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# **Uncertainty – Enemy of Democracy?**

Influence of Uncertainty on Leadership Evaluations and the  
Role of Self-Esteem and Power

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## Preface

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# 1 Introduction and Overview

Throughout history there has been the question: How should people be led, governed or guided? A duality of two opposing approaches prevails: democracy and autocracy, ranging from personal freedom and autonomy to total subordination of the individual. Nowadays, at least in Western cultures the benefits of democracy seem to be out of question. Nevertheless, in threatening and uncertain times, authoritarian systems such as National Socialism emerged. And even today, after the events of September 11<sup>th</sup> people are willing to accept more and more restrictions of their civil rights such as biometric identification information on national IDs, observation of citizens' private activities, restrictions on freedom of speech, freedom of assembly and civil liberties in general.

Why should a substantial amount of people in Western cultures, people who strongly endorse democratic values, tend to favor authoritarian leaders in situations of uncertainty? What is the reason for this self-imposed subordination? Already Kant (1754/1784) tried to find an answer to the question why people subordinate themselves voluntarily to illegitimate control, preferring a state of dependency rather than one of individual autonomy. Although this is an old question, to date, the psychological processes that lead to authoritarian reactions have not been extensively studied and are not yet fully understood. At the same time the importance to find an answer to this question becomes more and more important. Galbraith (1977) stated that today we live in an "age of uncertainty" that is considerably less predictable than political and economic life in past decades. A prominent example is the current financial crisis that is now a worldwide concern with highly threatening consequences. The new president of the U.S.A. Obama posited "If we don't act swiftly and boldly, we could see a much deeper economic downturn that could lead to double-digit unemployment". Paul Krugman, a Nobel prize winning economist, argued: "This looks an awful lot like the beginning of a second Great Depression". Paul Volcke, an economic adviser to Barack Obama even went a step further and stated "I don't remember any time, maybe even the Great Depression, when things went down quite so fast, quite so uniformly around the world". Thus, the current financial crisis posits a worldwide threat and uncertainty plays an enormously important role for millions of people. Are we in danger of a recurrence of authoritarian systems such as the National Socialism? Is democracy at risk? These questions highlight the importance of unraveling and understanding the underlying processes of the relation between uncertainty and authoritarian tendencies.

A growing body of research investigated the link between these threats and levels of authoritarianism. Most studies in the field, however, mainly focused on the impact of situational factors and by this neglected one main internal complement to external threats, that is, uncertainty.

The present dissertation is set out to specify and extend previous research findings by investigating the effect of felt uncertainty on submissive attitudes towards authorities and, in particular, towards authoritarian leaders. Not everyone is expected to show such an authoritarian reaction to feelings of uncertainty. Individuals with low self-esteem have been shown to lack confidence in themselves and to be susceptible to external influence which makes them in particular prone to an authoritarian reaction.

As an important resource in social interactions between leaders and followers power is also assumed to play a critical role in the evaluation of authoritarian leadership. Being aware of having power is expected to make even individuals with low self-esteem confident in themselves and by this prevent them from their authoritarian reaction to uncertainty.

In sum, whereas past research reliably demonstrated a link between threat and authoritarianism in general, this dissertation takes the next step by determining individual difference variables that influence the authoritarian reaction to uncertainty in the domain of leadership.



## 2 Theoretical Part

*First*, the present chapter starts out by introducing the research topic of authoritarianism and reporting previous research that examined the general link between threat and authoritarianism (2.1). Subsequently, research relevant to specify the main research assumptions of the present dissertation is reviewed.

*Second*, as one main component of authoritarianism is the submission to authorities, the present dissertation focuses on this component and investigates the evaluations of authoritarian and democratic leadership (2.2).

*Third*, as different kinds of threat are all assumed to evoke aversive feelings of uncertainty in the individual, the present dissertation concentrates on subjective uncertainty and strategies of uncertainty resolution (2.3).

*Fourth*, as individuals with low self-esteem perceive a lack of self-confidence and control but individuals with high self-esteem do not, it is hypothesized that both groups react differentially to uncertainty: low self-esteem individuals in an authoritarian and high self-esteem individuals in a democratic way (2.4).

*Fifth*, as power induces self-confidence and control, it is hypothesized that the salience of high power (compared to no salience of power or salience of low power) buffers individuals against their reactions to uncertainty (2.5).

*Sixth*, as the evaluation of authoritarian leaders can be influenced by social desirability effects, implicit attitude measures should be more sensitive to unravel the expected authoritarian reaction of low SEs to uncertainty than explicit ones (2.6).

The chapter closes with an overview of the research project of the present dissertation and the delineation of general hypothesis.

### 2.1 Authoritarianism – The Problem

The term authoritarian can be conceived as either sides of the same coin, the attitudes and behaviors of an authoritarian leader or an authoritarian follower. As Son Hing, Bobocel, Zanna and McBride (2007) put it “When a dominant leader is paired with at least one submissive follower, their relationship is authoritarian”. The present dissertation focuses on the submissive follower and investigates the mechanisms that cause voluntary subordination under an authoritarian leader. In the following the concept of the authoritarian personality and measures to assess it are introduced (2.1.1), followed by a situational approach investigating the link between threat and authoritarianism (2.1.2). Then, the assumption of an authoritarian reaction to threatening situations is presented (2.1.3). The section concludes with a summary of research findings and a discussion of their relevance for the present dissertation (2.1.4).

### 2.1.1 The Authoritarian Personality and its Measurement

Evoked by the attempt to explain the rise of Nazism, in their classic work "The Authoritarian Personality", Adorno, Frenkel-Brunswik, Levinson, and Sanford (1950) attempted to elucidate the psychological bases of fascism, anti-Semitism and ethnocentrism. Rooted in Freudian psychodynamics, they conceived authoritarianism as a personality syndrome characterized by nine surface traits: authoritarian submission, authoritarian aggression, conventionalism, anti-intraception, superstition and stereotypy, preoccupation with power and toughness, destructiveness and cynism, projectivity, and exaggerated interest in sexuality. These surface traits were viewed as a psychodynamic pattern with a single underlying dimension - the authoritarian personality caused by a rigid parental style. Adorno and colleagues (1950) developed a paper-pencil measure of authoritarianism, the Fascism scale (F-scale; Adorno et al., 1950) that aimed at assessing an attitudinal syndrome of prejudice against outgroups and minorities, ethnocentric ingroup glorification, politico-economic conservatism, and pro-fascist attitudes. Research found relationships among the F-scale, social background, and social attitudes, however, evidence on the dynamics and origins of authoritarianism proved to be elusive (Altemeyer, 1981, 1988).

Allport (1954), Rokeach (1954), and Wilson (1973) proposed three prominent alternative conceptualizations of the authoritarian personality. Allport (1954) argued in his book "The Nature of Prejudice" that the authoritarian personality is characterized by the need for structure, order and control, as well as punitive hostility to deviance, unconventionality, novelty, and change. His conceptualization was very influential on a theoretical basis, but he never developed a measure to assess his concept of the authoritarian personality. Rokeach (1954) conceptualized the authoritarian personality in terms of a dogmatic and rigid cognitive style that predisposes to authoritarian ideologies (both left and right) and intolerance of others with dissimilar beliefs and values. In order to measure this cognitive style he introduced the Dogmatism scale (D-scale; Rokeach, 1954). Wilson (1973) conceived the authoritarian personality as characterized by conservatism which makes the individual unable to cope with social change. He developed his Conservatism scale (C-scale; Wilson, 1973) to assess a set of social attitudes assumed to reflect the personality dimension.

Empirical studies showed that in despite of the aim to assess a unitary personality dimension, the F-, D- and C-scales were not unidimensional, but were characterized by an unstable and unclear multidimensional factor structure, that had in part problems of acquiescence, lacked internal consistency reliability and yielded only poor correlations with validity criteria (Altemeyer, 1981).

From a more behavioral perspective, Altemeyer (1988) conceptualizes authoritarianism as a personality dimension that is acquired through interpersonal interactions during

childhood and adolescence. He focuses on the three basic authoritarian components originally proposed by Adorno and colleagues (1950): “submission to the authorities who are perceived to be established and legitimate” (authoritarian submission); “general aggressiveness, directed against various persons, which is perceived to be sanctioned by established authorities” (authoritarian aggressiveness), and “adherence to the social conventions which are perceived to be endorsed by society” (conventionalism; Altemeyer, 1981, p. 148) and defines his concept as right-wing authoritarianism that can be assessed by his Right-Wing Authoritarianism scale (RWA scale; Altemeyer, 1981, 1988, 1996). According to his view, “Right-wing authoritarianism is an individual factor, a personality variable, a trait if you like, developed on the premise that some persons need very little situational pressure to (say) submit to authority, while others often require significantly more. Conceived as a set of covarying attitudes (that is, attitudes that tend to go together), it is operationally defined as a score on an attitude scale that I named (in a burst of creativity) the RWA scale.” (Altemeyer, 1988, p. 3). Sample items of the 30-item version of the RWA scale (Altemeyer, 1996) are: “Our country desperately needs a mighty leader who will do what has to be done to destroy the radical new ways and sinfulness that are ruining us,” “It is always better to trust the judgment of the proper authorities in government and religion than to listen to the noisy rabble-rousers in our society who are trying to create doubt in people’s minds,” and “The ‘old-fashioned ways’ and ‘old-fashioned values’ still show the best way to live.”

