'s < .10 (see Table 7 for means and standard deviation).

Table 7

Leadership Motivation (overall measure) as a Function of Stereotype Threat, Situational

Regulatory Focus and Role Model (Study 3)

| | Stereotype Threat | | | | | |
| | Threat | | | No Threat | | |
Role Model	$\underline{M}$	$(\underline{SD})$	$\underline{n}$	$\underline{M}$	$(\underline{SD})$	$\underline{n}$
Positive						
Prevention Focus	0.27	(.63)	11	-0.09	(.64)	13
Promotion Focus	-0.25	(.60)	12	0.11	(.52)	13
Negative						
Prevention Focus	-0.10	(.39)	12	0.18	(.59)	14
Promotion Focus	0.09	(.66)	12	0.05	(.54)	12

Note. Leadership motivation is shown in z-values. Higher scores indicate higher

motivation.

The results for participants' leadership motivation were in the predicted

direction as participants who were given a positive role model showed higher

leadership motivation in the regulatory fit as compared to the regulatory nonfit

conditions and participants who were given a negative role model showed lower

leadership motivation in the regulatory fit as compared to the regulatory nonfit

conditions. However, the results for the negative role model were not shown to be

significant.

In previous research positive role models have shown to be more influential than negative role models and negative role models were only shown to be influential when participants were forced to reflect on the similarities between themselves and the role model (Lockwood, 2002). Thus, it is possible that the positive role model overall had more influence on participants' motivation because participants identified more strongly with the positive than with the negative role model. Furthermore, individuals with a promotion focus are more sensitive to positive information and are more likely to generate positive role models whereas individuals with a prevention focus are more sensitive to negative information and are more likely to generate negative role models (Higgins, 2000; Lockwood et al., 2002). Thus, it is likely that a higher identification with a positive as opposed to a negative role model would be more pronounced among individuals with a promotion focus as compared to those with a prevention focus. To test this assumption a 2 (regulatory focus) x 2 (role model) ANOVA with perceived similarity to the role model as a dependent measure was performed. As expected a marginal significant main effect for role model emerged, $F(1, 95) = 3.23$, $p < .08$, showing that participants' who were given a positive role model found themselves more similar to the role model ($M = 3.57$, $SD = 1.29$) than those who were given a negative role model ($M = 3.08$, $SD = 1.56$). Further, a significant role model by regulatory focus interaction was shown, $F(1, 95) = 5.66$, $p < .02$[22]. Simple comparisons revealed that participants only perceived themselves as more similar to the positive role model ($M = 3.76$, $SD = 1.16$) as compared to the negative role model ($M = 2.58$, $SD = 1.38$) when they were under a promotion focus, $F(1, 95) = 8.64$, $p < .005$. Participants under a prevention focus perceived themselves as slightly more similar to the negative role model ($M = 3.54$,

---

[22] A 2 (stereotype threat) x 2 (regulatory focus) x 2 (role model) ANOVA yielded no significant main effect or interactions for stereotype threat, $F's (1, 91) = .03$ to 1.81, $p's > .10$. Thus, this factor is not presented in the analysis.

$\underline{SD}$ = 1.61) as compared to the positive role model ($\underline{M}$ = 3.38, $\underline{SD}$ = 1.41) this difference however was non-significant, $\underline{F}$(1, 95) < 1. These differences in perceived similarity to the role model can only explain the null findings in the negative role model conditions for promotion-focused participants. Thus, the weaker findings among participants who were given a negative role model cannot fully be explained. However, the prior analyses have not taken the control group as a comparison into account.

Comparison with the control group. Since the control group was non-factorial it could not be embraced into the analytic design. However, planned contrasts revealed that participants in the regulatory fit conditions had significantly higher leadership motivation ($\underline{M}$ = .18, $\underline{SD}$ = .56) than the control group ($\underline{M}$ = -.24, $\underline{SD}$ = .64) when a positive role model was presented, $\underline{t}$(109) = 2.21, $\underline{p}$ < .02 (one-tailed). Likewise participants in the regulatory nonfit conditions had significantly higher leadership motivation ($\underline{M}$ = .14, $\underline{SD}$ = .61) than the control group when a negative role model was presented, $\underline{t}$(109) = 1.99, $\underline{p}$ < .03 (one-tailed)[23]. Participants leadership motivation in the regulatory fit conditions when a negative role model was given ($\underline{M}$ = .02, $\underline{SD}$ = .46) and in the regulatory nonfit conditions when a positive role model was given ($\underline{M}$ = -.17, $\underline{SD}$ = .61) on the other hand did not differ from the control group, $\underline{t}$'s (109) = 1.11 and .36, $\underline{p}$'s > .10[24] (see Figure 13).

---

[23]The contrasts with the control group remained significant or marginal significant when computed for each regulatory fit and regulatory nonfit condition individually (positive role model: prevention focus/stereotype threat: $\underline{t}$(105) = 2.19, $\underline{p}$ < .02 (one-tailed); promotion focus/no stereotype threat: $\underline{t}$(105) = 1.55, $\underline{p}$ < .07 (one-tailed) / negative role model: prevention focus/no stereotype threat: $\underline{t}$(105) = 1.91, $\underline{p}$ < .03 (one-tailed); promotion focus/stereotype threat: $\underline{t}$(105) = 1.43, $\underline{p}$ < .08 (one-tailed)).

[24]The contrasts with the control group remained non-significant when computed for each regulatory fit and regulatory nonfit conditions individually (positive role model: prevention focus/no stereotype threat:

$\underline{t}$ (105) = .66; promotion focus/stereotype threat: $\underline{t}$(105) = -.08 / negative role model: prevention focus/stereotype threat: $\underline{t}$(105) = .62; promotion focus/no stereotype threat: $\underline{t}$(105) = 1.24, all $\underline{p}$'s > .10.

Figure 13. Leadership motivation (overall measure) as a function of regulatory fit and

role model compared to the control group (CG) in Study 3.
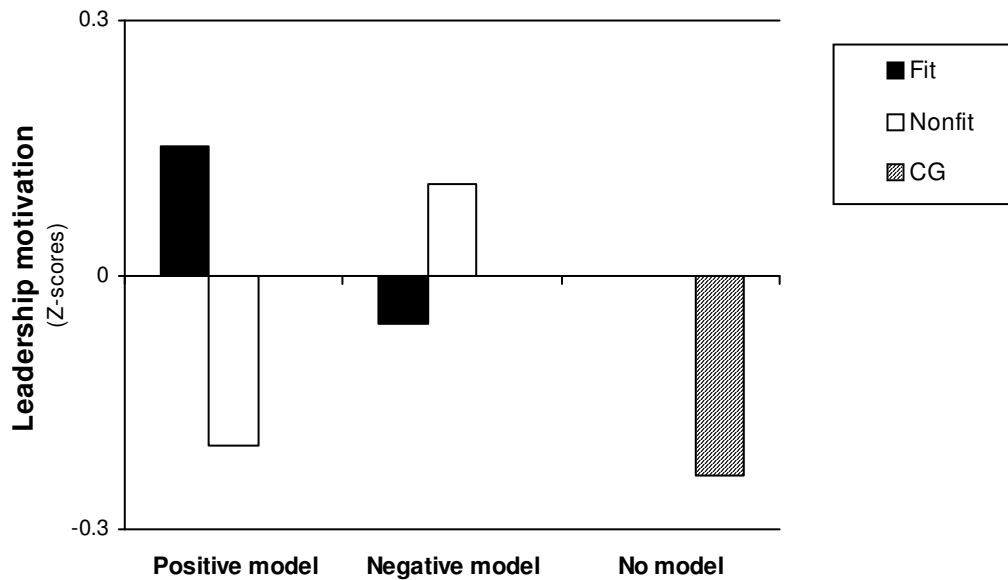
In sum, positive role models have been more motivating under regulatory fit as

compared to regulatory nonfit and as compared to the control group. Negative role

models have been more motivating under regulatory nonfit as compared to the control

group. In the present study the effects were more pronounced for positive role models,

which is possibly due to participants' stronger identification with a positive as

opposed to a negative role model. However, in comparison to the control group the

negative role model has also shown the expected effects.

These results suggest that a regulatory fit from stereotype threat leads to a

feeling of rightness which in turn enhances the persuasion and the perception of

validity of positive and partially negative role models. Further, it is suggested that a

regulatory nonfit from stereotype threat leads to a feeling of wrongness which in turn

decreases the persuasion and the perception of validity of positive and partially negative role models. It has to be noted that similar to previous research examining the feeling of rightness from regulatory fit, this feeling was not measured in this study and thus can only be assumed. Similarly, the perception of validity of the role model was also not measured but is merely inferred from individuals' behavior. These limitations will be addressed in more detail in the general discussion of this thesis.

Chronic regulatory focus. A different item than in Studies 1 and 2 had to be eliminated from the promotion subscale (item 9, see Appendix A) due to an unsatisfactory item total correlation ($\underline{r}$' < .25). With the remaining items both the prevention and promotion subscales yielded satisfactory reliabilities (prevention focus: Cronbach's α = .81, promotion focus: Cronbach's α = .74). The two subscales were not correlated, $\underline{r}$ = -.03, $\underline{p}$ > .10. Again a difference of participants' ratings on the promotion scale minus participants' ratings on the prevention scale was computed. Then a median split was performed. The median split was computed without the control group, because the number of participants ($\underline{n}$ = 15) was not large enough to compute meaningful statistical analyses when the control group would be split by its median. Fifty-two participants' who had higher ratings than the median ($\underline{Mdn}$ = .89) on the scale were grouped as having a chronic promotion focus whereas 47 participants' who had lower or equal ratings than the median were grouped as having a chronic prevention focus. The 2 (stereotype threat) x 2 (chronic regulatory focus) x 2 (role model) ANOVA showed a significant main effect for chronic regulatory focus on leadership motivation, $\underline{F}$(1, 91) = 3.51, $\underline{p}$ < .002. Participants with a chronic promotion focus showed higher leadership motivation ($\underline{M}$ = .20) than those with a chronic prevention focus ($\underline{M}$ = -.16). Unexpectedly, no other effects were found. When compared to the control group planned contrasts showed that each cell which

contained participants with a chronic promotion focus showed significantly higher leadership motivation than the control group, $\underline{t}$'s (105) = 1.79 to 2.20, $\underline{p}$'s < .04 (one-tailed).

As already shown in Studies 1 and 2, stereotype threat induced regulatory fit effects are stronger for the situationally induced regulatory focus. It remains unclear, however, why no effects of chronic regulatory focus in interaction with stereotype threat were found. Nevertheless, it is not surprising that participants with a chronic promotion focus showed higher leadership motivation than those with a chronic prevention focus, given that a promotion focus is associated with eagerness-related means and end-states like accomplishment and advancement, which in turn are associated with advancement into leadership positions.

Considering the fact that again stronger results appeared for the situational regulatory focus all further analyses reported for Study 3 will show the findings for the situational regulatory focus only.

Team role motivation. To compare participants' leader role motivation to their team role motivation the four items assessing role motivation were combined for each role (leader role: Cronbach's α = .90; team role: Cronbach's α = .82). A 2 (regulatory fit: fit vs. nonfit) x 2 (role model: positive vs. negative) x 2 (role type: leader vs. team worker role) MANOVA was performed with role type as the within subject factor. A significant main effect for role type occurred, $\underline{F}$(1, 95) = 17.67, $\underline{p}$ < .001. Overall participants showed higher team worker role motivation ($\underline{M}$ = 5.00, $\underline{SD}$ = 1.12) than leader role motivation ($\underline{M}$ = 4.15, $\underline{SD}$ = 1.49). Surprisingly, no other effects emerged.

Despite a non-significant interaction, planned contrasts were computed to determine in which cells team role motivation and leader motivation would differ (see Figure 14). It was expected that leader role motivation would differ from team role

motivation in those conditions which were thought to decrease leadership motivation. On the other hand leader role motivation should not differ from team role motivation when an increase of leadership motivation was expected. Indeed it was shown that when a positive role model was presented, leader role motivation ($\underline{M}$ = 4.37, $\underline{SD}$ = 1.67) did not differ from team role motivation ($\underline{M}$ = 4.89, $\underline{SD}$ = 1.43) under conditions of regulatory fit, $\underline{F}(1,95)$ = 1.63, $\underline{p}$ > .10, whereas under conditions of regulatory nonfit leader role motivation ($\underline{M}$ = 3.86, $\underline{SD}$ = .96) and team role motivation ($\underline{M}$ = 4.73, $\underline{SD}$ = 1.22) differed marginally, $\underline{F}(1,95)$ = 3.74, $\underline{p}$ < .06. Further, when a negative role model was presented, leader role motivation ($\underline{M}$ = 4.15, $\underline{SD}$ = 1.35) significantly differed from team role motivation ($\underline{M}$ = 5.24, $\underline{SD}$ = 1.54) under conditions of regulatory fit, $\underline{F}(1,95)$ = 7.19, $\underline{p}$ < .01. Unexpectedly, leader role motivation ($\underline{M}$ = 4.25, $\underline{SD}$ = .99) did also differ significantly from team role motivation ($\underline{M}$ = 5.14, $\underline{SD}$ = 1.26) under conditions of regulatory nonfit when a negative role model was presented, $\underline{F}(1,95)$ = 5.21, $\underline{p}$ < .03.

Figure 14. Role motivation as a function of regulatory fit and role type for the positive and negative role model in Study 3.