Compared to previous authoritarianism scales the RWA scale has been found to be more reliable, unidimensional and balanced for acquiescence. It has been shown to be associated with phenomena such as right-wing extremism, aggression towards nonconformity and deviance, ethnocentrism, and generalized prejudice (Altemeyer, 1981, 1988, 1996).

It has long been hypothesized that threat and uncertainty play an important role in the development of authoritarianism. Already Fromm (1941) argued that the modern world and the consequences of capitalism state a threat to security and can lead to authoritarianism. Adorno and colleagues (1950) assumed the authoritarian personality to be a product of threatening inconsistent child-rearing practices causing an inner conflict between repressed aggression and fearful submission toward parental authority and by this to all authority. Allport (1954) argued that ego weakness and personal insecurity causes the need for structure, order and control. Rokeach (1954, 1960) posited that external threat and perceived anxiety are one main cause for dogmatism and Wilson (1973) hypothesized that anxiety and fear of uncertainty contribute to the development of conservatism.

### 2.1.2 Threat and Authoritarianism

Although there is a long tradition of explaining authoritarianism from a personality perspective empirical evidence suggests that authoritarian attitudes and behaviors are not only a matter of personality but can also be induced by situational factors. Analyzing archival data, Sales (1972) showed that in times of the Great Depression conversion rates from non-authoritarian to authoritarian church denominations were substantially higher than in times of economic security. McCann (1999) replicated these findings demonstrating that annual threat levels were positively related to annual percentage changes of authoritarian denominations and negatively related to annual percentage changes of less authoritarian denominations. Comparing archival data from threatening historical periods (the 1930's and 1967-1970) and non-threatening periods (the 1920's and 1959-1964), Sales (1973) showed that many indicators associated with authoritarianism were significantly higher in periods of societal threat than in non-threatening years. In a replication, Doty, Peterson, and Winter (1991) compared archival data from the U.S.A for high-threat (1978-1982) and low-threat (1983-1987) periods. McCann (1997) showed that during years of high threat presidential elections were more influenced by perceived strength and power of the candidates than during low threatening times. Peterson and Gerstein (2005) content coded themes of authoritarianism in American comic books and found more authoritarian indicators during years of relatively high social and economic threat (1978-82 and 1991-92) compared to years of relatively low threat (1983-90).

Besides correlational and longitudinal evidence, two experimental studies provide additional evidence for the link between threat and authoritarianism. Sales and Friend (1973) showed that participants threatened by failure in two experimental tasks increased in their post-experimental compared to their pre-experimental levels of authoritarianism assessed by the F-scale. In contrast, participants encouraged by success in these tasks showed a decrease from their pre- to their post-experimental authoritarianism scores. Overall, these differential changes were greater for individuals that attributed their performance on the tasks to internal causes. In a recent experimental study, Duckitt and Fisher (2003) demonstrated that reading a hypothetical scenario describing the future as insecure and threatening led to heightened ideological authoritarianism compared to a secure future scenario. In their meta-analytic review Jost, Glaser, Kruglanski, and Sulloway (2003) showed that both dispositional and situational variables associated with management of uncertainty and threat predicted a heightened appeal to conservative opinions and leaders. Conservatism was defined as resistance to change and opposition to equality. In their uncertainty-threat model Jost and colleagues (2003) assumed that stability and hierarchy provide reassurance and structure, whereas change and equality imply greater chaos and unpredictability. Amongst others

political conservatism was assessed by measures of authoritarianism, e.g. Altemeyer's RWA scale (1981, 1988, 1996).

The studies cited above followed the assumption that individuals in general will demonstrate greater levels of authoritarianism when confronted with perceived threats. Threat is expected to exert a direct influence on attitudes and beliefs resulting in authoritarian attitudes and behaviors. A more differentiated conceptualization argues that only individuals that are susceptible to contemporary threat information will react in that way. Threat is expected to interact with individual difference characteristics (e.g., dispositional authoritarianism) to influence attitudes and behaviors and this leads to authoritarian attitudes and behaviors (Feldman, 2003; Stenner, 2005). In her authoritarian dynamic theory (ADT), Stenner (2005) considers the authoritarian dimension as characterized by an authoritarian pole that reflects a "preference for uniformity and insistence upon group authority" and a libertarian pole that represents a "preference for difference and insistence upon individual autonomy" (p. 15). Whereas –as cited above– many theorists assume an increase in everyone's authoritarianism under threat, ADT predicts a polarization effect. In low threatening situations, authoritarian and libertarian individuals should not differ in tolerance-related positions, but they "will suddenly sharply diverge in the stances they adopt toward any issue touching upon diversity, dissent, and deviance" (Stenner, 2005, p. 323) under high threatening circumstances. Thus, authoritarians respond to threat by an increase, libertarians by a decrease in their authoritarian attitudes and behavior. In other words, an authoritarian activation occurs only in authoritarian individuals and this is only the case when the individual is threatened and the authoritarian manifestations are required to cope with the threat. This reasoning is in line with the concept of dominant response that is assumed to be enhanced by arousal (Hull, 1943; Zajonc, 1965). One could argue that authoritarian displays are the dominant response for authoritarians and because threat increases arousal authoritarianism is enhanced. In contrast, the dominant response for libertarians should be democratic resulting in decreased authoritarianism under threat.

Consistently, Feldman and Stenner (1997) found evidence of a significant interaction between societal threat and authoritarian predispositions on intolerance, prejudice and punitiveness. Rickert (1998) showed that authoritarians experiencing economic threat were more likely than non-threatened authoritarians or non-authoritarians to support social policies restricting benefits for powerless and disadvantaged groups. Lavine and colleagues (1999) showed that high authoritarian individuals were more responsive to threat-related messages about voting (emphasizing the negative consequences of failing to vote), whereas low authoritarian individuals were more responsive to messages emphasizing the rewards of voting (emphasizing the positive benefits of voting). The interaction of threat and authoritarianism influenced participants' perceptions of message quality, which mediated

voting intentions and behaviors. In a recent study, McCann (2008) demonstrated that the number of death sentences and executions, a phenomenon that can be interpreted as an expression of authoritarian aggressiveness, was higher in more threatened conservative states than in less threatened conservative states, and was lower in more threatened liberal states than in less threatened liberal states. As conservatism and authoritarianism have been shown to be related (e.g., Stone, 1980; Stone & Smith, 1993), these findings are in line with the polarization effect predicted by ADT (Stenner, 2005).

Overall, it has been shown that situational threat heightens authoritarianism. However, most of the studies showing a general link between threat and authoritarianism were at the societal level and used aggregated data of authoritarian attitudes and behaviors. Individual predispositions were not taken into account and, therefore, these studies did not allow for the potential interaction of threat and personal variables such as authoritarian dispositions in relation to authoritarian displays. Also, the experimental study of Duckitt and Fisher (2003) cannot rule out the possibility that only persons high in authoritarianism reacted to the insecure future scenario by adopting more authoritarian attitudes and others did not. Only Sales and Friend (1973) accounted for pre-authoritarianism scores in their experiment, however, the changes in authoritarianism they observed were fairly small. Thus, the link between threat and authoritarianism “observed in the aggregate can be equally compatible with a process that depends upon variation in individual predispositions and one that does not” (Stenner, 2005, p. 30).

### **2.1.3 The Authoritarian Reaction**

Oesterreich (2005) propose that one main response to stressful and threatening situations is to seek the security and shelter provided by authorities. He assumed that this flight into security is a basic reaction of all human beings which is acquired when children first learn to cope with reality. In frightening situations parents or other persons responsible for upbringing the child provide security and the flight towards the parents' shelter is, therefore, an inevitable and necessary reaction. During socialization individuals learn to overcome this “authoritarian reaction” by developing their own coping strategies. In situations in which a threat is emotionally overtaxing and cognitive coping strategies fail to resolve it, however, even adults may react in an authoritarian way by orientation toward and submission under persons in power. The latter are attractive because they have the means to give shelter and solve the individuals' problems and by this reduce feelings of anxiety and insecurity.

### **2.1.4 Summary and Conclusion**

The studies cited above used very different kinds of outcome variables that were only loosely solded to the core elements of authoritarianism. Oesterreich (2005) proposes that individuals

exhibit an authoritarian reaction when they feel emotionally overtaxed. That is, they seek the shelter of someone who supposedly has the power to handle the situation. Submissiveness to authorities is one of the main components of the authoritarianism concept and leaders can be conceived of as persons who seem to have the power and means to provide guidance in threatening situations. Therefore, the present dissertation investigates the evaluations of authoritarian and democratic leaders in particular (2.2) rather than authoritarianism in general. These leadership evaluations are specified as attitudes with an affective and cognitive component.

Although there is a long tradition of explaining authoritarianism from a personality perspective, empirical evidence suggests that authoritarian attitudes and behaviors are not only a matter of long-term socialization and personality but can also be induced by short-term factors of the situation. That is, threat and insecurity were found to be strongly linked to authoritarian attitudes, beliefs and behaviors. In the research reviewed above, however, the term of threat is used rather loosely and the studies addressed very different types of threat. One commonality, all these different kinds of threats share, is that they have an impact on the individual, that is, they induce feelings of uncertainty. Therefore, the present dissertation focuses on the reactions to uncertainty in particular (2.3) rather than to threat in general.

Explanations for the threat-authoritarianism link take two different perspectives: one approach argues that threat increases everyone's authoritarianism. The other approach posits that the increase in authoritarian displays is due to an interaction of threat and individual predispositions such as level of pre-authoritarianism. As the latter approach gathers growing empirical support that the former approach cannot rule out and individuals might differentially overcome their authoritarian reactions, the present dissertation aims at identifying a relevant individual difference variable that moderates the link between uncertainty and the authoritarian reaction, namely self-esteem (2.4).

## **2.2 Leadership Styles and their Evaluation – The Focus**

The following section is intended to specify the defining features of authoritarian and democratic leadership and their main differences (2.2.1). Previous research on the evaluations of these two leadership styles regarding satisfaction and outcome variables is presented (2.2.2). As leadership evaluations can be conceived as attitudes with an affective and a cognitive component, relevant aspects from the research on attitudes are introduced (2.2.3). The section concludes with a summary of research findings and a discussion of their relevance for the present dissertation (2.2.4).

### 2.2.1 Authoritarian and Democratic Leaders

Leadership has long been a focus of research in the field of social psychology and social sciences (e.g., Bass, 1990; Chemers, 1987, 2001). Chemers (2001) defines leadership as “a process of social influence through which an individual enlists and mobilizes the aid of others in the attainment of a collective goal” (p. 376). Thus, leadership is the process of influencing followers to contribute towards a common goal. One of the main perspectives on the study of leadership emphasizes the behavior of leaders, that is, *what* leaders do and, in particular, *how* they do it. The classic leadership research states a conception of leadership that differentiates the way power is distributed, whose needs are met, and how decisions are made (Bass, 1990; Lewin, Lippitt, & White, 1939; Vroom & Yetton, 1973; Yukl, 1998). Bales (1950) distinguished between two key leadership roles on groups, a *task specialist* and a *socio-emotional specialist*. The behavior of a task specialist is more likely to be dominant and directive to fulfill the group’s task, the behavior of the socio-emotional specialist is more likely to be concerned with the feelings of other group members. The Michigan leadership studies (Likert, 1961) proposed a dimension of leadership behavior with the two poles of *production centered* and *employee centered*. In a similar vein, the Ohio State leadership program (e.g., Fleishman, 1973; Stogdill, 1974) differentiated between *initiating structure* and *consideration*. Initiating structure means defining the group’s objectives and organizing the followers’ work toward goal attainment. Consideration means concern for the welfare of subordinates. Fiedler (1967) speaks of *task oriented* and *relations oriented*.

Although different terms are used there seems to be a general distinction between two clusters of leadership styles. Authoritarian and democratic leadership can be conceived as the most extreme exemplars of these clusters (Bass, 1990; Lewin et al., 1939; Vroom & Yetton, 1973; Yukl, 1998). Neuberger (1972) analyzed 30 experimental studies on authoritarian and democratic leadership and extracted five dimensions that distinguish between both leadership styles: participation rate, structure, control, power of decision, and motivation. Authoritarian leadership is characterized by low participation and motivation, but high structure, control and power of decision. Democratic leadership is characterized by the opposite values, that is, high participation and motivation, but low structure, control and power of decision. Authoritarian leaders dictate methods and stages of goal attainment one step at a time, direct the actions and interactions of followers and are unconcerned about the group members’ autonomy and development. Democratic leaders, in contrast, encourage group members to determine their own policies, explain the steps toward attaining the goals, let them initiate their own tasks and interactions and are concerned about their need to contribute to deciding what is to be done (Lippitt, 1940). The primary difference between authoritarian and democratic leadership can be seen in the amount of granted participation,



that is, the control group members have over the decision-making process and their actions (Bass, 1990; Yukl, 1998).

### **2.2.2 Leadership Evaluations**

At least in Western societies, a general aversion to authoritarian leadership has been found in a number of studies. For example, Nielsen and Miller (1997) reported that even groups starting with a dictatorial decision rule nearly always reverted to a democratic rule, regardless of their performance quality. Research on social dilemmas showed that group members generally refuse to assign an authoritarian leader to solve conflicts over public goods or public resources. For example, Samuelson and Messick (1986) found that group members preferred to divide resources equally among themselves to avert a resource crisis rather than letting a leader make the decisions. Rutte and Wilke (1985) reported that group members preferred solving a collective resource threat through democratic solutions, such as consensus or majority rules voting, rather than through autocratic leadership. Consistently, Van Vugt and De Cremer (Van Vugt & De Cremer, 1999, Experiment 1) showed that after they repeatedly failed to provide a public good through voluntary contributions group members chose a democratic rather than an authoritarian leader to improve their group performance.

Strongly related to research on authoritarian and democratic leadership are studies from the fairness literature that manipulate whether participants are or are not allowed to voice their opinion in a decision making process (e.g., Folger, Rosenfield, Grove, & Corkran, 1979; Van den Bos, Lind, Vermunt, & Wilke, 1997). Granting voice has often been found to cause positive reactions, whereas denying voice leads to negative feelings and dissatisfaction. Procedural justice theorists proposed two different explanations of voice effects: A number of theorists suggest that the act of expressing voice conveys a symbolic, value-expressive meaning and is psychologically rewarding regardless of outcomes (e.g., Folger, 1993; Lind, Kanfer, & Early, 1990; Tyler & Lind, 1992; Van den Bos, 2001). Thus, a democratic leadership style may communicate more appreciation and respect to group members compared to an autocratic style (Tyler & Lind, 1992). According to an instrumental perspective (Leventhal, Karuza, & Fry, 1980; Thibaut & Walker, 1975), individuals wish to have the opportunity to express their opinion because they believe that having voice increases their control over outcomes of the decision. Hence, they believe that outcomes are more likely to be favorable for them. Thus, having some input into the decision-making process may lead to better personal outcomes than having no input at all (Thibaut & Walker, 1975).

Consistently, leadership evaluations often distinguish between work satisfaction and outcome. A number of studies reported differential evaluations of authoritarian and

democratic leadership depending on the dimension to be judged. In one of the most famous leadership studies, Lewin, Lippitt and White (1939; White & Lippitt, 1953) investigated the effects of an authoritarian, democratic, or laissez-faire leadership style on groups of pupils. Groups led by an authoritarian teacher showed much more discontent, hostility, and aggression than democratically led groups, they were slightly more productive in completing various group tasks. Neuberger (1972) analyzed 30 experimental studies of authoritarian and democratic leadership and found a clear predominance of democratic leadership regarding satisfaction. Results regarding outcomes were not that clear, both leadership styles led to better outcomes in different studies or there were no differences. The results are summarized in Table 1.

Table 1. *Number of studies in which the authoritarian leadership style, the democratic leadership style or none of both prevailed when differentiated by satisfaction and outcome (Neuberger, 1972)*

	Predominance of		No Difference between
	Authoritarian leadership	Democratic leadership	Authoritarian and Democratic Leadership
Satisfaction	6	17	5
Outcome	9	8	6

In their meta-analysis, Miller and Monge (1986) analyzed the correlations of participation with satisfaction and productivity scores differentiating between laboratory and field studies. They found a relatively high positive correlation between participation and satisfaction ( $r = .38$ ) with a higher correlation for laboratory than field studies ( $r = .46$  and  $r = .16$ , respectively). The authors explain the difference between the laboratory and field studies by higher internal validity -that is control over extraneous variables- of the laboratory studies. In field studies the effect of participation on satisfaction may be diluted by other organizational influences. The overall correlation between participation and productivity was lower ( $r = .11$ ). The differentiated analysis showed for laboratory studies a negative ( $r = -.33$ ) and for field studies a positive correlation ( $r = .27$ ). Miller and Monge (1986) argue that the substantial difference between laboratory and field studies in regard of productivity can be attributed to differential task complexity. Whereas tasks in laboratory studies typically are simple and well-defined manipulated, tasks in field studies typically are more complex and might therefore require more participation to solve.

In summary, most of the studies to contrast authoritarian and democratic leadership, the democratic leadership style led to a better group atmosphere and higher satisfaction ratings. Regarding productivity and outcome results were not that clear (for an overview see Bass, 1990). Consistently, one can distinguish between follower's evaluations of leadership valence (pleasant/unpleasant) and success (success/failure), that is, do followers *like* a leader and do they *believe* a leader to be successful. In a similar vein, Hogg (2007) stated

“How do we evaluate leaders and leadership...? In answering this question it is useful to distinguish between the two evaluative dimensions of effective/ineffective leaders and good/bad leaders.” (p. 717).