Positive role model

Negative role model
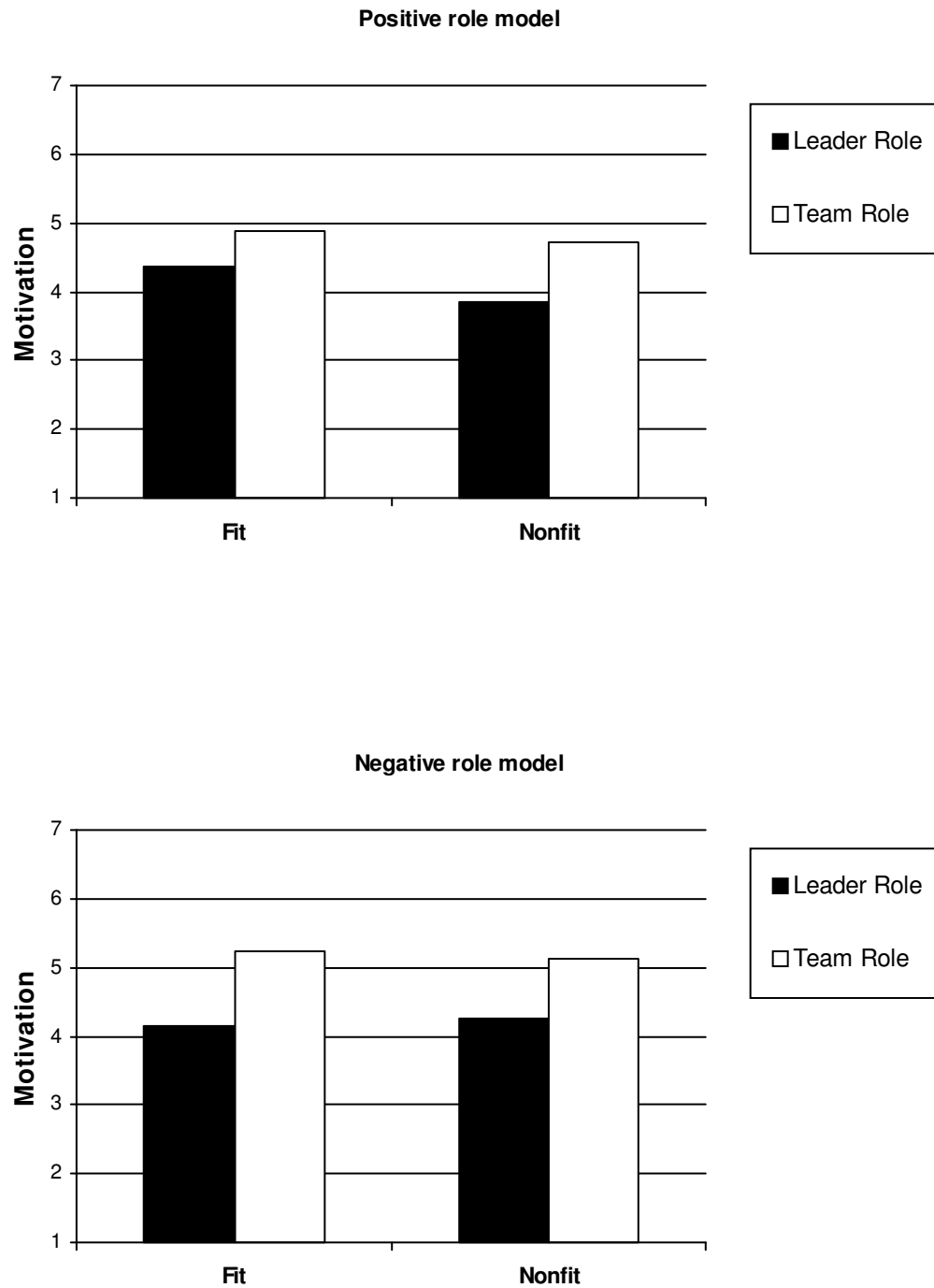
Surprisingly, the results for the overall leadership motivation measure could not be replicated. No interaction of role model by regulatory fit was found. In addition, the expected 3-way interaction was also not found. Since not qualified by a significant interaction term these results cannot be interpreted ultimately. Nonetheless, the results partially point in the expected direction. It appears that a positive role model has been persuasive and thus enhanced participants' motivation under conditions of regulatory fit bringing it on one level with participants' team role motivation. Under conditions of regulatory nonfit the same positive role model had no motivating effect on leadership motivation which remained lower than their motivation for the team role. However, as shown in the previous analyses of the overall leadership motivation measure, no effects of regulatory fit could be found when the negative role model was presented.

Mediated moderation. The five items assessing general self-efficacy and the five items assessing specific self-efficacy for the role play together yielded a satisfactory reliability (Cronbach's α = .89) thus all 10 items where combined into a single measure[25]. The analytic procedure for testing for mediation as in studies 1 and 2 was applied. As shown before the Regulatory Focus x Stereotype Threat x Role Model interaction was a significant predictor of leadership motivation while controlling for the main effects and the two-way interactions, $\underline{B}$ = 0.13 $\underline{t}$(91) = 2.24, $\underline{p}$ < .03. Also this three-way interaction marginal significantly predicted the combined self-efficacy measure, $\underline{B}$ = 0.17, $\underline{t}$(91) = 1.80, $\underline{p}$ < .08. Further, self-efficacy did strongly predict leader role motivation while controlling for the manipulations and their interactions, $\underline{B}$ = 0.44, $\underline{t}$(90) = 9.34, $\underline{p}$ < .001. And last the effect of the Regulatory Focus x Stereotype Threat x Role Model interaction as a predictor became

---

[25]The general and specific self-efficacy measures separately yielded reliabilities of Cronbach's α = .81 and .83, respectively.

non-significant when controlling for self-efficacy, $\underline{B}$ = 0.06, $\underline{t}$(90) = 1.35, $\underline{p}$ > .10. The beta was reduced from $\underline{B}$ = 0.13 to $\underline{B}$ = 0.06. As shown by the Sobel (1982) test this reduction was marginal significant, $\underline{Z}$ = 1.76, $\underline{p}$ < .08 (Goodman $\underline{Z}$ = 1.77, $\underline{p}$ < .08)[26]. Hence, extending on the findings of Studies 1 and 2 the effects of the role model on leadership motivation by regulatory fit condition showed a marginal partial mediation effect by self-efficacy. Additionally, in Study 3 effects of the dependent variable on self-efficacy were ruled out and general self-efficacy was established as a partial mediator.

2.4.2.3 Impression Related Concerns and Pressure Related Feelings.

The two items assessing impression related concerns and the four items assessing pressure related feelings yielded a satisfactory a reliability (Cronbach's α = .80) thus all six items where combined into a single measure[27]. A 2 (stereotype threat) x 2 (regulatory focus) x 2 (role model) ANOVA yielded a significant 2-way interaction, $\underline{F}$(1, 91) = 7.52, $\underline{p}$ < .008. No other effects were found. Planned contrasts showed that when a prevention focus was induced participants had significantly higher impression related concerns and pressure related feelings when their regulatory concerns (i.e., approaching a non-loss) matched the concern that was activated by the stereotype threat condition (i.e., the loss of confirming the negative stereotype under stereotype threat) than when it did not (i.e., the gain of conforming to positive expectancies under no stereotype threat), $\underline{t}$(91) = 2.02, $\underline{p}$ < .03 (one-tailed). Likewise,

---

[26]The mediation model yielded comparable results when computed for (a) the general and (b) the specific self-efficacy measures separately. Self-efficacy was predicted by the 3-way interaction, (a) $\underline{B}$ = 0.17, $\underline{t}$(91) = 1.64, $\underline{p}$ < .10, (b) $\underline{B}$ = 0.17, $\underline{t}$(91) = 1.72, $\underline{p}$ < .09. Self-efficacy predicted leader role motivation while controlling for the manipulations and their interaction, (a) $\underline{B}$ = 0.34, $\underline{t}$(90) = 7.12, $\underline{p}$ < .001, (b) $\underline{B}$ = 0.42, $\underline{t}$(90) = 9.47, $\underline{p}$ < .001. And the effect of the 3-way interaction as a predictor became non-significant when controlling for self-efficacy, (a) $\underline{B}$ = 0.07, $\underline{t}$(90) = 1.56, $\underline{p}$ > .10, (b) $\underline{B}$ = 0.06, $\underline{t}$(90) = 1.43, $\underline{p}$ > .10. Sobel test: (a) $\underline{Z}$ = 1.58, $\underline{p}$ < .11 (Goodman $\underline{Z}$ = 1.60, $\underline{p}$ < .11) (b) $\underline{Z}$ = 1.69, $\underline{p}$ < .10 (Goodman $\underline{Z}$ = 1.70, $\underline{p}$ < .09.

[27] The measures separately yielded reliabilities of Cronbach's α = .72 for impression related concerns and .86, respectively, for pressure related feelings.

when a promotion focus was induced participants had significantly higher impression related concerns and pressure related feelings when their regulatory concerns (i.e., approaching a gain) matched the concern that was activated by the stereotype threat condition (i.e., gain under no stereotype threat) than when it did not (i.e., loss under stereotype threat), $t(91) = 1.86$, $p < .04$ (one-tailed; see Table 8 for means and standard deviation).[28]

Table 8

Impression Related Concerns and Pressure Related Feelings as a Function of Stereotype Threat and Situational Regulatory Focus (Study 3)

| | Stereotype Threat | | | | | |
| | Threat | | | No Threat | | |
Regulatory focus	M	(SD)	n	M	(SD)	n
Prevention	3.66	(1.30)	14	2.99	(.93)	15
Promotion	2.88	(1.16)	14	3.51	(1.22)	15

Note. Scales from Impression Related Concerns and Pressure Related Feelings were combined into a single score. All scales were rated from 1 to 7. Higher scores indicate higher values.

---

[28] The contrasts remained significant when computed for prevention focus/stereotype threat vs. prevention focus/no threat on pressure related feelings, $t(91) = 2.09$, $p < .02$ (one-tailed), and for promotion focus/no stereotype threat vs. promotion focus-threat on impression related concerns, $t(91) = 1.91$, $p < .04$ (one-tailed). However, the contrast between promotion focus/no stereotype threat vs. promotion focus-threat on pressure related feelings was only marginal significant, $t(91) = 1.32$, $p < .10$ (one-tailed), and the contrast between prevention focus/stereotype threat vs. prevention focus/no threat on impression related concerns turned out to be not significant, $t(91) = 0.95$, $p > .10$.

Comparison with the control group. The general pattern of impression related concerns and pressure related feelings was in line with the assumption that concerns and feelings of pressure increase from regulatory fit and decrease from regulatory nonfit from stereotype threat (see Figure 15). However, none of the planned contrasts with the control group yielded a significant result, $\underline{t}$'s (126) = -.46 to 1.2, $\underline{p}$'s < .10.

Figure 15. Impression related concerns and pressure related feelings as a function of regulatory fit and role model compared to the control group (CG) in Study 3.
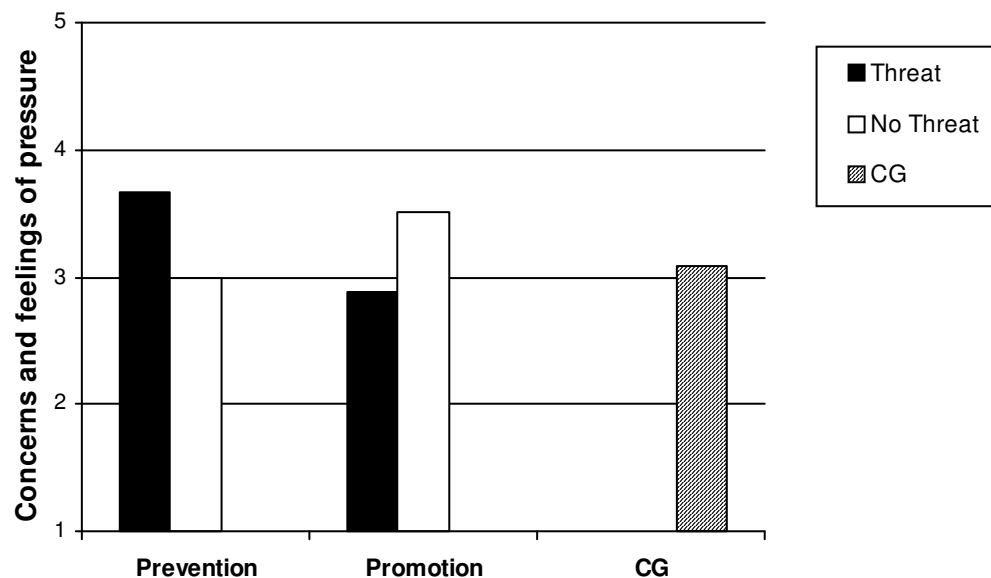
Note: The x-axis was reduced for the purpose of presentation. Original scales ranged from 1 to 7.

These results show that impression related concerns and pressure related feelings are higher in regulatory fit as opposed to nonfit conditions when induced by stereotype threat. However, no comparisons with the control group yielded a significant result. Thus, these results can only present a first step towards supporting

the assumption that although participants might feel right in regulatory fit conditions and feel wrong in regulatory nonfit conditions at the same time they feel pressured and concerned to live up to regulatory standards under regulatory fit as opposed to nonfit conditions. Both feeling right and feeling pressured or concerned might have resulted from intensified reactions under regulatory fit from stereotype threat.

Furthermore, the detrimental effects on performance as shown by Keller and Bless (2008) in conditions similar to the regulatory fit from stereotype threat conditions[29] in the present work might be explained by those feelings of pressure and concern. Indeed the effects shown by Keller and Bless were mediated by individuals' apprehension or concern to meet their regulatory goals. Feeling pressured and concerned could reduce a person's working memory and thus decrease task performance. However, follow-up studies investigating these processes in more detail and showing stronger empirical evidence must be conducted in order to provide a more robust validation of these statements than found in the present experiment.

2.4.2.4   Test Performance and Effort

As a performance measure the number of solved items was computed. Further, as a measure of effort on the performance test the number of attempted items were counted. For test effort no analyses could be performed, because only two participants attempted less than eight out of nine test items yielding insufficient variance within the sample. However, a 2 (stereotype threat) x 2 (regulatory focus) x 2 (role model) ANOVA yielded a significant 3-way interaction for performance, $\underline{F}(1, 91) = 4.50$, $\underline{p} <$ .04. When a positive role model was presented as predicted participants' performance

---

[29] Keller and Bless (2008) showed interaction effects of stereotype threat and regulatory focus on performance applying manipulations similar to the ones in the present thesis. Therefore, these conditions are interpreted as regulatory fit or nonfit conditions according to the Regulatory Fit from Stereotype Threat Assumption. However, they have not been referred to as such by Keller and Bless.

under a prevention focus was higher in the stereotype threat (regulatory fit) as compared to the no stereotype threat (regulatory nonfit) condition and participants under a promotion focus showed a higher performance in the no stereotype threat (regulatory fit) as compared to the stereotype threat (regulatory nonfit) condition. However, these differences were all non-significant, $\underline{t}$'s (91) = .58 and .14, $\underline{p}$'s > .10. When a negative role model was presented participants leadership performance under a prevention focus was significantly lower in the stereotype threat (regulatory fit) as compared to the no stereotype threat (regulatory nonfit) condition, $\underline{t}(91) = -2.33$, $\underline{p} <$ .02 (one-tailed). Further, participants under a promotion focus when a negative role model was given showed lower performance in the no stereotype threat (regulatory fit) as compared to the stereotype threat (regulatory nonfit) condition. However, this difference was not shown to be significant, $\underline{t} = -1.24$, $\underline{p} > .10$ (one-tailed; for means and standard deviation see Table 9).