These two dimensions of evaluation do not have to coincide, a liked leader might be seen as ineffective and an unliked leader might be seen as very successful. Such mixed patterns have also been found in the domain of social perception for stereotype content. Fiske, Cuddy, Glick and Xu (2002) distinguished between a warmth and a competence dimension for stereotype content and found frequent mixed clusters for certain out-groups that combined high warmth with low competence (e.g., housewives) or high competence with low warmth (e.g., business women).

### 2.2.3 Leadership Evaluations as Attitudes

Leadership evaluations can be conceived as attitudes with different components: valence and success. Thomas and Znaniecki (1927) posited that the field of social psychology is the study of attitudes because attitudes determine the actual and potential responses of a person in the social world. A broad variety of attitude definitions has been proposed. According to Allport's (1936) definition “An attitude is a mental and neural state of readiness, organized through experience, exerting a directive or dynamic influence upon the individual's response to all objects and situations with which it is related” (p. 810). From a *tripartite perspective*, evaluative responses to certain attitude objects can be categorized into affective, cognitive and behavioral reactions (e.g., Katz & Stotland, 1959; Rosenberg & Hovland, 1960; Smith, 1947). Rosenberg and Hovland (1960, pp. 3-4) defined the *affective component* as expressions of liking or disliking, i.e. the favorable or unfavorable feelings one has towards an attitude object. Ostrom (1969) used the term “gut reactions” to describe these emotional and physiological reactions. The *cognitive component* contains the believed desirable and undesirable qualities of an attitude object, thus, the perceptions, concepts, and beliefs about an attitude object. The *behavioral component* encompasses supportive or hostile action tendencies in past or future actions. While theory hypothesizes a high overlap of these three components, each component is expected to have its own unique determinants (Insko & Schopler, 1967; M. J. Rosenberg & Hovland, 1960). A more contemporary view conceptualizes attitudes as “unidimensional summary statements” (Thompson, Zanna, & Griffin, 1995, p. 362). Eagly and Chaiken (1993), for example, defined an attitude as “a psychological tendency that is expressed by evaluating a particular entity with some degree of favour or disfavour” (p. 1). In their *multi-component model* of attitudes, they state that attitudes are overall evaluations of stimuli that are derived, but are conceptually separable from its affective, cognitive and/ or behavioral bases (Eagly & Chaiken, 1993; Zanna & Rempel, 1988). Following these assumptions, summary attitudes toward authoritarian and

democratic leaders can be drawn from an affective and/ or a cognitive component. Valence judgments of leadership (pleasant vs. unpleasant) can be conceived as reflecting the affective, success evaluations (success vs. failure) as reflecting the cognitive attitude component.

Attitude components do not have to be consistent. They can be ambivalent to the extent that the summary evaluation includes both positive and negative evaluations that are in conflict with each other (Eagly & Chaiken, 1998; Kaplan, 1972; Katz & Hass, 1988; Olson & Zanna, 1993; Thompson et al., 1995). Attitudinal ambivalence is understood as the evaluative tension associated with this conflict and is assessed by asking whether a person feels mixed or torn about the attitude object (Priester & Petty, 1996). Intra-attitudinal ambivalence results from a conflict within one attitude component, for example between positive and negative beliefs, or positive and negative emotions. Inter-component ambivalence results from a conflict between different attitude components, for example between affect and cognition, or between the overall attitude and one of the components (see Chaiken, Pomerantz, & Giner-Sorolla, 1995). The stability of an attitude over time, its resistance to change, and its predictive value of behavior are determined by attitude strength. Attitude strength, in turn, is amongst other factors influenced by non-ambivalence (e.g., Eagly & Chaiken, 1995). Thus, diverging evaluations of leadership in regard of the valence and success dimensions can lead to ambivalent summary evaluations with decreased attitude strength making them prone to attitude change.

### **2.2.3.1 Stored Evaluations or Temporary Constructions?**

In the present dissertation it is argued that the authoritarian reaction to uncertainty is reflected by changes in the evaluations of authoritarian and democratic leaders. Thus, the key question is, whether attitudes can be changed by temporary context cues. Traditionally, attitudes have been conceptualized as global evaluations that can be accessed from memory and persist over time. Sherif and Cantril (1947), for example, stated that “attitudes, once formed, are more or less enduring states of readiness” (p. 22). According to Allport (1935) “attitudes are often as rigid as habits” (p. 813) and “often persist throughout life in the way in which they were fixed in childhood or youth” (p.814). Moreover, Tesser (1993) found a large heritable component in some attitudes that makes them especially resistant to change.

Some researchers, however, view attitudes as temporary constructions that are created “on-the-spot”, i.e. on the basis of information accessible at the moment individuals are asked to make attitudinal judgments (e.g., Bem, 1972; Schwarz, 2001; Wilson & Hodges, 1992). According to this attitude-as-construction perspective not all potentially relevant information, but only a subset is retrieved from memory in a given situation (e.g., Bodenhausen & Wyer, 1987; Wyer & Srull, 1989). Whether particular information is retrieved

depends on its accessibility in memory. Higgins (1996) defined accessibility as “the activation potential of available knowledge” (p. 141) which is determined by a number of factors such as inherent salience of an information, the frequency and recency of prior activation as well as the strength and number of corresponding associations (e.g., Higgins, 1996).

Therefore, attitudes are to some extent dependent on the information temporarily accessible in the specific situation (for reviews see Lord & Lepper, 1999; Schwarz & Bless, 1992; Tesser, 1978; Tourangeau & Rasinski, 1988; Wilson & Hodges, 1992). An extensive and growing body of research provided empirical support showing that attitudes can be inferred from different information such as observations of one’s own behavior (e.g., Bem, 1972; Fazio, 1987), bodily states (e.g., Cacioppo, Priester, & Berntson, 1993; Laird, 1974; Strack, Martin, & Stepper, 1988), current thoughts and feelings (e.g., Chaiken & Yates, 1985; Judd & Lusk, 1984; Millar & Tesser, 1986 a,b; Wilson & Hodges, 1992), goals (e.g., Shavitt, Swan, Lowrey, & Wanke, 1994), mood (e.g., Forgas, 1995; Petty, Schumann, Richman, & Strathman, 1993; Schwarz & Clore, 1983), standards (e.g., Brown, Novick, Lord, & Richards, 1992; Kenrick, Gutierrez, & Goldberg, 1989; Strack, Schwarz, Chassein, Kern, & Wagner, 1990), and the nature of social context (e.g., Feldman & Lynch, 1988; Schwarz & Bless, 1992; Strack, 1992; Tourangeau & Rasinski, 1988).

These research results strongly argue for the notion that attitudes can be changed by temporary context cues. Thus, the authoritarian reaction to uncertainty can be reflected by changes in leadership evaluations.

#### **2.2.4 Summary and Conclusions**

The main difference between the authoritarian and democratic leadership can be seen in the amount of granted participation. In its extremity authoritarian leadership represents a clear hierarchy, whereas democratic leadership is characterized by granting voice in important decisions. In Western societies democratic leadership is associated with many positive attributes and feelings whereas authoritarian leadership is linked with strongly negative characteristics. Leadership evaluations often distinguish between work satisfaction and outcome. As satisfaction and outcome do not always converge it seems useful to distinguish between the two dimensions of valence (pleasant/ unpleasant) and success (success/ failure) in leadership evaluations. The valence dimension can be conceived of as affective, the success dimension as cognitive attitude component. Conflict within and between these components leads to attitude ambivalence that makes the attitude prone to change. Originally, attitudes were conceived as persistent entities, resistant to change. Although some attitudes seem to be quite stable over time a wide range of studies found that attitudes are at least to some extent dependent on the information temporarily accessible in the specific situation. In the present dissertation the effects of temporary uncertainty on evaluations of

authoritarian and democratic leadership are investigated on an affective valence and a cognitive success dimension.

## **2.3 Uncertainty – The Situational Precondition**

Times of terrorism, political and economic crises, national conflicts, rapid changes, and unpredictable social interactions are enormous threats individuals all over the world have to cope with. Despite the fact that these threats are of very different kinds, in the present dissertation it is hypothesized that they have one feature in common, that is, they induce feelings of uncertainty. The present section starts out with a definition of the concept of uncertainty (2.3.1). It is explicated why uncertainty resolution is conceived as a primary human motive and different strategies to resolve uncertainty are presented (2.3.2). Subsequently, a theoretical model of the processes that take place in the individual under uncertainty is addressed (2.3.3). The section closes with a summary of research findings and a discussion of their relevance for the present dissertation (2.3.4).

### **2.3.1 The Concept of Uncertainty**

A variety of different uncertainty definitions exists that will be summarized in the following. Influenced by cognitive models such as expected utility theory (for an overview, see Harless & Camerer, 1994; Luce & von Winterfeldt, 1994), research on behavioral decision making and game theory judgment assumes that the decision-making process is mainly determined by the cognitive task of judging possible outcomes and weighing them according to their likelihood of occurring. Uncertainty is conceived of as probabilistically determined events, i.e. an outcome is uncertain when only probabilities are available in a decision making process instead of determined (certain) outcomes (Tversky & Kahneman, 1974). Besides anticipated emotions associated with the occurrence of outcomes, affective components are mostly neglected in these utility approaches.