Table 9

Number of Items Solved as a Function of Stereotype Threat, Situational Regulatory Focus and Role Model (Study 3)

| | Stereotype Threat | | | | | |
| | Threat | | | No Threat | | |
Role Model	M	(SD)	n	M	(SD)	n
Positive						
Prevention Focus	7.55	(1.37)	11	7.15	(1.68)	13
Promotion Focus	6.83	(1.64)	12	6.92	(1.89)	13
Negative						
Prevention Focus	6.42	(2.43)	12	7.93	(.83)	14
Promotion Focus	7.00	(1.21)	12	6.17	(1.75)	12

Note. Total number of items was 9.

Comparison with the control group. Although, the general pattern of performance on the test (see Figure 16) was in line with the results obtained for participants' leadership motivation as already shown previously, performance in the positive role model condition hardly differed for participants under regulatory fit as compared to participants under regulatory nonfit. Furthermore, participants in the control group showed a medium performance level compared to all other conditions. This pattern was reflected in the planned contrasts with the control group as none of them yielded a significant result, t's = -1.02 to 1.15, p's < .10.

Figure 16. Test performance as a function of regulatory fit and role model compared to the control group (CG) in Study 3.
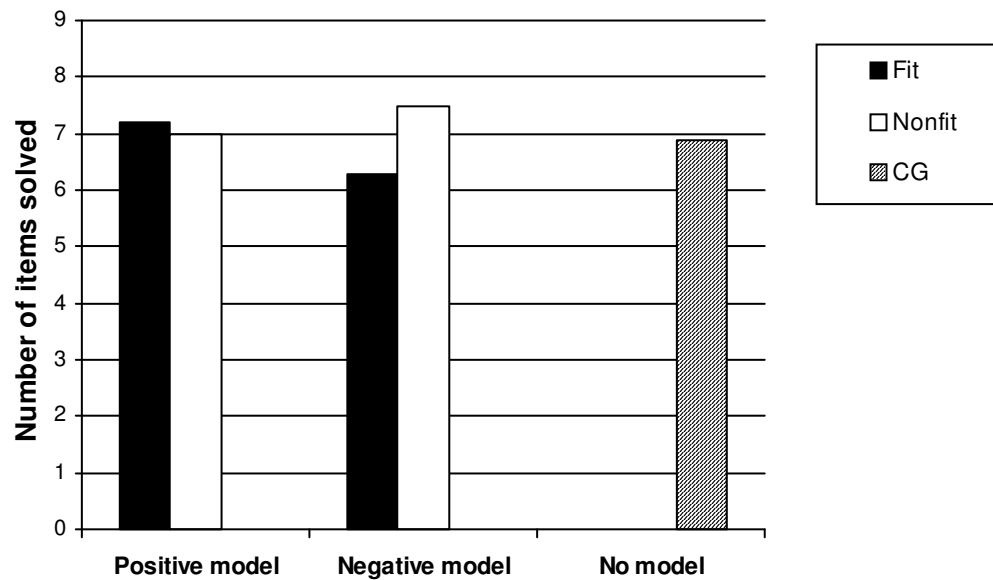
The pattern of the findings for participants' performance on the test provides some degree of support for the assumptions made in the hypothesis as it partially corresponds with the pattern of results for leadership motivation. However, most of the predicted contrasts were non-significant. Thus, the effects on performance were shown to be fairly weaker than those on motivation and hence yield no evidence for any aforementioned theoretical model.

Although the simple comparisons were not significant the general pattern of results suggests that if performance is assessed after a motivation measure that the effect of feeling right or wrong from regulatory fit on motivation might partially be transferred to performance. Specifically, given that all participants attempted at least eight of the nine test items suggests that the performance test in Study 3 was easy and

motivation and performance are thought to be linked on easy test items (cf. Atkinson, 1974; Keller, 2007; O'Brien & Crandall, 2003). Therefore, a mediational analysis was performed in order to test whether the effects of regulatory fit from stereotype threat on performance were mediated by leadership motivation.

Leadership motivation as a mediator. The same analytic procedure as in the previous mediational analyses was applied (cf. Muller et al., 2005). The Regulatory Focus x Stereotype Threat x Role Model interaction was a significant predictor of the number of solved items while controlling for the main effects and the two-way interactions, $\underline{B} = 0.35$, $\underline{t}(91) = 2.12$, $\underline{p} < .04$. As shown earlier in this chapter, the Regulatory Focus x Stereotype Threat x Role Model interaction significantly predicted leadership motivation, $\underline{B} = 0.13$, $\underline{t}(91) = 2.24$, $\underline{p} < .03$. However, leadership motivation did not predict the number of solved items while controlling for the manipulations and their interactions, $\underline{B} = 0.01$, $\underline{t}(90) = 0.04$, $\underline{p} > .10$. Hence, the proposed mediational path could not be established, and the assumption that regulatory fit from stereotype threat effects on leadership motivation would spill over to the performance measure could not be supported.

3   GENERAL DISCUSSION

The empirical evidence of stereotype threat effects on individuals' motivation up to date has shown a diverse picture. Some studies have shown that motivation has increased under stereotype threat (e.g., Nussbaum & Steele, 2007) whereas others have shown that it has decreased (e.g., Davies et al., 2002). It is argued here that stereotype threat induced regulatory fit effects might lead to differential effects of stereotype threat on motivation due to an individual's dominant regulatory focus. It is proposed in regulatory fit theory (Higgins, 2000) that the fit between a person's regulatory concerns and his or her goals or means of goal attainment creates a regulatory fit which leads to an increase in motivation and a feeling of rightness that further increases stimuli persuasiveness. At the same time a mismatch between a person's regulatory concerns and his or her goals or means of goal attainment is assumed to create a regulatory *nonfit* which leads to a decrease in motivation and a feeling of wrongness that further decreases stimuli persuasiveness.

In line with regulatory fit theory it was put forward here that when an individual's regulatory concerns or goals match those present under stereotype threat a regulatory fit will occur, whereas when the regulatory concerns or goals do not match those present under stereotype threat a regulatory nonfit will result. In particular, it was hypothesized that a regulatory fit will occur for individuals with primarily prevention concerns or goals when in stereotype threat conditions and for individuals with primarily promotion concerns or goals when in *no* stereotype threat conditions. In contrast, a regulatory *nonfit* was thought to occur for individuals with primarily prevention concerns or goals when in *no* stereotype threat conditions and for individuals with primarily promotion concerns or goals when in stereotype threat

conditions. A regulatory fit from stereotype threat should then, according to regulatory fit theory, lead to an increase in motivation and stimuli persuasiveness whereas a regulatory nonfit should lead to a decrease in motivation and stimuli persuasiveness.

The Regulatory Fit from Stereotype Threat Assumption was tested in regard to women's leadership aspirations. All three studies presented in this thesis have yielded general support for the assumption. An increase of women's leader role motivation under regulatory fit as compared to regulatory nonfit was shown in Studies 1 and 2 when regulatory fit was induced by a fit of participants' regulatory focus and stereotype threat conditions. Further, in Study 3 stereotype threat induced regulatory fit effects produced outcomes linked to the feeling of rightness, i.e., an increase of the persuasiveness of role models as stimuli on women's leadership motivation under regulatory fit and a decrease of the persuasiveness of role models on women's leadership motivation under regulatory nonfit was shown.

In sum, the results of all three studies provided evidence for the Regulatory Fit from Stereotype Threat Assumption. In particular, a clear picture was provided by the results for regulatory fit effects following the situational induced regulatory foci with leader role motivation as the dependent variable in Studies 1 and 2 and overall leadership motivation as the dependent variable in Study 3. Less clear and consistent, but still showing the general expected pattern, were the results obtained through rating scales that had previously been developed by other researchers, as the chronic regulatory focus and the general leadership motivation (i.e., BIP) measures. In addition, all three studies pointed towards a mediation of regulatory fit from stereotype threat by self-efficacy, although only in Study 3 a marginal significant effect was found. Furthermore, Studies 1 and 2 demonstrated that regulatory fit effects

on motivation are domain specific when induced by stereotype threat, i.e., regulatory fit effects were only found on leader role motivation but no effects were found for team role motivation. However, the domain specificity of stereotype threat induced regulatory fit effects was not supported in Study 3. Last, the findings in Study 3 supported the assumption that stereotype threat induced regulatory fit effects increased *feeling bad* (i.e., impression related concerns and feelings of pressure) while at the same time effects expected to follow the experience of *feeling right* were found.

Most controversial however, are the effects that were found for individual's test performance. The results in Studies 1 and 2 neither supported the Regulatory Fit from Stereotype Threat Assumption nor was the MERF model by Keller and Bless (2008) as an alternative explanation supported. Finally, Study 3 provided some evidence that the effects of regulatory fit from stereotype threat on motivation might spill over to a subsequent performance measure. However, no support for this assumption was provided by the subsequent mediational analysis.

3.1 Implications

As suggested by previous findings of stereotype threat effects on motivation (e.g., Davies et al., 2002; Nussbaum & Steele, 2007) the results obtained in this thesis demonstrate that those effects are not always consistent. In fact, it was shown in the first two studies that stereotype threat effects on motivation are moderated by regulatory focus. Since the direction of that moderation effect on motivation is opposite to that found for the moderation of stereotype threat effects on performance (Keller & Bless, 2008) it is further put forward here that effects of stereotype threat on motivation should be differentiated from those on performance.

Furthermore, it has been shown that regulatory fit effects can result in an increase of motivation in a specific domain for individuals who are negatively stereotyped for that domain. In particular, women's leadership motivation was increased under regulatory fit as opposed to regulatory nonfit. Thus, previous research on regulatory fit showing an increase in motivation (e.g., Förster et al., 1998; Freitas & Higgins, 2002; Lee & Hong, 2006; Wang & Lee, 2006) was confirmed. Moreover, it was shown that regulatory fit did not have an effect on motivation in general, but on motivation in a specific domain instead. In addition, the effect of regulatory fit on stimuli persuasiveness as shown in earlier studies was replicated with role models as stimuli. Concerning regulatory fit theory in general the studies presented in this thesis could show that a regulatory fit can be induced by yet another variable (i.e., stereotype threat) when matching a person's regulatory focus.

In particular, the presented research demonstrated that stereotype threat situations can elicit a regulatory fit when a person's predominant regulatory focus is a prevention focus and a regulatory nonfit when the dominant focus is a promotion focus. Conversely, it was demonstrated that in no stereotype threat situations regulatory fit effects occur when a person's predominant regulatory focus is a promotion focus and regulatory nonfit effects result when the predominant focus is a prevention focus.

Moreover, results of previous research on stereotype threat led to the assumption that stereotype threat might increase motivation when individuals' goals are in line with their motivational orientations and would decrease when not (Smith et al., 2007). Since regulatory fit effects are based upon the match of a person's regulatory orientation with his or her goal or means of goal attainment this assumption could be confirmed, that is, stereotype threat led to an increase in motivation when

prevention or promotion orientations were in line with the goal to disconfirm a negative stereotype or, respectively, to conform to a positive stereotype.

Furthermore, by applying the motivational framework of regulatory focus theory (Higgins, 1997, 1998) in the present context instead of achievement motivation theory (e.g., Elliot & Church, 1997) the research presented here has extended the scope of the motivational variable by dissolving the fixed connection between approach and positive outcomes as well as between avoidance and negative outcomes. In fact, Studies 1 and 2 show that participants do indeed show an approach behavior when confronted with a negative outcome and avoidance behavior when confronted with a positive outcome, that is, they are approaching a nonloss by trying to disconfirm the negative stereotype under stereotype threat and avoiding a nongain when trying to conform to the positive stereotype under no stereotype threat. Therefore, relying on regulatory focus theory and applying a different motivational framework than used in the studies by Smith et al. (2007; i.e., achievement motivation) was essential in order to obtain the results as shown in this thesis.

It has been shown in earlier work that there is a link between gender stereotypes and domain preferences of men and women (e.g., EOC, 2001; Jacobs & Eccles, 2000; Miller & Hayward, 2006). Concerning women's domain preferences this link has generally been confirmed by the studies in the present research. Making the stereotype about women's weak leadership abilities as compared to men's salient or removing the stereotype did have an effect on the subsequent leadership motivation of women. However, the effect of the stereotype depended on a person's regulatory orientation. Overall women preferred the stereotypical female domain (i.e., the team worker role) compared to the stereotypical male domain (i.e., the leader role) yet, when experiencing regulatory fit this difference vanished. Thus, in line with the data

on the sex segregation of occupations the notion that women and men tend to prefer occupations or domains for which the stereotypes are congruent to their own gender roles was reflected in the presented data. Accordingly, the link between gender stereotypes and women's domain preferences as shown in earlier research was replicated here. Nevertheless, this link was also shown to be altered as a result of experiencing regulatory fit from stereotype threat.

At this point I want to return to the initial question of this thesis: What makes women withdraw from stereotypically masculine occupations and why do some women aspire these careers? It has been demonstrated in Studies 1 and 2 that women do prefer an occupation less when it is stereotyped as masculine as opposed to when this stereotype is removed *and* they have a promotion focus. On the contrary, women's preference for a domain stereotyped as being masculine as opposed to when this stereotype is removed was shown to be higher when they have a prevention focus. Since leadership abilities are stereotypically perceived as being masculine (e.g., Eagly, Makhijani, & Klonsky, 1992) it stands to reason that the majority of women, who do not aspire a career as a leader, are predominantly promotion-focused. Furthermore, one would assume that those women who do aspire a leadership position are predominantly prevention-focused. However, this argument is not shared in the current thesis for the following reasons. Previous work suggests that the female gender role is associated with a prevention focus, whereas the male gender role is associated with a promotion focus (cf. Cross & Madson, 1997; Lee et al., 2000)[30]. Consequently, according to the argument above most women should pursue a

---

[30] The female gender-role was shown to be associated with an interdependent self-concept which is further associated with a prevention focus whereas the male gender role is associated with an independent self-concept which was further shown to be associated with a promotion focus (cf. Cross & Madson, 1997; Lee et al., 2000)

leadership career and a leadership career should be associated with the female gender role, both are not the case (cf. Eagly et al., 1992).