A more psychological view on uncertainty includes the *subjective feeling* of lacking sufficient information to judge a situation, even if this information objectively may exist outside the person's perception (and by this the situation is objectively deterministic). In an extension of decision making theory, Loewenstein, Weber, Hsee, and Welch (2001) argue that individuals react to the prospect of risk with anticipatory emotions such as fear, anxiety, or dread experienced in the immediate presence of the decision making process. They refer to Peters and Slovic's (1996) distinction between two "psychological" dimensions of risk: (a) the dread that risk induces by the perceived lack of control and (b) the unknown risk of potential harmful impacts. Kagan (1972) conceives uncertainty in terms of a cognitive conflict, dissonance or disequilibrium. According to his view, uncertainty can be induced by an event in the presence that is discrepant to prior expectations or an event in the future that

is unpredictable. Thus, sources of uncertainty can be the incompatibility between cognitions, cognitions and experiences, and cognitions and behavior in a given situation or the unpredictability of events in the future. The latter is especially aversive when negative events are expected such as penalty, harm, failure, or rejection. Kagan (1972) assumes that feelings of uncertainty are accompanied by a physiological state of alertness and not resolving uncertainty can lead to a strong negative affect such as distress, anxiety, fear, shame, or guilt.

According to Hogg (2000), self-uncertainty is especially aversive because it is accompanied by reduced control over one's life. The self is conceived of as the organizing structure that directs all of one's thoughts, feelings and behaviors. Uncertainty arises when subjectively important aspects of one's life are in question, that means uncertainty about attitudes, feelings, perceptions, and behaviors that are important for the sense of self. In consequence, the need for self-certainty is fundamental because it represents the means of gaining control over one's life.

Van den Bos and Lind (2002) refer to Kagan (1972) and assume that feelings of uncertainty, doubt or confusion are provoked by the confrontation with inconsistent cognitions, experiences and behaviors or by the inability to predict the future. In order to manipulate uncertainty experimentally Van den Bos (2001) asked participants to answer the following two questions: (1) "Please briefly describe the emotions that the thought of your being uncertain arouses in you" and (2) "Please write down, as specifically as you can, what you think physically will happen to you as you feel uncertain".

Following Baumeister (1985), McGregor, Zanna, Holmes, and Spencer (2001) conceived of personal uncertainty as "an acute kind of identity crisis that can arise from awareness of having inconsistent or unclear self-relevant cognitions" (p. 473). Accordingly, they induced self-relevant uncertainty by asking participants to think of a complex personal dilemma about which they had not already decided whether they should keep or change the status quo. Participants were instructed to give a short description of the dilemma, to deliberate about advantages and disadvantages as well as alternative possible selves associated with both poles of the dilemma.

The present work follows a psychological conception of uncertainty and encompasses both cognitive and affective components of uncertainty. In order to meet this broad definition, the experimental studies of the present research described below (see Study 3b and Study 4b) draw on the manipulation of uncertainty introduced by Van den Bos (2001).

### **2.3.2 Uncertainty Resolution as a Primary Human Motive**

The literature cited above argues that in most cases uncertainty is aversive, especially when it is self-relevant. It has been claimed that resolving uncertainty is one of the most basic

human needs. On the basis of experimental studies and clinical observations Maslow (1954) developed a theory about the structure and dynamic of human needs. He distinguishes five different categories: physiological, security, belongingness, esteem, and self-actualization needs. This concept of content structure is combined with a concept of dynamic force. That is, he proposed a hierarchical order of need actualization, assuming that elementary needs take effect at first and contents of next higher levels only become relevant when needs of the preceding steps are satisfied. The need for security directly follows after the physiological needs and occupies a very basic position in the hierarchy that makes the resolution of uncertainty primary to all higher needs.

Festinger (1954) stated in his social comparison theory that there is a “motivation to know that one’s opinions are correct and to know precisely what one is and is not capable of doing” (p. 217), implying that individuals are driven to evaluate their abilities and opinions and strive for maximizing certainty and minimizing uncertainty. He argues that knowing one is correct is a critical human motive that drives interpersonal social comparison when non-social means are not available. Consistently, Kagan (1972) proposes that uncertainty resolution is a primary human motive and that uncertainty is an alerting state that elicits reorganization processes in the cognitive structure aimed at its resolution. He argues that very different secondary motives such as achievement, affiliation, dominance, or dependency (Atkinson, 1958; H. A. Murray, 1938) can be in the service of the fundamental strive for uncertainty resolution. For example, in some individuals, the dependency motive will be activated when uncertainty is present, whereas in others the dominance motive will be aroused. Which one is chosen is determined by the situation on the one hand and the personal characteristics on the other.

In his uncertainty reduction hypothesis Hogg (2000) proposes that individuals perceive subjective uncertainty as aversive, strive to reduce feelings of uncertainty, and use group identification as means to reduce uncertainty. He bases his assumptions on social identity theory (e.g., Tajfel & Turner, 1979) and self-categorization theory (e.g., Turner, Hogg, Oakes, Reicher, & Wetherell, 1987). Consistently he argues that the process of self-categorization, that is, joining and identifying with groups, is an effective way to reduce uncertainty about oneself and about feelings, thoughts, and behaviors that relate to self and to interactions with others. Assimilation of self to an in-group prototype defines the self and prescribes feelings, thoughts, and behaviors, as well as specifies and regulates the course of interaction with in-group and out-group members and by this reduces uncertainty about how to feel, think and behave. At the same time, prototypes are relatively consensual, and –as a consequence- the (physically or cognitively present) other group members reduce uncertainty by validating one’s world view and self-concept. In consequence, the main prediction of Hogg’s (2000)



uncertainty reduction hypothesis is that under uncertainty individuals are more likely to identify with groups.

In their uncertainty management model, Van den Bos and Lind (2002) proposed fairness judgments as an important means to reduce and to cope with uncertainty because fairness promotes predictability and controllability in social interactions (see also Lind & Van den Bos, 2002). Similarly to Hogg's (2000) model it is assumed that social integration reduces uncertainty and that justice judgments provide the information about one's integration and one's status in a group.

McGregor and colleagues (2001) argue that one strategy to reduce uncertainty is compensatory conviction, that is, individuals cope with personal uncertainty by spontaneously emphasizing certainty and conviction about unrelated attitudes, values, personal goals, and identifications. The authors found that focusing on a self-consistent set of values and personal goals effectively reduced feelings of uncertainty.

Uncertainty is also an important motivational construct for communication theories. Uncertainty in interpersonal communicative contexts is maladaptive and can produce negative reactions. According to Berger and Calabrese (1975), uncertainty is a function of the ability to predict and to explain actions of self and others. Another person can feel, think and behave in a variety of alternative ways. For a successful interaction, it is important to predict how an interaction partner is likely to behave and to choose from one's repertoire those responses that will optimize the communication outcomes. Individuals communicate to reduce uncertainty, and effective communication requires interpersonal certainty (e.g., Berger, 1987).

Moreover, uncertainty plays a role in organizational socialization theories (e.g., Lester, 1987; Saks & Ashforth, 1997). During their entry in an organization, newcomers experience high levels of uncertainty. They are motivated to reduce this uncertainty by seeking information from superiors and peers that renders the work environment more predictable and controllable. In specific, newcomers' uncertainty concerns predicting one's own success or failure in the organization and what specific action out of possible behavioral alternatives will be rewarded or punished by superiors.

Thus, many different ways to cope with uncertainty have been proposed. Which strategy is chosen depends on the individual and the specific situation. In the following a model of the general processes underlying the resolution of uncertainty is introduced that is the basis for the main hypotheses of the present dissertation.

### **2.3.3 Underlying processes of Uncertainty Resolution**

Theories of social cognition propose that uncertainty affects information processing by motivating more effortful cognitive processes. Festinger (1954), for example, argued that

individuals engage in social comparisons when they feel uncertain about themselves. Extending Festinger's argument, Pelham and Wachsmuth (1995) propose that individuals uncertain about their self-views engage in more systematic processing when making social comparisons. Early attribution theorists argued that uncertainty engenders a careful elaboration of the causal structure of events (Heider, 1958; Kelley, 1973), because "man grasps reality and can predict and control it, by referring transient and variable behavior and events to relatively unchanging conditions, the so-called dispositional properties of the world" (Heider, 1958, p. 79).

Also, dual process theories of attitude change emphasize the importance of certainty because in their pursuit of different motivations, namely accuracy, impression, and defense motivation, individuals follow a sufficiency principle when processing information (Chaiken, Liberman, & Eagly, 1989). Motivation determines the threshold of desired judgmental confidence and the perceived difference between the current and the desired level of confidence determines the degree of cognitive elaboration. Individuals will spend only as much cognitive effort as is required to satisfy goal-related needs, as defined by the three motivation types (least effort principle) and will spend whatever cognitive effort is required to attain a sufficient level of confidence to accomplish goals (sufficiency principle). The feeling of certainty, then, functions as an internal cue that no further processing is necessary (also see Mackie, Asuncion, & Rosselli, 1992). Consistently, Edwards and Weary (1993) assume that the finding that information is processed more systematically by depressed individuals is attributable to a lack of confidence in their own judgments (also see Gleicher & Weary, 1991; Weary, 1990).