Furthermore, it was also shown in the present studies that even though women's preference for a masculine stereotyped domain (i.e., leadership) increases under regulatory fit conditions, it does not exceed their preference for a feminine stereotyped domain (i.e., team worker). Thus, even though women's leadership aspirations have been shown to increase under regulatory fit as opposed to regulatory nonfit conditions, it is not clear whether women who are experiencing regulatory fit would choose the leadership domain over another non-stereotyped domain. The present research demonstrated that motivation for a *particular* domain is stronger under regulatory fit as opposed to regulatory nonfit. Therefore, no claims can be made about the motivation for one domain in comparison to another. Given that the present study is therefore limited in external validity and no conclusions can be drawn for the sex segregation of occupations in general this issue will be taken up again when discussing the limitations of the current work.

All in all, as stated in the introduction section, many causes have been claimed for the sex segregation of occupations and only one of several points has been addressed in this research. Therefore, the current research cannot claim to propose a general solution for the sex segregation of occupations. However, even though the conclusions obtained in the present thesis concerning when and when not women's preferences for a stereotypically male domain will increase can surely not explain the full amount of sex segregation in occupations nor answer the question how it can be eliminated, this research among others has nonetheless contributed another piece towards answering these questions as a whole.

3.2   Limitations

As pointed out in the previous sections the interpretation of some of the results of the current studies have to be regarded with caution or cannot be interpreted at all. For example, the results on the performance measures between all three studies have been inconsistent and somewhat puzzling. It is not clear if participants in all three studies were convinced to take a performance test that is actually assessing leadership abilities. A mere practical problem was that there is no such measure to my knowledge, which could be administered as a paper and pencil version. Only in Study 3 the results on performance were in line with those on the motivational measure suggesting that performance when following a motivational measure might be influenced by regulatory fit. However, those results cannot be taken as a clear evidence since no mediation of regulatory fit effects on performance by motivation could be shown and participants' perception of the measure was not clear. Moreover, previous research demonstrating regulatory fit effects on task interest and enjoyability showed that those effects were unrelated to success on the very same task (Freitas & Higgins, 2002). Overall, no conclusions can be drawn from the present studies concerning the interplay of motivation and performance.

In all three studies the effects of stereotype threat induced regulatory fit met the prerequisites for being mediated by self-efficacy. Nonetheless, only Study 3 has shown a marginal significance of such an effect. These weak results are not that surprising when considering that self-efficacy was not presumed to be the *process* by which regulatory fit effects occur. Instead, regulatory fit effects on self-efficacy should be due to an overall increase of reactions and confidence in ones own judgments under regulatory fit. Further, it was thought that an increase of self-efficacy would in turn add to an increase in motivation and thus create a mediational path

between regulatory fit and motivation. A lack of statistical significance of this mediation might be due to the fact that the true processes underlying regulatory fit effects (e.g., heuristic processing; see Briley & Aaker, 2006) were stronger than and have overridden the mediational effect of self-efficacy. However, no final conclusion can be drawn on the basis of the present experiments.

The effect of feeling right from regulatory fit from stereotype threat on stimuli persuasiveness was demonstrated in Study 3 by showing an increase or decrease in participants' motivation following the presentation of a positive or negative role model. However, neither feeling right nor stimuli persuasiveness have been measured directly in Study 3. Stimuli persuasiveness was inferred by an increase of motivation following a positive role model and a decrease in motivation following a negative role model. Furthermore, the feeling of rightness was inferred by stimuli persuasiveness. Thus, the actual dependent variable relating to regulatory fit (i.e., feeling right) was two steps removed from the experimental measure (i.e., motivation). The critical reader might question the conclusion of a regulatory fit despite any direct evidence. Yet, when taking a look at previous research which has proposed an effect of feeling right from regulatory fit on stimuli persuasiveness, it is evident that this is not merely a problem of this particular study alone but of regulatory fit research in general (e.g., Briley & Aaker, 2006; Cesario et al., 2004; Lee & Aaker, 2004; Wang & Lee, 2006). In particular, in all of these studies the effect of feeling right has only been a theoretical assumption and not been measured. Closest to measuring the actual feeling of rightness was a study by Cesario et al. showing that the effect of regulatory fit was eliminated when participants were made aware of a possible feeling of rightness. Overall, the conclusion of an effect of feeling right should be regarded with caution for the present research as for regulatory fit research in general.

The limitations concerning the assumption of stimuli persuasiveness and the experience of a feeling of rightness raise two additional questions concerning the interpretation of the results from Study 3. First, it is not clear whether the presumed higher validity and persuasiveness of role models under conditions of regulatory fit as compared to nonfit is actually due to a feeling of rightness. Promotion-focused participants in no stereotype threat conditions are assumed to be concerned to proof the situational positive stereotype right whereas prevention-focused participants in stereotype threat conditions are assumed to be concerned to disproof the negative stereotype. In addition, the subsequent analyses showed heightened impression related concerns for both of these regulatory fit conditions when compared to the nonfit conditions. Previous research on stereotype threat has suggested that heightened impression related concerns under stereotype threat will lead to an assimilation to another in-group member, whereas a contrast effect will occur under no stereotype threat conditions (Marx et al., 2005). Consequently, the heightened concerns about one's group's image under conditions of regulatory fit might also have resulted in assimilation to the role models' behaviors under regulatory fit due to a feeling of closeness to another in-group member. Whereas under conditions of regulatory nonfit these concerns were not present, possibly resulting in the contrast from the role model (cf. Marx et al., 2005). Nonetheless, no differences in perceived similarity to the role model were found as a function of regulatory fit, $\underline{F}(1, 97) = 1.75$, $\underline{p} > .10$. Therefore, the explanation of enhanced closeness to the role model under conditions of regulatory fit as opposed to nonfit cannot be confirmed. Moreover, as regulatory fit effects were found for similar experimental manipulations in Studies 1 and 2, the assumption of a regulatory fit effect, that is, the feeling of rightness vs. wrongness, in Study 3 is likely to suggest itself.

The second question concerns the enhanced persuasiveness and validity of role models under conditions of regulatory fit compared to different regulatory focus conditions. Role models have shown to be associated with different regulatory foci in previous research. Prevention-focused individuals were shown to prefer and be more motivated by role models, which exemplified how to avoid failure (i.e., negative role models), than role models, which give examples how to obtain success (i.e., positive role models). In contrast, promotion-focused individuals preferred positive role models to negative role models and were more motivated by positive as opposed to negative role models (e.g., Lockwood et al., 2002; Lockwood, Marshall, & Sadler, 2005). Support for this assumption can be found in the results of Study 3 concerning promotion-focused participants, who felt more similar to the positive role model than to the negative role model. However, no further support for the association between regulatory focus and role model valence was found in the present study. That is not to say that individuals with a predominant regulatory focus do not prefer or are not motivated by role models who highlight their preferred strategies. However, given the present data and the fact that a regulatory fit or nonfit was activated *before* encountering the role model in the present study, participants differential reactions to positive and negative role models was most likely not determined by their predominant regulatory focus but by their experience of regulatory fit or nonfit.

The results for Studies 1 and 2 showed that stereotype threat induced regulatory fit effects only occurred for participants' leader role motivation but not for their team role motivation. Consequently, regulatory fit effects in the present studies only occurred for the domain for which the regulatory fit was induced. Those findings contradict the findings and assumptions made by other authors stating that the value from regulatory fit will transfer to objects which are independent of the fit process

itself (i.e., Higgins et al., 2003). Higgins et al. induced regulatory fit by a fit as opposed to a nonfit between their regulatory goals (i.e., hopes and aspirations for a promotion focus or duties and obligations for a prevention focus) and the means to reach those goals (i.e., eagerness related means for a promotion focus or vigilant related means for a prevention focus). Following the regulatory fit manipulations participants were asked to rate the good-naturedness of dogs on photographs. The results showed that participants who had experienced a regulatory fit as opposed to those who had experienced regulatory nonfit provided higher ratings for the good-naturedness of the dogs. Higgins et al. conclude that an experience of feeling right from regulatory fit spills over to subsequent tasks and thus enhances their evaluations *even if* the task is unrelated to the fit process itself.

Therefore, it might be argued that the effects shown in the present studies are no regulatory fit effects as they do not apply to motivation in general, that is, leader *and* team role motivation. On the other hand, when looking closely at the studies by Higgins et al. (2003) it was shown that an effect of feeling right spilled over to a subsequent evaluation (i.e., good-naturedness of dogs). The very same effect was found in Study 3 of the present research. The effect of feeling right spilled over to subsequent evaluations (i.e., the persuasiveness of negative and positive role models). Possibly the domain specificity of regulatory fit effects depends on whether *motivation* or the *feeling of rightness* following a regulatory fit are examined. Studies 1 and 2 examine stereotype threat induced regulatory fit effects on motivation. The obtained results suggest that it depends on the way a regulatory fit has been induced whether it is suited to raise a person's motivation in general or just motivation for a particular domain. For the present stereotype threat induced regulatory fit, for example, the fit occurs because the regulatory concerns match the concerns raised by

the stereotype (i.e., the concern of disconfirming the negative stereotype when prevention-focused or the concern to conform to the positive stereotype when promotion-focused). Given that concerns raised by the stereotype relate to a particular domain (i.e., leadership) it seems reasonable that an individual's motivation will only be affected for that domain. Moreover, in Study 3 stereotype threat induced regulatory fit effects on the feeling of rightness and a subsequent stimuli's persuasiveness are examined. The following analyses aiming to show that motivation is domain specific, however, failed to show the very same effect in Study 3. Thus, it is suggested that a) stereotype threat induced regulatory fit effects on motivation present a case of regulatory fit for which effects will be domain specific and b) the independence of the fit process itself and its effect on subsequent evaluation tasks only holds for regulatory fit effects concerning the feeling of rightness and it's presumed consequences (e.g., increase of evaluations and persuasiveness of stimuli). However, it goes without saying that future research is needed to test these assumptions.

It was shown in Studies 1 and 2 that leader role motivation in the role play was enhanced by stereotype threat induced regulatory fit effects. It is not clear, however, whether an increase in leader role motivation might have been due to the particular experimental paradigm. Participants were exclusively given the choice between a leader and a team worker role. It is not known whether participants' leader role motivation would have been different, if they had been given other roles than the team role to choose instead or other tasks than the role play to choose from. However, an increase on the general leadership motivation measure (i.e., BIP) was also shown from stereotype threat induced regulatory fit effects in Study 2, suggesting that the effect on the specific leader role motivation was most likely not merely due to a limited set of options.

Further limitations of the presented studies concern their external validity. The samples in all three studies were limited to female university students. Moreover, one of the main dependent variables was the motivation for a role in an alleged role play, which cannot be taken as equivalent to making a real life choice between occupational domains. When choosing between different occupational domains, individuals usually have a much wider range of options to choose from. In addition, they will most likely take a longer temporal perspective into account. Moreover, stereotype threat effects were only induced for one negatively stereotyped group (i.e., women) and one domain (i.e., leadership) in all three studies. Thus, it would not be appropriate to assume a generalization of those findings. All in all, the general implications inferred from the results of the present studies are not without reason but have to be regarded with caution.

3.3   Future Directions

Future research should address some of the questions brought up in the limitation section to obtain clarity about the aforementioned problems with a few of the dependent measures and to ensure the generalization or external validity of the findings.

Among the dependent variables the performance measure contributed the least, if anything, to answering the research questions. In order to further investigate the probably differential effects of stereotype threat induced regulatory fit effects on performance and motivation different performance measures than those used in the current studies need to be applied. In particular, it might proof fruitful to focus on performance domains that can be measured more objectively than leadership abilities (e.g., mathematics). Therefore, it is suggested to replicate the present studies but to change the domain in question. Such studies should provide more insight into the role

of performance and the interrelation between performance and motivation measures under stereotype threat induced regulatory fit.

Another dependent variable which did not provide clear answers was the alleged stimuli persuasiveness through feeling right by regulatory fit. Future studies should explicitly assess participants' perceived stimuli persuasiveness to ensure that the variation in the motivational measure is indeed due to the stimuli. In addition, other dependent measures that are presumed to result from feeling right through regulatory fit (e.g., greater recall, systematic processing; Aaker & Lee, 2001; Evans & Petty, 2003) should be assessed in order to confirm the feeling of rightness. Furthermore, in order to claim an effect of the feeling of rightness through regulatory fit a general measure of the *feeling of rightness* needs to be developed.

In order to enhance the external validity, of the current studies the assessment of leader or team worker role motivation should be extended to include more options in future studies. In particular, options to choose other roles and other activities than the role play should be given. Such studies would provide clarity whether the effects of regulatory fit on motivation and stimuli persuasiveness would also occur when individuals are not forced to stay in the situation as this is mostly also not the case for individuals' occupational choices. As pointed out at the very beginning of the introduction, surely most women are not in a situation as, for example, Queen Victoria, who stated that "there are times which *force* one to take interest" [in these masculine occupations].

Also future studies should be conducted to enhance the generalization of the obtained findings. The regulatory fit from stereotype threat assumption, for example, was supported in the present research while inducing the very same manipulations in all three studies. To generalize these findings it is necessary to conduct studies

applying stereotype threat and regulatory focus manipulations that differ from the ones used in this research. Furthermore, studies concerning other stereotyped groups and domains than women and leadership abilities should be considered in order to generalize the findings to stereotype threat as a whole. Those studies could help to show whether stereotype threat can generally induce a regulatory fit or whether the obtained findings only hold for the particular manipulations applied in the present studies.

Moreover, the external validity of the conducted experiments could be enhanced by replicating the present finding with participants from other than student populations and women. In addition, replacing the role play scenario used in the present studies by scenarios which are closer to real life would yield further clarification whether the obtained findings could be transferred into the context of occupational choice.

3.4   Conclusions

In sum, the research presented here has yielded general support for the Regulatory Fit from Stereotype Threat Assumption. Furthermore, it is suggested that the previously differential findings of stereotype threat effects on motivational measures can be explained by such a regulatory fit from stereotype threat effect. Moreover, when compared to previous findings on performance, the findings obtained here point towards differential effects of stereotype threat on motivation and performance and show that more research is needed for a full understanding of the interaction of these effects.

The results of all of the present studies suggested that regulatory fit from stereotype threat effects are mediated by self-efficacy. However, no mediation could

be established by conventional levels of statistical significance. Moreover, regulatory fit when induced through stereotype threat appeared to have domain specific effects on motivation but, consistent with prior findings (e.g., Higgins et al., 2003), no such domain specificity was found for the effect of feeling right. Furthermore, it was shown that feeling right from regulatory fit does not equal feeling good, thus supporting previous research demonstrating the independence of regulatory fit effects from mood (Cesario et al., 2004). Although not the ultimate goal of the current work, the question of the sex segregation of occupations could not be answered here due to a lack of external validity. Many more studies will be needed to gradually address the complex nature of this question. Overall, most of the limitations in the current work concern its external and internal validity, for example, the generalization of the results to applied settings and other domains or stereotypes as well as a valid measurement of feeling right and stimuli persuasiveness.

Taken together, the present work established that regulatory fit effects can occur through stereotype threat. However, future research needs to address the issues of external and internal validity and establish when and how motivation and performance interact under stereotype threat.

4   REFERENCES

Aaker, J. L., & Lee, A. Y. (2001). "I" seek pleasures and "We" avoid pains: The role of self-regulatory goals in information processing and persuasion. *Journal of Consumer Research, 28* (1)*,* 33-49.

Aaker, J. L., & Lee, A. Y. (2006). Understanding regulatory fit. *Journal of Marketing Research, 43*(1)*,* 15-19.

Aiken, L. S., & West, S. G. (1991). *Multiple regression: Testing and interpreting interactions.* Newbury Park, CA: Sage.

Amthauer, R., Brocke, B., Liepmann, D., & Beauducel, A. (1999). *Intelligenz-Struktur-Test 2000. I-S-T 2000* [Intelligence-Structure- Test 2000. I-S-T 2000]. Göttingen: Hogrefe.

Aronson, J., Fried, C., & Good, C. (2002). Reducing the effects of stereotype threat on African American college students by shaping theories of intelligence. *Journal of Experimental Social Psychology. 38* (2), 113-125.

Aronson, J., Lustina, M. J., Good, C., Keough, K. Steele, C. M., & Brown, J. (1999). When white men can't do math: Necessary and sufficient factors in stereotype threat. *Journal of Experimental Social Psychology, 35* (1), 29-46.

Aronson, J., & Inzlicht, M. (2004). The ups and downs of attributional ambiguity: Stereotype vulnerability and the academic self-knowledge of African American college students. *Psychological Science, 15* (12)*,* 829-836.

Atkinson, J. W. (1957). Motivational determinants of risk-taking behavior. *Psychological Review, 64* (6), 359-372.

Atkinson, J. W. (1974). Strength of motivation and efficiency of performance. In J. W. Atkinson & J. O. Raynor (Eds.), *Motivation and achievement* (pp. 193–218). Washington, DC: Winston.

Avnet, T., & Higgins, E.T. (2006a). How regulatory fit affects value in consumer choices and opinions. *Journal of Marketing Research, 43* (1)*,* 1-10.

Avnet, T., & Higgins, E.T. (2006b). Response to comments on "How regulatory fit affects value in consumer choices and opinions". *Journal of Marketing Research, 43* (1)*,* 24-27.

Bandura, A. (1977). Self-efficacy: Toward a unifying theory of behavioral change. *Psychological Review*, *84* (2), 191–215.

Bandura, A. (1982). Self-efficacy mechanism in human agency. *American Psychologist, 37* (2), 122-147.

Bandura, A. (1997). *Self-efficacy: The exercise of control.* New York: Freeman.

Bandura, A. (2002). Growing primacy of human agency in adaptation and change in the electronic era. *European Psychologist, 7* (1)*,* 2–16.

Bandura, A., & Locke, E. (2003). Negative self-efficacy and goal effects revisited. *Journal of Applied Psychology, 88* (1), 87-99.

Blanton, H., Crocker, J., & Miller, D. T. (2000). The effects of in-group versus out-group social comparison on self-esteem in the context of a negative stereotype. *Journal of Experimental Social Psychology, 36* (5), 519-530.

Blanton, H., Christie, C., & Dye, M. (2002). Social identity versus reference frame comparisons: The moderating role of stereotype endorsement. *Journal of Experimental Social Psychology, 38* (3), 253-267.

Blascovich, J., Spencer, S., Quinn, D., & Steele, C. (2001). African Americans and high blood pressure: The role of stereotype threat. *Psychological Science, 12* (3)*,* 225-229.

Bless, H., & Forgas, J. P. (2000). The message within: Toward a social psychology of subjective experiences. In H. Bless & J. P. Forgas (Eds.), *The message within: The role of subjective experience in social cognition and behavior* (pp. 372-392). New York: Psychology Press.

Bortz, J., & Döring, N. (2003). Forschungsmethoden und Evaluation (3rd edition). Berlin: Springer.

Brewer, M. B., & Weber, J. G. (1994). Self-evaluation effects of interpersonal versus group social comparison. *Journal of Personality and Social Psychology, 66* (2), 268–275.

Briley, D. A., & Aaker, J. L. (2006). When Does Culture Matter? Effects of Personal Knowledge on the Correction of Culture-Based Judgments. *Journal of Marketing Research, 43* (3), 395-408.

Brown, J. D., Novick, N. J., Lord, K. A., & Richards, J. M. (1992). When Gulliver travels: Social context, psychological closeness, and self-appraisals. *Journal of Personality and Social Psychology, 62 (*5), 717-727.

Brown, R. P., & Josephs, R. A. (1999). A burden of proof: Stereotype relevance and gender differences in math performance. *Journal of Personality and Social Psychology, 76* (2)*, 246-257.

Cadinu, M., Maass, A., Frigerio, S., Impagliazzo, L., & Latinotti, S. (2003). Stereotype threat: The effect of expectancy on performance. *European Journal of Social Psychology, 33* (2)*, 267-285.

Camacho, C. J., Higgins, E. T., & Luger, L. (2003). Moral value transfer from regulatory fit: What feels right is right and what feels wrong is wrong. *Journal of Personality and Social Psychology, 84* (3), 498-510.

Ceijka, M. A., & Eagly, A. H. (1999). Gender-stereotypic images of occupations correspond to the sex segregation of employment. *Personality and Social Psychology Bulletin, 25* (4)*,* 413-423.

Cesario, J., Grant, H., & Higgins, E.T. (2004). Regulatory fit and persuasion: Transfer from "Feeling Right". *Journal of Personality and Social Psychology, 86* (3)*,* 388-404.

Crocker, J., & Major, B. (1989). Social stigma and self-esteem: The self-protective properties of stigma. *Psychological Review, 96* (4)**,** 608–630.

Croizet, J.-C., & Claire, T. (1998). Extending the concept of stereotype and threat to social class: The intellectual underperformance of students from low socioeconomic backgrounds. *Personality and Social Psychology Bulletin, 24* (6), 588-594.

Cross, S. E., & Madson, L. (1997). Models of the self: Self-construal and gender. *Psychological Bulletin**, 122* (1), 5-37.

Crowe, E., & Higgins, E. T. (1997). Regulatory focus and strategic inclinations: Promotion and prevention in decision-making. *Organizational Behavior and Human Decision Processes, 69* (2), 117-132.

Davies, P. G., Spencer, S. J., Quinn, D. M., & Gerhardstein, R. (2002). Consuming images: How television commercials that elicit stereotype threat can restrain women academically and professionally. *Personality and Social Psychology Bulletin, 28* (12)*,* 1615-1628.

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, 88* (2), 276-287.

Diekman, A. B., & Eagly, A. H. (2000). Stereotypes as dynamic constructs: Women and men of the past, present, and future. *Personality and Social Psychology Bulletin, 26* (10), 1171-1188.

Eagly, A. H. (1987). *Sex differences in social behavior: A social role interpretation.* Hillsdale: NJ: Erlbaum.

Eagly, A. H., Makhijani, M. G., & Klonsky, B. G. (1992). Gender and the evaluation of leaders: A meta-analysis. *Psychological Bulletin, 111* (1), 3-22.

Eagly, A. H., Wood, W., & Diekman, A. (2000). Social role theory of sex differences and similarities: A current appraisal. In T. Eckes & H. M. Trautner (Eds.), *The developmental social psychology of gender* (pp. 123-174). Mahwah, NJ: Erlbaum.

Eccles, J. S. (1994). Understanding women's educational and occupational choices. *Psychology of Women Quarterly, 18* (4)*,* 585-609.

Eccles, J. S., Adler, T. F., Futterman, R.,Goff, S. B., Kaczala, C. M., Meece, J. L., & Midgley, C. (1983). Expectancies, values, and academic behaviors. In J. T. Spence (Ed.), *Achievement and achievement motivation* (pp. 75-146). San Francisco, CA: W. H. Freeman.

Ehrlinger, J., & Dunning, D. (2003). How chronic self-views influence (and potentially mislead) estimates of performance. *Journal of Personality and Social Psychology, 84* (1), 50-17.

Elliot, A. J., & Church, M. A. (1997). A hierarchical model of approach and avoidance achievement motivation. *Journal of Personality and Social Psychology, 72* (1), 218-232.

European Commission (2007). *Report on equality between women and men*. Luxembourg: Office of the European Communities.

European Industrial Relations Observatory [EIRO] (2000). *Equal opportunities, collective bargaining and the European employment strategy.* Retrieved August, 2007, from

http://www.eurofound.europa.eu/eiro/2000/05/study/tn0005402s.html.

Equal Opportunities Commission [EOC] (2001). *Young people and sex stereotyping.* Manchester, United Kingdom: Equal Opportunities Commission.

Evans, L. M., & Petty, R. E. (2003). Self-guide framing and persuasion: Responsibly increasing message processing to ideal levels. *Personality and Social Psychology Bulletin, 29* (3), 313-324.

Festinger, L. (1954). A theory of social comparison processes. *Human Relations, 7,* 117–140.

Förster, J., Higgins, E. T., & Idson, L. C. (1998). Approach and avoidance strength as a function of regulatory focus: Revisiting the "goal looms larger" effect. *Journal of Personality and Social Psychology, 75* (5), 1115-1131.

Förster, J., Grant, H., Idson, L. C., & Higgins, E. T. (2001). Success/failure feedback, expectancies, and approach/avoidance motivation: How regulatory focus moderates classic relations. *Journal of Experimental Social Psychology, 37* (3), 253-260.

Förster, J., Higgins, E. T., & Bianco, A. T. (2003). Speed/accuracy decisions in task performance: Built-in trade-off or separate strategic concerns? *Organizational Behavior and Human Decision Processes, 90* (1), 148-164.

Freitas, A. L., & Higgins, E.T. (2002). Enjoying goal-directed action: The role of regulatory fit. *Psychological Science, 13 (*1)*,* 1-6.

Freitas, A. L, Liberman, N., Higgins, E. T. (2002). Regulatory fit and resisting temptation during goal pursuit. *Journal of Experimental Social Psychology, 38* (3), 291-298.

Friedman, R. S, & Förster, J. (2001). The effects of promotion and prevention cues on creativity. *Journal of Personality and Social Psychology, 81* (6), 1001-1013.

Görzig, A., Keller, J., & Bless, H. (2005). *Need for Cognition als kritische Randbedingung der Wirkung von Ease of Retrieval auf Testleistungen. [Need for cognition as a critical boundary condition for effects of ease of retrieval on performance.]* Poster presented at the 10. Tagung der Fachgruppe Sozialpsychologie [10th Special Interest Group Social Psychology], Jena, Germany.

Hackett, G., & Betz, N. E. (1981). A self-efficacy approach to the career development of women. *Journal of Vocational Behavior, 18* (3), 326-339.

Higgins, E. T. (1997). Beyond pleasure and pain. *American Psychologist, 52* (12), 1280-1300.

Higgins, E. T. (1998). Promotion and prevention: Regulatory focus as a motivational principle. In M.P. Zanna (Ed.), *Advances in experimental social psychology* (Vol. 30, pp. 1-46). San Diego, CA: Academic Press.

Higgins, E. T. (2000). Making a Good Decision: Value from fit. *American Psychologist, 55* (11), 1217-1230.

Higgins, E. T. (2006). How regulatory fit creates value. In D. De Cremer, M. Zeelenberg, & J. K. Murnighan (Eds.), *Social psychology and economics* (pp. 79-94). New York: Guilford Press.

Higgins, E. T., Roney, C., Crowe, E., & Hymes, C. (1994). Ideals versus ought predilections for approach and avoidance: Distinct self-regulatory systems. *Journal of Personality and Social Psychology, 66*, 276-286.

Higgins, E. T., Shah, J., & Friedman, R. (1997). Emotional responses to goal attainment: Strength of regulatory focus as moderator. *Journal of Personality and Social Psychology, 72* (3), 515-525.

Higgins, E. T., Grant, H., & Shah, J. (1999). Self-regulation and quality of life: Emotional and non-emotional life experiences. In D. Kahneman, E. Diener, and N. Schwarz (Eds.), *Well-being: The foundations of hedonic psychology* (pp. 244-266). New York: Russell Sage Foundation.

Higgins, E. T., Friedman, R. S., Harlow, R. E., Idson, L.C., Ayduk, O. N., & Taylor, A. (2001). Achievement orientations from subjective histories of success: Promotion pride versus prevention pride. *European Journal Social Psychology, 31* (1), 3-23.

Higgins, E. T., Idson, L. C., Freitas, A.L., Spiegel, S., & Molden, D. C. (2003). Transfer of value from fit. *Journal of Personality and Social Psychology, 84* (6), 1140-1153.

Higgins, E. T., & Spiegel, S. (2004). Promotion and prevention strategies for self-regulation: A motivated cognition perspective. In Roy F. Baumeister & Kathleen D. Vohs (Eds.), *Handbook of self-regulation: Research, theory, and applications* (pp. 171-187). New York: Guilford Press.

Hill, K. T., & Wigfield, and A. (1984) .Test anxiety: A major educational problem and what can be done about it. *Elementary School Journal, 85* (1), 105-126.

Hoppenstedt (2005). *Die Frauen holen auf - weibliche Top-Manager sind selten, aber ihr Anteil steigt seit Jahren kontinuierlich*. Retrieved August, 2006, from http://www.hoppenstedt.de/0503/archiv2005/FI-FIM-05-1-PI-E.rtf.

Hossiep, R., & Paschen, M. (2003). Bochumer Inventar zur berufsbezogenen Persönlichkeitsbeschreibung - BIP (2nd edition). Göttingen: Hogrefe.

Idson, L. C., & Higgins, E. T. (2000). How current feedback and chronic effectiveness influence motivation: Everything to gain versus everything to lose. *European Journal of Social Psychology, 30* (4), 583-592.