Weary and Edwards (1996) extended their assumptions about depressives to individuals that feel causally uncertain in general. They conceive causal uncertainty as a special case of a more general form of uncertainty. In their model of causal uncertainty resolution Weary and Edwards (1996) distinguish between causal uncertainty beliefs and causal uncertainty feelings. *Causal uncertainty beliefs* are defined as "generalized self-constructs about one's uncertain or inadequate understanding or detection of causal relations in the social world" (Weary & Edwards, 1996, p.159). The authors propose individual differences in the accessibility of these beliefs and argue that some individuals have *chronic* causal uncertainty beliefs due to frequent perceptions of loss of control (e.g., depressives). In addition, causal uncertainty beliefs can be *temporarily* activated in most individuals by situational factors such as situational expectancies of a loss of control, task instructions or contextual priming. According to Weary and Edwards (1996) chronically accessible causal uncertainty beliefs require less excitation from situational input to become active, and their activation in response to such information is automatic. Once activated, these beliefs induce *meta-cognitive feelings of uncertainty* such as surprise, bewilderment, or

confusion (Clore, 1992) that alert individuals that their knowledge is insufficient to cope with a situation or to achieve a goal. The goal to accurately understand causal relations is developed by social learning processes of effective and ineffective transactions with the social world. This *accuracy goal* is represented as a desired state in memory and is activated by the described cognitive feelings of uncertainty. A “*comparator*” determines the discrepancy between the current state and the desired state of causal certainty and activates, besides negative depressed, or anxious feelings, action plans to reduce uncertainty and the related negative affect. Affect is assumed to function as a cue for the degree of goal attainment and influence the comparator via a negative feedback loop. *Action plans* are designed to reduce uncertainty and involve an effortful, deliberative, intentional search for and processing of available social information that might render the social environment more understandable, predictable and controllable. Activation of these accuracy-motivated strategies can be conscious or relatively automatic depending on frequency of prior activation. Whether and which action plan will be actually undertaken is determined by an “*outcome expectancy assessor*”. This cognitive mechanism assesses the expectancies of action plans to be successful in regard of goal attainment by processing information about the current context and past actions in particular contexts. A simplified version of Weary and Edwards’ (1996) model is presented in Figure 1.

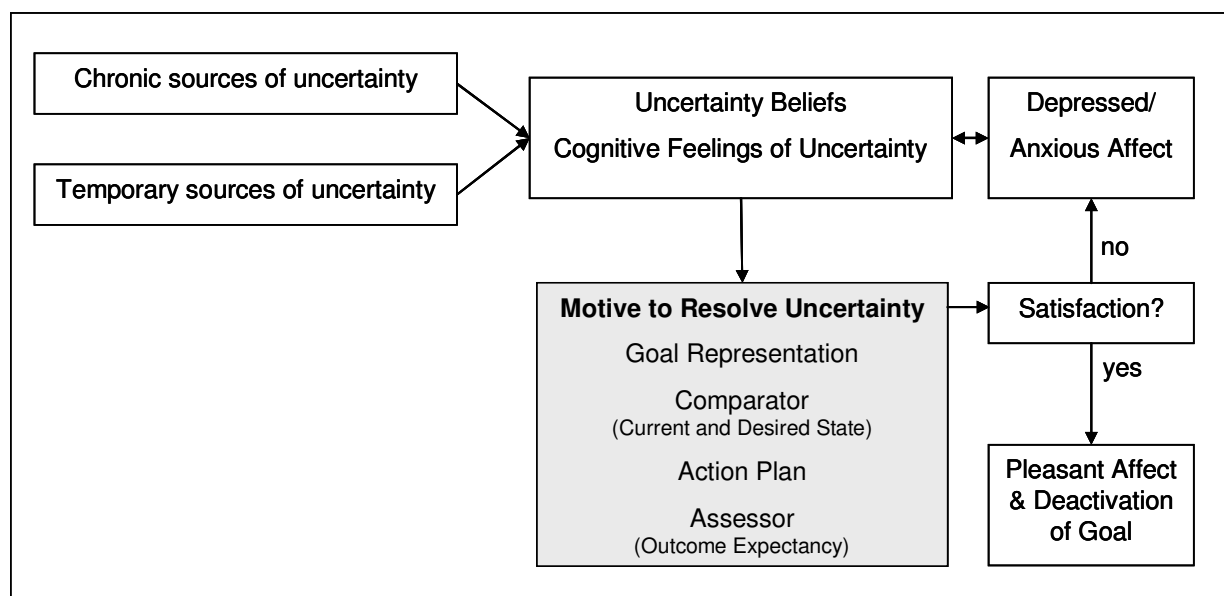


Figure 1. Causal uncertainty model adapted by Weary and Edwards (1996, p.153).

In accordance to the causal uncertainty model, Weary and Jacobson (1997) demonstrated that individuals who feel chronically uncertain process information more systematically than chronically certain individuals. In addition, Weary, Jacobson, Edwards, and Tobin (2001) found that chronic and temporarily induced causal uncertainty beliefs led to

more effortful processing of individuated information rather than stereotype usage on target judgments compared to control conditions. Thus, certainty promoted lower, whereas uncertainty promoted higher cognitive elaboration.

### **2.3.4 Summary and Conclusion**

Research demonstrated that uncertainty is mainly aversive and activates the motive of its resolution. Uncertainty can be elicited by a variety of contextual factors that challenge self-certainty. As uncertainty often stems from the physical and social environment, nearly everyone is prone to subjective feelings of uncertainty. It has been argued that the need for security and uncertainty resolution are fundamental and primary. Reducing uncertainty can take many different forms such as the employment of secondary motives, the striving for social integration and group identification, or compensatory conviction. According to Weary and Edwards' (1996) model which strategy is employed depends on the expectancy that it will be successful in uncertainty reduction. Drawing on this model, in the present dissertation it is assumed that uncertainty leads to a weighing process of the different expectancies of action plans to be successful in regard of uncertainty reduction. It is hypothesized that this process is responsible for the authoritarian reaction.

## **2.4 Self-Esteem – The Individual Predisposition**

In section 2.1.2 it is proposed that threat does not increase everyone's authoritarianism but interacts with individual predispositions to result in an authoritarian reaction. Stenner (2005) argues that in low threatening situations individuals should not differ in their democratic positions, but they will "sharply diverge" (p. 323) under threat. According to the sufficiency principle (Chaiken et al., 1989), individuals process information as extensively as necessary in a given situation. Under conditions of certainty there is no need to exhibit high cognitive elaboration and, therefore, individuals in general should rely on pre-existing standard beliefs and values. Under uncertainty, however, the motive to resolve uncertainty is activated and individuals engage in a process of weighing expectancies of different action plans to be successful in uncertainty resolution (Weary & Edwards, 1996). It can be argued that this is the critical process in which individuals can differ from one another.

This process can be generalized in an expectancy-value model (e.g., Vroom, 1964). The motivation (force) to perform a certain behavior (*action plan*) is determined by (a) the expectancy that one is able to perform a desired behavior and (b) the belief that this behavior leads, in turn, to a certain outcome (both considered by the *outcome expectancy assessor*), as well as by the value ascribed to this outcome (*comparator of current and desired state*). Thus, there are three questions to be answered: (a) Do I believe that I can successfully perform a behavior? (b) Will the successful performance of the behavior actually lead to

uncertainty reduction? and (c) How strong is my desire for uncertainty reduction? The first two of the three components (a) and (b) are beliefs regarding behavior and outcomes that are conceptually distinct but can be combined to the variable of “Expectancy”. The third component (c) describes the motivational “Value” of the outcomes associated with the behavior. The motivation (force) to perform a behavior (action plan), then, is a multiplicative function of the resulting expectancy and value:  $F = f[\sum(E \times V)]$ .

The expectancy (a) that one is able to perform a certain behavior is high when a person has a *feeling of confidence* that is the subjective sense of conviction about one’s beliefs, opinions and by this about one’s behaviors (Gross, Holtz, & Miller, 1995; Petty, Briñol, Tormala, & Wegener, 2007). The expectancy (b) that a behavior will elicit certain outcomes is high when a person has a *feeling of control* that is the belief that one can affect things and change outcomes or situations in predictable ways (Langer, 1975; Tan & Lipe, 1997; Thibaut & Walker, 1975; Thompson, Armstrong, & Thomas, 1998). The repeated exposure to uncontrollable outcomes can cause individuals to believe that action and outcome are independent -a belief that can lead to the phenomenon of learned helplessness (Seligman, 1975), that is individuals perceive that they also cannot control other important outcomes and show decreased effort in subsequent situations. Confidence and control are related in that both seem to be reassuring and to promote feelings of being an effective actor in one’s social context (Spreitzer & Mishra, 1999).