Idson, L. C., Liberman, N., Higgins, E. T. (2000). Distinguishing gains from nonlosses and losses from nongains: A regulatory focus perspective on hedonic intensity. *Journal of Experimental Social Psychology, 36* (3), 252-274.

Idson, L. C., Liberman, N., Higgins, E. T. (2004). Imagining how you'd feel: The role of motivational experiences from regulatory fit. *Personality and Social Psychology Bulletin, 30* (7), 926-937.

Jacobs, J. E., & Eccles, J. S. (2000). Parents, task values, and real-life achievement-related choices. In C. Sansone & J. M. Harackiewicz (Eds.), *Intrinsic and extrinsic motivation: The search for optimal motivation and performance* (pp. 405-439). San Diego, CA, US: Academic Press.

Johns, M., Schmader, T., & Martens, A. (2005). Knowing is half the battle: Teaching stereotype threat as a means of improving women's math performance. *Psychological Science, 16* (3), 175-179.

Keller, J. (2002). Blatant stereotype threat and women's math performance: Self-handicapping as a strategic means to cope with obtrusive negative performance situations. *Sex Roles, 47* (3-4)*,* 193-198.

Keller, J. (2004). *The Assessment of achievement–related regulatory concerns: Development and validation of a new measure assessing a chronic promotion and prevention focus.* Unpublished raw data. University of Mannheim.

Keller, J. (2007). Stereotype threat in classroom settings: The interactive effect of domain identification, task difficulty and stereotype threat on female students' math performance. *British Journal of Educational Psychology, 77,* 323-338.

Keller, J., & Dauenheimer, D. (2003). Stereotype threat in the classroom: Dejection mediates the disrupting threat effect on women's math performance. *Personality and Social Psychology Bulletin, 29* (3)*,* 371-381.

Keller, J., & Bless, H. (2008). When positive and negative expectancies disrupt performance: Regulatory focus as a catalyst*. European Journal of Social Psychology, 38* (2), 187-212.

Koenig, A. M., & Eagly, A. H. (2005). Stereotype threat in men on a test of social sensitivity. *Sex Roles, 52* (7-8), 489-496.

Konrad, A. M., Ritchie, J. E., Lieb, P., & Corrigal, E. (2000). Sex differences and similarities in job attribute preferences: A meta-analyses. *Psychological Bulletin, 126* (4)*,* 593-641.

Kray, L. J., Thompson, L., & Galinsky, A. (2001). Battle of the sexes: Gender stereotype confirmation and reactance in negotiations. *Journal of Personality and Social Psychology, 80* (6)*,* 942-958.

Lee, A. Y, Aaker, J. L, Gardner, W. L. (2000). The pleasures and pains of distinct self-construals: The role of interdependence in regulatory focus. *Journal of Personality and Social Psychology, 78* (6), 1122-1134.

Lee, A. Y., & Aaker, J. (2004). Bringing the frame into focus: The influence of regulatory fit on processing fluency and persuasion. *Journal of Personality and Social Psychology, 86 (2)*, 205-218.

Lee, A. Y., & Hong, J. (2006). *The effects of regulatory fit on self-regulation.* Paper presented at the Midwestern Psychological Association 78th Annual Meeting, Chicago, IL, USA.

Levy, B. (1996). Improving memory in old age through implicit self-stereotyping. *Journal of Personality and Social Psychology, 71 (6),* 1092-1107.

Leyens, J.-P., Désert, M., Croizet, J.-C., & Darcis, C. (2000). Stereotype threat: Are lower status and history of stigmatization preconditions of stereotype threat? *Personality and Social Psychology Bulletin, 26* (10), 1189-1199.

Locke, E. A., & Latham, G. P. (1990). *A theory of goal setting and task performance.* Englewood Cliffs, NJ: Prentice-Hall.

Lockwood, P (2002). Could it happen to you? Predicting the impact of downward comparisons on the self. *Journal of Personality and Social Psychology, 82 (3),* 343-358.

Lockwood, P., & Kunda, Z. (1997). Superstars and me: Predicting the impact of role models on the self. *Journal of Personality and Social Psychology, 73* (1): 93-103.

Lockwood, P., Jordan, C. H., & Kunda, Z. (2002). Motivation by positive or negative role models: regulatory Focus determines who will best inspire us. *Journal of Personality and Social Psychology, 83 (4),* 854-864.

Lockwood, P., Marshall, T. C., & Sadler, P. (2005). Promoting Success or preventing failure: Cultural differences in motivation by positive or negative role models. *Personality and Social Psychology Bulletin, 31* (3), 379-392.

Maas, A., & Cadinu, M. (2003). Stereotype threat: When minority members underperform. *European Journal of Social Psychology, 14, 243-275.*

Major, B., & Schmader, T. (1998). Coping with stigma through psychological disengagement. In J. K. Swim & C. Stangor (Eds.), *Prejudice: The target's perspective* (pp. 219-241). San Diego, CA, US: Academic Press.

Major, B., Spencer, S., Schmader, T., Wolfe, C., & Crocker, J. (1998). Coping with negative stereotypes about intellectual performance: The role of psychological disengagement. *Personality and Social Psychology Bulletin, 24*(1), 34-50.

Marx, D. M., & Roman, J. S. (2002). Female role models: Protecting women's math test performance. *Personality and Social Psychology Bulletin, 28* (9), 1183-1193.

Marx, D. M., Stapel, D. A., & Muller, D. (2005). We Can Do It: The Interplay of Construal Orientation and Social Comparisons Under Threat. *Journal of Personality and Social Psychology, 88* (3), 432-446.

Marx, D. M., & Stapel, D. A. (2006a). It's all in the timing: Measuring emotional reactions to stereotype threat before and after taking a test. *European Journal of Social Psychology, 36*(5), 687-698.

Marx, D. M., & Stapel, D. A. (2006b). Distinguishing stereotype threat from priming effects: On the role of the social self and threat-based concerns. *Journal of Personality and Social Psychology, 91* (2), 243-254.

Matzeder, M. E., & Krieshok, T. S. (1998). Career self-efficacy and the prediction of work and home role salience. *Journal of Career Assessment, 3* (3), 331-340.

McIntyre, R. B., Paulson, R. M., & Lord, C G. (2003). Alleviating women's mathematics stereotype threat through salience of group achievements. *Journal of Experimental Social Psychology, 39* (1), 83-90.

McIntyre, R. B., Lord, C. G., Gresky, D. M., Ten Eyck, L. L., Frye, G . D. J., & Bond, C. F. (2005). A social impact trend in the effects of role models on alleviating women's mathematics stereotype threat. *Current Research in Social Psychology, 10* (9), 116-136.

Miller, L. R., & Budd, J. (1999). The development of occupational sex-role stereotypes, occupational preferences and academic subject preferences in children at ages 8, 12 and 16. *Educational Psychology, 19,* (1), 17-35.

Miller, L., & Hayward, R. (2006). New jobs, old occupational stereotypes: gender and jobs in the new economy. *Journal of Education and Work, 19* (1), 67-93.

Muller, D., Judd, C. M., & Yzerbyt, V. Y. (2005). When moderation is meditated and when mediation is moderated. *Journal of Personality and Social Psychology, 89* (6), 852-863.

Multon, K. D., Brown, S. D., & Lent, R. W. (1991). Relation of self-efficacy beliefs to academic outcomes: A meta-analytic investigation. *Journal of Counseling Psychology, 38* (1)*,* 30–38.

Mussweiler, T. (2003). Comparison processes in social judgment: Mechanisms and consequences. *Psychological Review, 110* (3)**,** 472–489.

Nauta, M. M., & Kokaly, M. L. (2001). Assessing role model influences on students' academic and vocational decisions. *Journal of Career Assessment, 9* (1), 81-99.

Nussbaum, A. D, & Steele, C. M. (2007). Situational disengagement and persistence in the face of adversity. *Journal of Experimental Social Psychology, 43* (1), 127-134.

O'Brien, L., & Crandall, C. S. (2003). Stereotype threat and arousal: Effects on women's math performance. *Personality and Social Psychology Bulletin, 29* (6), 782-789.

Osborne, J. W. (1995). Academics, self-esteem, and race: A Look at the underlying assumptions of the disidentification hypothesis. *Personality and Social Psychology Bulletin, 21* (5), 449-455.

Osborne, J. W. (2001). Testing stereotype threat: Does anxiety explain race and sex differences in achievement? *Contemporary Educational Psychology, 26* (3), 291-310.

Oswald, D. L., & Harvey, R. D. (2001). Hostile environments, stereotype threat, and math performance among undergraduate women. *Current Psychology: Developmental, Learning, Personality, Social, 19* (4), 338-356.

Pennington, G. L., & Roese, N. J. (2003). Regulatory focus and temporal distance. *Journal of Experimental Social Psychology, 39* (6), 563-576.

Petty, R. E., & Cacioppo, J. T. (1986). The elaboration likelihood model of persuasion. In L. Berkovitz (Ed.), *Advances in Experimental Social Psychology* (Vol. 19, pp. 123-205). New York: Academic Press.

Pronin, E., Steele, C. M, & Ross, L. (2004). Identity bifurcation in response to stereotype threat: Women and mathematics. *Journal of Experimental Social Psychology, 40* (2), 152-168.

Reber, R., Schwarz, N., & Winkielman, P. (2004). Processing Fluency and Aesthetic Pleasure: Is Beauty in the Perceiver's Processing Experience? *Personality and Social Psychology Review,8* (4), 364-382.

Roese, N. J, Hur, T., & Pennington, G. L. (1999). Counterfactual thinking and regulatory focus: Implications for action versus inaction and sufficiency versus necessity. *Journal of Personality and Social Psychology, 77* (6), 1109-1120.

Rosenthal, H. E., & Crisp, R. J. (2006). Reducing stereotype threat by blurring intergroup boundaries. *Personality and Social Psychology Bulletin. 32* (4), 501-511.

Schein, V.E., Mueller, R., Lituchy, T., & Liu, J. (1996). Think manager--think male: A global phenomenon? *Journal of Organizational Behavior, 17 (1),* 33-41.

Schmader, T. (2002). Gender identification moderates stereotype threat effects on women's math performance. *Journal of Experimental Social Psychology, 38* (2), 194-201.

Schmader, T., & Johns, M. (2003). Converging evidence that stereotype threat reduces working memory capacity. *Journal of Personality and Social Psychology, 3,* 440-452.

Schneider, D. J. (2004). The psychology of stereotyping. New York: Guilford Press.

Schwarz, N. (2006). Feelings, fit, and funny effects: A situated cognition perspective. *Journal of Marketing Research, 43* (1)*,* 20-23.

Schwarz, N., & Bless, H. (2007). Mental construal processes: The inclusion/exclusion model. In D. A. Stapel & J. Suls (Eds.), *Assimilation and contrast in social psychology* (pp. 119-141). Philadelphia, PA: Psychology Press.

Schwarzer, R. (1994). Optimistische Kompetenzerwartung: Zur Erfassung einer personellen Bewältigungsressource. *Diagnostica, 40 (2)*, 105-123.

Seibt, B., & Förster, J. (2004). Stereotype threat and performance: How self-stereotypes influence processing by inducing regulatory foci. *Journal of Personality and Social Psychology, 87* (1), 38-56.

Sekaquaptewa, D., & Thompson, M. (2003). Solo status, stereotype threat, and performance expectancies: Their effect on women's performance. *Journal of Experimental Social Psychology, 39,* 68-74.

Shah, J., & Higgins, E. T. (1997). Expectancy x value effects: Regulatory focus as a determinant of magnitude and direction. *Journal of Personality and Social Psychology, 73* (3), 447-458.

Shah, J., Higgins, E. T., Friedman, R. S. (1998). Performance incentives and means: How regulatory focus influences goal attainment. *Journal of Personality and Social Psychology, 74* (2), 285-293.

Shapiro, J. R., & Neuberg, S. L. (2007). From stereotype threat to stereotype threats: Implications of a multi-threat framework for causes, moderators, mediators, consequences, and interventions. *Personality and Social Psychology Review, 11* (2), 107-130.

Smith, J. (2004). Understanding the process of stereotype threat: A review of mediational variables and new performance goal directions. *Educational Psychology Review, 16* (3), 177-206.

Smith, J. L, Sansone, C., & White, P. H. (2007). The stereotyped task engagement process: The role of interest and achievement motivation. *Journal of Educational Psychology, 99* (1), 99-114.

Smithers, A. and Zientek, P. (1992). *Gender, primary schools and the national curriculum*. Report for the National Association of Schoolmasters Union of Women Teachers and the Engineering Council. London: Engineering Council.

Sobel, M. E. (1982). Asymptotic intervals for indirect effects in structural equation models. *Sociological Methodology, 13,* 290-312.

Spencer, S. J., Steele, C. M., & Quinn, D.M. (1999). Stereotype Threat and Women's Math Performance. *Journal of Experimental Social Psychology, 35*, 4-28.

Spiegel, S., Grant-Pillow, H., Higgins, E. T. (2004). How regulatory fit enhances motivational strength during goal pursuit. *European Journal of Social Psychology, 34* (1), 39-54.

Stangor, C., Carr, C., & Kiang, L. (1998). Activating stereotypes undermines task performance expectations. *Journal of Personality and Social Psychology, 75,* 1191-1197.

Stangor, C., & Sechrist, G. B. (1998). Conceptualizing the determinants of academic choice and task performance across social groups. In J. K. Swim & C. Stangor (Eds.). *Prejudice the target's perspective* (pp. 105-124). New York: Academic Press.

Stapel, D., & Koomen, W. (2000). Distinctness of others, mutability of selves: Their impact on self-evaluation. *Journal of Personality and Social Psychology, 79* (6), 1068–1087.

Steele, C. M. (1997). A threat in the air: How stereotypes shape intellectual identity and performance. *American Psychologist, 52,* 613-629.

Steele, C. M & Spencer, S. J. (1992). The primacy of self-integrity. *Psychological Inquiry, 3* (4), 345-346.

Steele, C. M., & Aronson, J. (1995). Stereotype Threat and the intellectual Test Performance of African Americans. *Journal of Personality and Social Psychology, 69*, 797-811.

Steele, C. M., Spencer, S.J., & Aronson, J. (2002). Contending with group image: The psychology of stereotype and social identity threat. In M.P. Zanna (Ed.), *Advances in Experimental Social Psychology* (Vol. 34, pp. 379-440). San Diego, CA: Academic Press.

Stone, J. (2002). Battling doubt by avoiding practice: The effects of stereotype threat on self-handicapping in White athletes. *Personality and Social Psychology Bulletin, 12,* 1667-1678.

Stone, J., Lynch, C. I., Sjomeling, M., & Darley, J. M. (1999). Stereotype threat effects on Black and White athletic performance. *Journal of Personality and Social Psychology, 77,* 1213-1227.

Wade, M. L. (2007). *Exploring gender stereotype priming and stereotype threat in nested social categories.* Paper presented at the Midwestern Psychological Association 79th Annual Meeting, Chicago, IL, USA.

Walton, G. M., & Cohen, G. L. (2003). Stereotype lift. *Journal of Experimental Social Psychology, 39,* 456-467.

Wang, J., & Lee, A.Y. (2006). The role of regulatory focus in preference construction. *Journal of Marketing Research, 43* (1)*,* 28-38.

Wheeler, S. C., & Petty, R. E. (2001). The effects of stereotype activation on behavior: A review of possible mechanisms. *Psychological Bulletin, 127* (6), 797-826.

Wigfield, A. (1994). Expectancy-value theory of achievement motivation: A developmental perspective. *Educational Psychology Review, 6*, 49-78.

Wigfield, A., & Eccles, J. S. (1992). The development of achievement task values:: A theoretical analysis. *Developmental Review, 12*, 265-310.

Williams, T., & Betz, N. (1994). The relationships among occupational and task-specific measures of career self-efficacy. *Journal of Career Assessment, 2* (4), 341-351.

Yerkes, R. M, & Dodson, J. D. (1908). The Relation of Strength of Stimulus to Rapidity of Habit Formation. *Journal of Comparative Neurology & Psychology, 18*, 459-482.

5   APPENDIX A: Independent Variables

Note: If not indicated otherwise measures and manipulations were used in all studies.

Chronic regulatory focus scale
(Keller, 2004)

1. Wenn ich ein Ziel erreiche, auf das ich lange hingearbeitet habe, dann erlebe ich einen Zustand der Euphorie.

2. Wenn ich mit einer negativen Erwartung bezüglich meiner Fähigkeit konfrontiert werde, spüre ich in mir den Ehrgeiz aufkommen, die negative Erwartung zu widerlegen.

3. Ich glaube, wenn ich einmal an einem Bewerbungsverfahren in einem Unternehmen teilnehme und eine Absage erhalte, dann werde ich noch lange Zeit über dieses negative Ereignis grübeln und darüber nachdenken, welche Fehler ich gemacht habe.

4. Stellen Sie sich vor, Sie nehmen an einem Bewerbungsverfahren (Assessment Center) in einem Unternehmen teil. Wie stark wäre bei Ihnen der Ehrgeiz, in diesem Bewerbungsverfahren einen möglichst positiven Eindruck zu machen?

5. Wenn ich ein Ziel nicht erreiche, dass ich mir gesetzt habe, dann bin ich beunruhigt und grüble über meine Fehler.

6. In Situationen, in denen meine Leistung beurteilt wird, fühle ich mich häufig im Ehrgeiz gepackt.

7. Wenn ich mit einer negativen Erwartung bezüglich meiner Fähigkeit konfrontiert werde, fühle ich mich unter Druck gesetzt und angespannt.

8. Stellen Sie sich vor, Sie nehmen an einem Bewerbungsverfahren (Assessment Center) in einem Unternehmen teil. Wie stark wäre bei Ihnen die Angst, sich in diesem Bewerbungsverfahren zu blamieren?

9. Wenn mein Ergebnis in einer Klausur besser ist als ich erwartet hatte, dann fühle ich mich stolz.

10. Leistungstests, bei denen es für Fehler Punktabzüge gibt, lösen eine besondere Anspannung in mir aus.

11. In Situationen, in denen meine Leistung beurteilt wird, fühle ich mich häufig angespannt und unwohl.

12. Wenn ich in einer Prüfung ein gutes Ergebnis erziele, dann empfinde ich ein Gefühl der ausgelassenen Begeisterung.

13. Wenn ich weiß, dass meine Leistung von anderen Personen bewertet wird, dann spornt mich das an und steigert meine Ambitionen, ein gutes Ergebnis zu erreichen.

14. Ich glaube, wenn ich einmal an einem Bewerbungsverfahren in einem Unternehmen teilnehme und eine Absage erhalte, dann werde ich es schnell abhaken und mich darauf konzentrieren, was ich in Zukunft besser machen kann. (reverse coded)

15. Wenn mein Ergebnis in einer Klausur schlechter ist, als ich erwartet hatte, dann empfinde ich Anspannung und Besorgnis.

16. Wenn andere Personen Zweifel bezüglich meiner Leistungsfähigkeit äußern, bin ich besonders motiviert, diese Zweifel zu widerlegen und ein sehr gutes Ergebnis zu erzielen.

17. Mein Leben ist häufig geprägt durch Furcht vor Misserfolg und negativen Ereignissen.

18. Ich hoffe, dass ich in meinem späteren Berufsleben große Herausforderungen gestellt bekomme, die meinen Ehrgeiz wecken.

Item numbers measuring promotion focus:
1, 2, 4, 6, 9, 12, 13, 16, 18

Item numbers measuring prevention focus:
3, 5, 7, 8, 10, 11, 14, 15, 17

Stereotype threat and regulatory focus manipulations
(performance test)

Condition: Stereotype threat, prevention focus

1. Dieser Test zur Führungskompetenz hat in bisherigen Studien Geschlechtsunterschiede gezeigt. Die durchschnittliche Leistung von männlichen Teilnehmern war besser als die von weiblichen Teilnehmerinnen.

2. Für jede richtig beantwortete Aufgabe erhalten Sie einen Punkt, für jede falsch beantwortete oder fehlende Aufgabe wird Ihnen ein Punkt abgezogen. Um ein schlechtes Testergebnis zu vermeiden, ist es daher sinnvoll, sorgfältig vorzugehen und zu versuchen, Fehler zu vermeiden.

Condition: Stereotype threat, promotion focus

1. Dieser Test zur Führungskompetenz hat in bisherigen Studien Geschlechtsunterschiede gezeigt. Die durchschnittliche Leistung von männlichen Teilnehmern war besser als die von weiblichen Teilnehmerinnen.

2. Für jede richtig beantwortete Aufgabe erhalten Sie einen Punkt, für falsch beantwortete oder fehlende Aufgaben werden Ihnen keine Punkte abgezogen. Um ein gutes Testergebnis zu erreichen, ist es daher sinnvoll, zu versuchen, möglichst viele richtige Lösungen zu finden.

Condition: No stereotype threat, prevention focus

1. Dieser Test zur Führungskompetenz hat in bisherigen Studien keine Geschlechtsunterschiede gezeigt. Die durchschnittliche Leistung von weiblichen Teilnehmerinnen und männlichen Teilnehmern war gleich gut.

2. Für jede richtig beantwortete Aufgabe erhalten Sie einen Punkt, für jede falsch beantwortete oder fehlende Aufgabe wird Ihnen ein Punkt abgezogen. Um ein schlechtes Testergebnis zu vermeiden, ist es daher sinnvoll, sorgfältig vorzugehen und zu versuchen, Fehler zu vermeiden.

Condition: No stereotype threat, promotion focus

1. Dieser Test zur Führungskompetenz hat in bisherigen Studien keine Geschlechtsunterschiede gezeigt. Die durchschnittliche Leistung von weiblichen Teilnehmerinnen und männlichen Teilnehmern war gleich gut.

2. Für jede richtig beantwortete Aufgabe erhalten Sie einen Punkt, für falsch beantwortete oder fehlende Aufgaben werden Ihnen keine Punkte abgezogen. Um ein gutes Testergebnis zu erreichen, ist es daher sinnvoll, zu versuchen, möglichst viele richtige Lösungen zu finden.

Stereotype threat and regulatory focus manipulations
(role play)

1) <u>Introduction (all conditions)</u>

Wir möchten Sie nun bitten, sich an einer weiteren kurzen Studie zur Weiterentwicklung von Techniken der Personalauswahl zu beteiligen. Es handelt hierbei sich um eine Art Rollenspiel. Bitte lesen Sie die unten stehende Beschreibung und entscheiden Sie sich dann für eine Rolle. Sie werden [*Study 2:* dann */ Studies 1 and 3:* später, nachdem Sie den Test zur Führungskompetenz beendet haben], in einem Nebenraum gemeinsam mit anderen Teilnehmern und Teilnehmerinnen aus vorherigen Durchgängen der Studie eine Aufgabe bearbeiten.

2a) <u>Condition: Stereotype threat, prevention focus</u>

Das Verfahren ist geeignet Personen mit <u>äußerst geringen</u> <u>Führungskompetenzen</u> zu erkennen. Personen mit guten Führungskompetenzen können hingegen nicht identifiziert werden. Konkret heißt das, dass unter Verwendung dieses Verfahrens ausschließlich Personen heraus gesucht werden, die zu <u>den schlechtesten 5% in der Führungskompetenz</u> gehören. Hierbei hat sich bisher gezeigt, dass in dieser Gruppe <u>mehrheitlich Frauen</u> vertreten sind.

2b) <u>Condition: Stereotype threat, promotion focus</u>

Das Verfahren ist geeignet Personen mit <u>außergewöhnlich guten Führungskompetenzen</u> zu erkennen. Personen mit schlechten Führungskompetenzen können hingegen nicht identifiziert werden. Konkret heißt das, dass unter Verwendung dieses Verfahrens ausschließlich Personen ausgewählt werden, die zu <u>den besten 5% in der Führungskompetenz</u> gehören. Hierbei hat sich bisher gezeigt, dass in dieser Gruppe <u>mehrheitlich Männer</u> vertreten sind.

2c) <u>Condition: No stereotype threat, prevention focus</u>

Das Verfahren ist geeignet Personen mit <u>äußerst geringen</u> <u>Führungskompetenzen</u> zu erkennen. Personen mit guten Führungskompetenzen können hingegen nicht identifiziert werden. Konkret heißt das, dass unter Verwendung dieses Verfahrens ausschließlich Personen heraus gesucht werden, die zu <u>den schlechtesten 5% in der Führungskompetenz</u> gehören. Hierbei hat sich bisher gezeigt, dass in dieser Gruppe <u>mehrheitlich Männer</u> vertreten sind.

2d) <u>Condition: No stereotype threat, promotion focus</u>

Das Verfahren ist geeignet Personen mit <u>außergewöhnlich guten Führungskompetenzen</u> zu erkennen. Personen mit schlechten Führungskompetenzen können hingegen nicht identifiziert werden. Konkret heißt das, dass unter Verwendung dieses Verfahrens ausschließlich Personen ausgewählt werden, die zu <u>den besten 5% in der Führungskompetenz</u> gehören. Hierbei hat sich bisher gezeigt, dass in dieser Gruppe <u>mehrheitlich Frauen</u> vertreten sind.

3) <u>Closing paragraph (all conditions)</u>

Sie können sich vorab entscheiden, ob Sie entweder eine Führungsrolle oder eine Rolle im Team einnehmen wollen. Es kann allerdings nur eine Führungsperson pro Gruppe geben. Sowohl die Führungsperson als auch die Teamworker bekommen eine schriftliche Zusammenstellung einer komplexen Aufgabe, die gelöst werden muss. Die Führungsperson erhält zudem auch Hinweise auf die Lösung zu dieser Aufgabe. Es wird die Aufgabe der Führungsperson sein, die Teamworker zu der Antwort der Aufgaben zu führen *ohne* ihnen explizit die Lösung mitzuteilen.

Role model manipulation
(Study 3)

Positive role model: Newspaper article example for Social Sciences

Wir interessieren uns im Folgenden für das Image, das verschiedene Printmedien durch Schreibstil und Präsentationsform verbreiten. Wir möchten Sie daher bitten, sich den vor Ihnen liegenden Zeitungsartikel gut durch zu lesen. Bitte geben Sie anschließend an, welcher Tageszeitung Sie den Artikel zuordnen würden.

- Lesen Sie jetzt bitte den Zeitungsartikel gut durch -

Hochschulabschluss in Deutschland: Top oder Flop?

Immer mehr junge Leute erhalten heutzutage einen Abschluss an einer deutschen Hochschule. Nun steigt in Deutschland einerseits die Anzahl der Arbeitslosen, unter ihnen unvermittelbare Kräfte. Auf der anderen Seite erreichen immer mehr junge Leute gute und hoch qualifizierte Abschlüsse. Welche Chancen bietet der Arbeitsmarkt? Wird das steigende Bildungsniveau von jungen Leuten genutzt? Können heutige Berufseinsteiger ihre universitäre Ausbildung erfolgreich und gezielt einsetzen?

▬▬▬▬▬ hat für Sie junge Leute interviewt, die soeben ihr Studium beendet haben.

Julia K. (26), Diplom, Absolventin der Universität Mannheim, Sozialwissenschaften:

„Nachdem ich einen sehr guten Abschluss meines Studiums in der Tasche hatte, war ich sehr zuversichtlich, auch eine passende Stelle zu finden. Mir war es wichtig, eine Stelle zu finden, in der ich die Möglichkeit bekommen würde, Führungspositionen inne zu haben. Nach nur wenigen Bewerbungen bekam ich schon die entsprechende Stelle. Obwohl ich erst Berufsanfängerin bin, werde ich hier schon oft in leitenden Positionen eingesetzt. Ich fühle mich dieser Aufgabe gut gewachsen und freue mich, dass ich endlich das umsetzen kann, was ich im Studium gelernt habe. Nachdem die Probezeit bald abgelaufen ist, blicke ich schon mit Stolz auf meine Arbeit zurück. Ich glaube, dass ich hier beruflich weiter kommen werde und gute Aufstiegschancen habe. Insgesamt bin ich sehr zufrieden. Ich weiß, wie es für mich beruflich weiter geht und wo ich hin will." ╘··╛

Was glauben Sie, in welcher Tageszeitung ist dieser Artikel erschienen:

_____

Wie ähnlich sind Sie der in dem Artikel beschriebenen Person?

sehr ähnlich   O   O   O   O   O   O   O   überhaupt nicht ähnlich

Negative role model: Newspaper article example for Social Sciences

Wir interessieren uns im Folgenden für das Image, das verschiedene Printmedien durch Schreibstil und Präsentationsform verbreiten. Wir möchten Sie daher bitten, sich den vor Ihnen liegenden Zeitungsartikel gut durch zu lesen. Bitte geben Sie anschließend an, welcher Tageszeitung Sie den Artikel zuordnen würden.