The crucial individual difference variable for the perceived amount of confidence and control is self-esteem (Leary & Baumeister, 2000). Whereas individuals with high self-esteem (high SEs) perceive high levels of confidence in and control over their actions, individuals with low self-esteem (low SEs) perceive a lack of both (Brockner et al., 1998; Greenberg et al., 1997; Greenberg, Solomon, & Pyszczynski, 1997; Heatherton & Polivy, 1991; Koper, Van Knippenberg, Bouhuijs, & Vermunt, 1993; Leary & Baumeister, 2000; Rosenberg, 1979; Smith & Tyler, 1997). In consequence, the expectancy that one is able to successfully perform an action plan and that this performance will actually reduce uncertainty should be stronger for high than low SEs. In the present dissertation it is hypothesized that these differential expectancies cause differential reactions to uncertainty reflected by changes in leadership evaluations. High SEs are assumed to become more democratic, whereas low SEs are expected to become more authoritarian.

This section starts out by reviewing research on the general differences between high and low SEs (2.4.1). Second, research on differential reactions to voice of high and low SEs is addressed (2.4.2), and third, research that found differences on affective and cognitive measures due to different self-esteem levels is considered (2.4.3). The section closes with a summary and conclusions for the present research project (2.4.4).

### 2.4.1 High versus Low Self-Esteem

One of the most significant personality dimensions in which individuals differ from one another is the trait of self-esteem. Although a variety of definitions of self-esteem exists, most agree that this trait refers to the individuals' degree of liking or disliking of themselves. Thus, the essence of self-esteem is the evaluative component of the self and "a self-reflexive attitude that is the product of viewing the self as an object of evaluation" (Campbell & Lavalley, 1993, p.4). Individuals derive their self-views by observing how others behave towards them (e.g., Cooley, 1902; Mead, 1934), their own behavior (e.g., Bem, 1972), and how others perform in comparison to them (e.g., Festinger, 1954).

A number of studies demonstrated that differences in self-esteem have implications for various psychological, social, health, and well-being outcomes throughout the life span (Harter, 1999). Several prospective studies conducted with children, adolescents, and young adults found that low self-esteem increases the probability of a wide range of unfavorable outcomes and experiences such as depression, eating disorders, teenage pregnancy, victimization, problems with and in close relationships, antisocial behavior, substance use, and suicide (for reviews, see DuBois & Tevendale, 1999)(for reviews, see DuBois & Tevendale, 1999; Emler, 2001). Two recent longitudinal studies that controlled for methodological problems criticized in previous research (Baumeister, Campbell, Krueger, & Vohs, 2003) showed that low self-esteem predicted depression, anxiety disorders, tobacco dependence, criminal convictions, dropping out of school, money and work problems (Donnellan, Trzesniewski, Robins, Moffitt, & Caspi, 2005; Trzesniewski et al., 2006). Similarly, intervention programs designed to improve self-esteem positively affected not only self-esteem but also standardized test scores, and negatively the number of disciplinary school reports, as well as the amount of drug and alcohol use (e.g., DuBois & Flay, 2004; Haney & Durlak, 1998)). Improvements in self-esteem also appear to contribute to the effectiveness of a range of other types of interventions, such as cognitive-behavioral therapy (Shirk, Burwell, & Harter, 2003), mentoring programs (Rhodes, 2002), and school reform initiatives (Cauce, Comer, & Schwartz, 1987). Thus, self-esteem is an important variable that predicts more problematic outcomes in various domains for low SEs than for high SEs.

High SEs differ from low SEs in the way they think, feel, and behave. Whereas high SEs encompass a positive self-view (Baumeister et al., 2003; Ross & Wilson, 2002; Wilson & Ross, 2001), are optimistic (e.g., Scheier, Carver, & Bridges, 1994; Taylor & Brown, 1988) and believe that they are superior to others in many domains (Brown, 1986), low SEs hold a negative attitude toward themselves (Baumeister, 1993; Heatherton & Polivy, 1991; Rosenberg, 1979) . Their self-concepts are more uncertain, incoherent and fluctuating (Baumeister, 1993; Campbell & Lavalley, 1993) and they are less self-confident than high

SEs, especially following an initial failure (McFarlin & Blascovich, 1981). As low levels of perceived expertise, competence, or confidence in any domain substantially increase one's susceptibility to external influence in that domain (e.g., Campbell, Tesser, & Fahey, 1986), Brockner (1983) argues that low SEs are more susceptible to external cues and social influence than high SEs.

It is noteworthy that ratings on self-esteem scales typically show skewed distributions with average scores above the midpoint (Baumeister, Tice, & Hutton, 1989). Thus, the majority of individuals classified as low SEs can only be interpreted as relatively but not absolutely low. Only a small minority (e.g., depressives) thinks of themselves as being worthless, most individuals describe themselves in intermediate or positive terms.

### **2.4.2 Self-Esteem and Voice**

As already pointed out in chapter 2.2.2 the concept of voice is strongly related to the distinction of authoritarian and democratic leadership. Voice is defined as "the extent to which people are allowed to provide input in the decision process" (Brockner et al., 1998, p.394) and the main difference between authoritarian and democratic leadership is the amount of participation granted by the leader (Bass, 1990).

Brockner and colleagues (1998) investigated whether high and low SEs are differentially influenced by perceived levels of voice. The authors found in four field studies and one laboratory experiment that voice was more positively related to various dependent variables among high SEs than low SEs. The field studies examined the interactional impact of voice and self-esteem on the organizational support of job layoffs' survivors, on organizational identification after a major cost-cutting initiative, and on satisfaction with interpersonal encounters. In the laboratory experiment beliefs about one's capability to provide meaningful input and the opportunity of voice were experimentally manipulated and their effect on the satisfaction with the decision reached was assessed. All five studies provided converging evidence that self-esteem had a moderating influence on voice perceptions. The laboratory study, in addition, suggests that the responsible factor for the moderating influence of self-esteem on voice is the belief about one's capability of providing meaningful input.

Brockner and colleagues (1998) draw on expectancy theory (Vroom, 1964) in order to explain their results. They argue that individuals who are more confident that they are capable of providing input in the decision making process and that their input will lead to important and valued outcomes should be more motivated to have voice. Brockner (1988) showed that high SEs are more confident about their viewpoints and their actions than low SEs who do not believe that their own behavior makes a difference. Consistently, Brockner and colleagues (1998) argue that high SEs are more confident in their capability to provide

meaningful input in a decision making process and that they are therefore more motivated to have voice. This motivation was reflected by the result that the perceived level of granted voice had a greater and more positive impact on high SEs than on low SEs.

### 2.4.3 Self-Esteem and Affective and Cognitive Measures

The study by Brockner and colleagues (1998) illustrates the important role of self-esteem as a moderating influence on voice that in turn is closely related to authoritarian and democratic leadership. Research on the motives of self-enhancement and self-verification demonstrated that the individual-difference variable of self-esteem not only influences reactions to voice but also leads to differential effects on different affective and cognitive measures.

*Self-enhancement theory* argues that individuals wish to feel good about themselves and therefore seek positive evaluations from others (Jones, 1973; M. B. Smith, 1968). They desire to maintain, protect and enhance the positivity of their self-esteem (for an overview, see Baumeister et al., 1989; Leary, 2007). According to *self-consistency theory*, on the other hand, individuals are motivated to maintain consistent attitudes about themselves (Swann, 1983). They seek evaluations that match and confirm their self-views (their thoughts and feelings about themselves) because self-views provide a means to organize experiences in a coherent way, to predict future events and to guide behavior (cf. Lecky, 1945).

According to Blaine and Crocker (1993) the main difference between these two theories lies in their predictions regarding high and low SEs' preferences for evaluative feedback. For high SEs, both self-enhancement and self-consistency coincide. As they hold a positive self-view, they prefer positive feedback that is simultaneously self-enhancing and self-consistent. In contrast, for low SEs these motives conflict. According to their self-enhancement motive they desire and seek positive feedback, but as they hold a negative self-view they only believe in neutral or even negative feedback that is consistent with their self-view. Shrauger (1975) proposed that this conflict between *feelings* and *thoughts* is reflected on affective and cognitive measures. Consistently, both high and low SEs were found to show greater preference for positive than negative feedback on affective dependent variables such as liking for an evaluator. On cognitive measures such as causal attribution for, memory of, and credibility judgments of evaluative feedback, however, high SEs showed greater acceptance of positive than negative feedback, relative to low SEs (for an overview, see Blaine & Crocker, 1993; Swann, Griffin, Predmore, & Gaines, 1987). Thus, high SEs like and believe positive feedback more than negative feedback, whereas low SEs like favorable evaluations but do not believe that they are accurate and are therefore more inclined to accept negative feedback that is consistent with their self-views.

Brockner and colleagues (1993) again draw an explanation for this phenomenon from expectancy theory (e.g., Vroom, 1964). They argue that low SEs perceive a discrepancy



between what they want and what they expect. Thus, although they desire to feel good and value outcomes that increase their self-esteem, they have low expectations that they will be able to perform these self-enhancing behaviors. Due to these differential motivational and cognitive processes, the desire to feel good leads to self-enhancing tendencies on affective measures, whereas negative expectations lead to self-consistency effects on cognitive measures. In contrast, for high SEs self-enhancement and self-consistency tendencies go together resulting in similar effects on both cognitive and affective measures regardless of the underlying processes.