- Lesen Sie jetzt bitte den Zeitungsartikel gut durch -

Hochschulabschluss in Deutschland: Top oder Flop?

Immer mehr junge Leute erhalten heutzutage einen Abschluss an einer deutschen Hochschule. Nun steigt in Deutschland einerseits die Anzahl der Arbeitslosen, unter ihnen unvermittelbare Kräfte. Auf der anderen Seite erreichen immer mehr junge Leute gute und hoch qualifizierte Abschlüsse. Welche Chancen bietet der Arbeitsmarkt? Wird das steigende Bildungsniveau von jungen Leuten genutzt? Können heutige Berufseinsteiger ihre universitäre Ausbildung erfolgreich und gezielt einsetzen? ▬▬▬▬▬ hat für Sie junge Leute interviewt, die soeben ihr Studium beendet haben.

Julia K. (26), Diplom, Absolventin der Universität Mannheim, Sozialwissenschaften:

„Ich fühlte mich schon nach Abschluss meines Studiums unsicher, was die Zukunft bringen würde, ob ich überhaupt eine Stelle finden würde. Mir war es wichtig eine Stelle zu finden, in der ich mit anderen Menschen im Team zusammen arbeite. Ich bewarb mich bei mehreren Vereinen und Unternehmen und bekam schließlich auch eine Anstellung. Ich werde hier nun hauptsächlich für die Teamarbeit eingesetzt. Die Arbeit fällt mir sehr schwer, da ich nicht das Gefühl habe, dass ich das umsetzen kann, was ich im Studium gelernt habe. Aussichten, beruflich weiter zu kommen oder aufzusteigen, werde ich hier wohl nicht haben. Die Probezeit ist bald abgelaufen und ich bin schon ziemlich nervös, ob ich überhaupt weiter beschäftigt werde. Insgesamt fühle ich mich sehr bedrückt. Ich bin mir nicht sicher, wie es für mich beruflich weiter gehen soll."

Was glauben Sie, in welcher Tageszeitung ist dieser Artikel erschienen:

_____

Wie ähnlich sind Sie der in dem Artikel beschriebenen Person?

sehr ähnlich   O   O   O   O   O   O   O   überhaupt nicht ähnlich

6 APPENDIX B: Dependent Variables and Mediator

Note: If not indicated otherwise measures were used in all studies.

Leader and team role motivation measure

Bitte geben Sie nun an, wie stark Ihr Interesse daran ist, die entsprechende Rolle in dem folgenden Rollenspiel einzunehmen:

Führungsrolle

kein Interesse   o   o   o   o   o   o   o   starkes Interesse

Rolle im Team

kein Interesse   o   o   o   o   o   o   o   starkes Interesse

Wie hoch ist Ihre Präferenz, die entsprechende Rolle in dem folgenden Rollenspiel einzunehmen:

Führungsrolle

niedrige Präferenz   o   o   o   o   o   o   o   hohe Präferenz

Rolle im Team

niedrige Präferenz   o   o   o   o   o   o   o   hohe Präferenz

Was denken Sie, wie viel Spaß hätten Sie an der entsprechenden Rolle?

Führungsrolle

kein Spaß   o   o   o   o   o   o   o   viel Spaß

Rolle im Team

kein Spaß   o   o   o   o   o   o   o   viel Spaß

Was glauben Sie, wie erfolgreich, würden sie in der entsprechenden Rolle sein?

Führungsrolle

gar nicht erfolgreich   o   o   o   o   o   o   o   sehr erfolgreich

Rolle im Team

gar nicht erfolgreich   o   o   o   o   o   o   o   sehr erfolgreich

General leadership motivation measure (BIP)
(Hossiep & Paschen, 2003)

General leadership motivation, selected and transformed items (Studies 1 and 2)

1. Es stellt mich zufrieden, wenn ich in dem Rollenspiel andere beeinflussen kann.

2. Ich werde in dem Rollenspiel Autorität ausstrahlen.

3. Ich bin nicht unbedingt daran interessiert, in dem Rollenspiel eine leitende Position inne zu haben. (reverse coded)

4. Ich glaube, dass sich in dem Rollenspiel andere an mir orientieren werden.

5. Ich trage gern die Verantwortung für wichtige Entscheidungen in dem Rollenspiel.

General leadership motivation, original scale (Study 3)

1. Ich vermeide Gespräche, in denen ich massiv Einfluss auf andere nehmen muss. (reverse coded)

2. Ich treffe ungern Entscheidungen, die den Handlungsspielraum anderer Menschen einschränken. (reverse coded)

3. Es stellt mich zufrieden, wenn ich andere beeinflussen kann.

4. Ich wirke auf andere mitreißend.

5. Eine Spezialistentätigkeit ist mir lieber als eine Führungsaufgabe. (reverse coded)

6. Ich strahle Autorität aus.

7. Ich bin nicht unbedingt daran interessiert, eine leitende Position inne zu haben. (reverse coded)

8. Ich fühle mich nicht wohl, wenn ich anderen Anweisungen geben muss. (reverse coded)

9. In Besprechungen übernehme ich vielfach die Gesprächsführung, auch wenn ich nicht die Leitungsposition innehabe.

10. Ich kann mir ein erfülltes Berufsleben ohne die Wahrnehmung von Führungsverantwortung nicht vorstellen.

11. Andere orientieren sich an mir.

12. Für mich sind fachliche Kompetenzen wichtiger als Führungsqualitäten. (reverse coded)

13. Es fällt mir schwer, andere zu kritisieren. (reverse coded)

14. Ich trage gern die Verantwortung für wichtige Entscheidungen.

15. In Situationen, in denen die Leitung einer Gruppe erforderlich ist, stelle ich mich nicht in den Vordergrund. (reverse coded)

Flyer including items assessing interest in a leadership workshop
(Study 3)

Anfrage des Karrierezentrums

> **Das Karrierezentrum der Universität Mannheim wird in Kürze einen Workshop zur Führungskompetenz anbieten. Sie können sich später bei der Versuchsleitung für einen solchen Workshop anmelden oder/und kostenlos Informationsmaterial zu dieser Veranstaltung anfordern. Zusätzlich können Sie sich auf einen Emailverteiler aufnehmen lassen, durch den Ihnen in regelmäßigen Abständen Informationen über das Thema Führung und Kompetenzstärkung zukommen werden. Bitte geben Sie im folgenden zunächst an, ob Sie Interesse an den jeweiligen Angeboten haben.**

✂--

Bitte kreuzen Sie jeweils an:

Ja, ich habe Interesse, an dem Workshop zur Führungskompetenz teil zu nehmen.   ❏

Ja, ich möchte kostenloses Informationsmaterial über den Workshop zur Führungskompetenz erhalten.   ❏

Ja, ich möchte in den Emailverteiler zum Thema Führung und Kompetenzstärkung aufgenommen werden.   ❏

Wenn Sie eine der oben stehenden Fragen mit „Ja" beantwortet
haben, können Sie später Ihre Emailadresse bei der
Versuchsleitung in eine Liste eintragen.

Performance test

<u>Instruction and sample items (Studies 1 and 2)</u>

- Führungskompetenz Test -

Sieben Teenager - Carlos, Leona, Gregor, Ingrid, Naomi, David und Rick - besuchen einen Vergnügungspark und werden mit der Achterbahn fahren. Es sind zwei Wägen verfügbar, allerdings müssen sich die Teenager entsprechend der unten aufgeführten Bedingungen aufteilen:

Carlos und Naomi sind ein Paar und müssen im selben Wagen fahren. David und Gregor sind Freunde, allerdings ist Ingrid Gregors Freundin, so dass David nicht im selben Wagen sein kann wie Gregor, wenn nicht auch Ingrid in dem Wagen ist. Die Vorschrift der Achterbahnbetreiber besagt, dass die maximale Zahl an Fahrgästen pro Wagen vier beträgt. Leona ist Gregors Schwester und Rick ist Leonas Ex-Freund, so dass weder Leona noch Gregor im selben Wagen wie Rick fahren können.

1. Wenn David im selben Wagen wie Leona fährt, welche der folgenden Aussagen muss dann wahr sein?

   a) Rick fährt im anderen Wagen.
   b) Ingrid fährt im anderen Wagen.
   c) Gregor fährt im anderen Wagen.
   d) Naomi fährt im selben Wagen wie David und Leona.
   e) Carlos fährt im selben Wagen wie David und Leona.

2. Wenn Naomi im selben Wagen wie Gregor fährt, welche der folgenden Aussagen muss dann wahr sein?

   a) Rick fährt im selben Wagen wie Naomi und Gregor.
   b) Leona fährt im selben Wagen wie Rick.
   c) Leona fährt in einem anderen Wagen als Gregor.
   d) Naomi und Gregor fahren in dem Wagen in dem vier Personen fahren.
   e) Carlos fährt in einem anderen Wagen als Gregor.

3. Wenn Rick im selben Wagen fährt wie Ingrid, welche der folgenden Aussagen muss dann wahr sein?

   a) David fährt im selben Wagen wie Leona.
   b) David fährt im selben Wagen wie Carlos.
   c) Leona fährt im selben Wagen wie Gregor.
   d) Naomi fährt im selben Wagen wie Rick und Ingrid.
   e) David fährt im selben Wagen wie Naomi.

4. Wenn Naomi im selben Wagen fährt wie David, welche der folgenden Listen ist dann eine vollständige und korrekte Liste der Personen, die in dem anderen Wagen fahren müssen?

   a) Rick, Gregor, Ingrid
   b) Rick, Carlos, Leona
   c) Ingrid, Carlos, Gregor, Rick
   d) Rick, Ingrid, Leona
   e) Ingrid, Leona, Gregor

- Führungskompetenz Test -

I. Bitte kreuzen Sie jeweils dasjenige Wort an, das zu dem dritten vorgegebenen Wort eine ähnliche Beziehung hat wie die Beziehung, die zwischen den beiden ersten vorgegebenen Wörtern besteht**.**

1.)   klein : groß   =   kurz : ?

    a) lang   b) weit   c) breit   d) ausgedehnt   e) schmal

2.)   Vorsicht : Sicherheit   =   Risiko : ?

    a) Unfall   b) Gefahr   c) Geschwindigkeit   d) Verlust   e) Konkurs

3.)   Vertrauen : Experte   =   Unsicherheit : ?

    a) Erfahrung   b) Fehler   c) Anfänger   d) Nichtskönner   e) Routinier

II. Stellen Sie sich bitte vor, dass Sie Abteilungsleiter einer Firma sind. Ihre Aufgabe besteht darin, sieben ihrer Mitarbeiter bestmöglich auf 2 Büroräume zu verteilen. Dies muss allerdings unter folgenden Bedingungen geschehen:

Ihre Mitarbeiter Herr Schmidt und Frau Brauer arbeiten besonders gut zusammen und müssen daher im gleichen Büroraum arbeiten. Herr Meier und Frau Kluge würden gerne in einem Raum zusammenarbeiten, allerdings muss Frau Kluge mit Frau Schneider arbeiten, so dass Herr Meier nicht im selben Raum wie Frau Kluge arbeiten kann, wenn nicht auch Frau Schneider in diesem Raum arbeitet. Jeder Büroraum ist so ausgelegt, dass maximal vier Personen pro Zimmer arbeiten können. Weiterhin dürfen weder Herr Müller noch Frau Kluge im selben Raum wie Frau Berger arbeiten, da diese Zusammensetzung zu Problemen führen würde.

1. Wenn Herr Meier im selben Raum wie Herr Müller arbeitet, welche der folgenden Aussagen muss dann wahr sein?

    a. Frau Berger arbeitet im anderen Raum.
    b. Frau Schneider arbeitet im anderen Raum.
    c. Frau Kluge arbeitet im anderen Raum.
    d. Frau Brauer arbeitet im selben Raum wie Herr Meier und Herr Müller.
    e. Herr Schmidt arbeitet im selben Raum wie Herr Meier und Herr Müller.

Self-efficacy
(Schwarzer, 1994)

Specific self-efficacy, selected items

1. Wenn mir jemand in dem Rollenspiel Widerstand leistet, werde ich Mittel und Wege finden, mich durchzusetzen.

2. Es wird mir in dem Rollenspiel keine Schwierigkeiten bereiten, meine Absichten und Ziele zu verwirklichen.

3. Auch bei überraschenden Ereignissen in dem Rollenspiel glaube ich, dass ich gut damit zurechtkommen werde.

4. Schwierigkeiten in dem Rollenspiel sehe ich gelassen entgegen, weil ich mich immer auf meine Fähigkeiten verlassen kann.

5. Wenn ich in dem Rollenspiel mit einer neuen Sache konfrontiert werde, werde ich wissen, wie ich damit umgehen kann.

General self-efficacy, selected items (Study 3)

1. Wenn mir jemand Widerstand leistet, finde ich Mittel und Wege, mich durchzusetzen.

2. Es bereitet mir keine Schwierigkeiten, meine Absichten und Ziele zu verwirklichen.

3. Auch bei überraschenden Ereignissen glaube ich, dass ich gut damit zurechtkommen werde.

4. Schwierigkeiten sehe ich gelassen entgegen, weil ich mich immer auf meine Fähigkeiten verlassen kann.

5. Wenn ich mit einer neuen Sache konfrontiert werde, weiß ich, wie ich damit umgehen kann.

7   APPENDIX C: Complete Questionnaires

Study 1

    Questionnaire part 1

    Questionnaire part 2

    Questionnaire part 3

    Questionnaire part 4

    Performance Test

Study 2

    Questionnaire part 1

    Questionnaire part 2

    Questionnaire part 3

    Questionnaire part 4

    Performance Test

Study 3

    Sign-up sheet

    Questionnaire part 1

    Questionnaire part 2

    Questionnaire part 3

    Questionnaire part 4

    Performance Test

Note: Please see annexed files on attached data CD or download from

http://madoc.bib.uni-mannheim.de/madoc/index.php?la=en.

Eidesstattliche Erklärung

Hiermit versichere ich, dass ich die vorliegende Dissertation eigenständig und ohne Benutzung anderer als der angegebenen Quellen und Hilfsmittel angefertigt habe. Wörtliche oder inhaltliche Entlehnungen aus anderen Quellen sind eindeutig als solche kenntlich gemacht und mit entsprechenden Quellenangaben versehen. Diese Arbeit hat in gleicher oder ähnlicher Form noch keiner Prüfungsbehörde vorgelegen.

Dipl.-Psych. Anke Görzig