#### **2.4.4 Summary and Conclusion**

Self-esteem is an important variable that predicts more problematic outcomes in various psychological, social, health and well-being domains for low SEs than for high SEs. Whereas high SEs hold positive self-views, are optimistic and self-confident, low SEs have negative attitudes toward themselves, hold uncertain self-concepts and are less confident of their abilities. Brockner and colleagues (1998) argue that this difference in self-confidence is also reflected in higher expectancies of high SEs than low SEs to provide meaningful input in decision making processes. Consistently, they found that voice had stronger effects on high SEs relative to low SEs. Interestingly, the studies by Brockner and colleagues (1998) were conducted in social contexts that encompass the potential of uncertainty, threat or conflict such as layoffs, cost-cutting initiatives and interpersonal encounters. Thus, high and low SEs might not have differed in their reactions to voice under conditions of certainty.

From these results and Weary and Edwards' (1996) model of uncertainty resolution taken together, it can be hypothesized that under uncertainty different action plans are activated and weight in regard of their expectancy to successfully reduce uncertainty. As uncertainty is aversive for high and low SEs they should both have a strong desire to reduce it. However, as high SEs are more self-confident and have a stronger feeling of control than low SEs, they have a higher expectancy that they can successfully perform the behavior and that their actions make a difference. Under uncertainty high SEs should therefore want to maximize their input and hence prefer a democratic leader. Low SEs, in contrast, do not believe that they can perform an action plan and that their behavior will lead to uncertainty reduction. They should therefore prefer to minimize their input and place the responsibility for decisions on someone else, hence prefer an authoritarian leader. Thus, in the present dissertation it is hypothesized that under uncertainty, high SEs stronger prefer democratic and low SEs stronger prefer authoritarian leadership than under certainty.

Research on self-enhancement and self-consistency motives showed differences between high and low SEs on cognitive but not on affective measures. Both high and low SEs *like* positive evaluative feedback, but whereas high SEs also *believe* in such feedback

low SEs do not because it is inconsistent with their self-views. Democratic leadership (or voice) communicates appreciation and respect (see 2.2.2) and by this satisfies the desire for self-enhancement. On an affective dimension, therefore, both high and low SEs should *like* democratic leadership more than authoritarian leadership regardless of certainty or uncertainty. However, under conditions of uncertainty, only high SEs *believe* that they can successfully reduce uncertainty whereas low SEs do not. As the outcomes of democratic leadership depend per definition on the input of its group members (see 2.2.1), the association between democratic leadership and success should be consistent with the self-view of high SEs, but inconsistent with the self-view of low SEs. Instead, low SEs should believe that it is better to place the whole responsibility on the leader. Due to their differential expectancies to provide meaningful input for uncertainty reduction, high SEs should believe democratic leadership (voice) and low SEs authoritarian leadership (no voice) to be more successful to reduce uncertainty reflected on cognitive success measures. Responses on affective measures are generated differently than responses on cognitive measures as the former draw on feelings and the latter on beliefs. As high and low SEs are not expected to differ in their feelings but in their expectancy beliefs, in line with previous research high and low SEs should differ on cognitive but not on affective measures.

## 2.5 Power – The (Re-) Solution

The first goal of the present dissertation is to unravel the conditions under which individuals prefer authoritarian over democratic leadership. In the sections outlined above, uncertainty and a low level of self-esteem were suggested as situational and individual risk factors for an authoritarian reaction. The next question is: How can the authoritarian reaction of low SEs be prevented? It seems difficult or even impossible to keep individuals from external threats so that anyone is prone to subjective feelings of uncertainty. Thus, uncertainty cannot be circumvented in all situations of life. Global self-esteem is a trait that is quite stable and, therefore, difficult to change (e.g., Baumeister, 1993). However, what might be changed is the process that leads to the authoritarian reaction, above formalized as an expectancy-value model: (a) Do I believe that I can successfully perform a behavior to reduce uncertainty? (b) Will the successful performance of the behavior actually lead to uncertainty reduction? and (c) How strong is my desire to reduce uncertainty?

As uncertainty reduction is a primary motive (see 2.3.2), the desire to resolve uncertainty (value component) should be very strong. Thus, in order to prevent low SEs from their authoritarian reaction one has to enhance their expectancies (a) that they can perform an action plan and (b) that their behavior will lead to uncertainty reduction. In other words, one has to enhance their sense of (a) confidence and of (b) control (see 2.4). “Power may be defined as the production of intended effects” (Russel, 1938, p. 35) or can be understood as

“the basic energy needed to initiate and sustain action. ...the *capacity to translate intention into reality and sustain it.*” (Bennis & Nanus, 1985, p. 17) and by this power provides both feelings of confidence and control. This capacity is not static, but can change from situation to situation (Ellyson & Dovidio, 1985; Thibaut & Kelley, 1959). Galinsky, Gruenfeld, and Magee (2003) suggest that “the concepts and behavioral tendencies associated with power are activated whenever the possession of power is implied, consciously or nonconsciously, in a new situation, or even when an experience with power is simply recalled” (p. 454). Thus, power seems to be a promising candidate for the present purpose of changing the individual’s reactions to uncertainty. In the following, research on effects of power on behavior (2.5.1) and on information processing (2.5.2) is reviewed. The section closes with a summary and conclusions for the present research project (2.5.3).

### **2.5.1 Power and its Impact on Behavior**

Keltner, Gruenfeld, and Anderson (2003) defined power “as an individual’s relative capacity to modify others’ states by providing or withholding resources or administering punishments” (p. 265). Thus, power refers to the ability to influence others and to control their outcomes (Emerson, 1962; Goldhamer & Shils, 1939; Lewin, 1951; Thibaut & Kelley, 1959) through different sources, such as coercion, expertise, authority, referent power, and rewards (French & Raven, 1959). Power can be conceptualized as a continuum with the two opposing poles of lower and higher power relative to the power of others. Powerful individuals have access to resources and by this have control over their own outcomes. They perceive freedom from constraints and can act with their own free will without fearing serious social consequences. Powerless individuals, in contrast, have less access to resources and have to live with social threats, punishments, and the awareness of dependency and constraints (Keltner et al., 2003; Overbeck, Tiedens, & Brion, 2006). Keltner and colleagues (2003), therefore, propose that power is an important determinant of approach and inhibition tendencies. They argue that high power is associated with positive affect, with attention to rewards and opportunities, with automatic information processing, and with disinhibited behavior. Low power, in contrast, is associated with negative affect, with attention to punishment, threat, the interests of others, with controlled, deliberative information processing, and with inhibited social behavior.

Empirical evidence suggests that power increases confidence in one’s thoughts and perspectives. Anderson and Galinsky (2006), for example, showed that individuals with a higher sense of power were more optimistic in perceiving risks and showed more risky behavior. In three experiments Galinsky, Gruenfeld, and Magee (2003) demonstrated that power increased action orientation. Compared to powerless individuals, powerful individuals were more likely to take a card in a simulated game of blackjack, to act against an annoying

stimulus (a fan), and to take action in a social dilemma regardless of consequences. In addition, Galinsky, Magee, Gruenfeld, Whitson, and Liljenquist (2008) showed that high-power individuals were less influenced by situational and interpersonal pressures than low-power individuals. That is, powerful relative to powerless individuals showed reduced recourse to salient examples during the generation of creative ideas, conformed less to the attitudes of others about a tedious task, were more influenced by their social values than by the reputation of an opponent in a negotiation, and perceived greater choice in making a counter-attitudinal speech and by this experienced higher levels of cognitive dissonance reflected by the change in their post-speech attitudes

### **2.5.2 Power and Information Processing**

A growing body of research indicates that high power leads to less extensive information processing, relative to low power. Consistently, Weick and Guinote (2008) showed that a sense of power makes individuals more sensitive to their subjective experiences during judgmental processes. Across studies, powerful compared to powerless individuals relied more on the experienced ease or difficulty of retrieval in their judgments about such different targets as attitudes, leisure-time satisfaction, and stereotypes. These effects were persistent over time and were not mediated by mood, quality of content information, or number of counterarguments.

Briñol, Petty, Valle, Rucker, and Becerra (2007) demonstrated that having power increased general confidence in oneself and found that when power was induced prior to persuasive messages, powerful compared to powerless individuals showed reduced information processing and relied more on pre-existing views. When power was induced after information processing, powerful compared to powerless individuals relied more on the recently generated thoughts. Briñol and colleagues (2007) conclude that enhancing power increases self-confidence and that this self-confidence validates the mental contents that are accessible in a specific situation.

In line with the assumption that power promotes a simplified processing orientation, it has been demonstrated that powerful individuals are more prone to stereotypical thinking (Fiske, 1993). Stereotypes are culturally defined beliefs that facilitate social perception because of highly accessible associations between a given social group and its members with specific traits or behaviors. Goodwin, Gubin, Fiske, and Yzerbyt (2000) demonstrated that powerful individuals engage in two different stereotyping processes: increasing attention to stereotype-consistent information (stereotyping by design) and decreasing attention to stereotype-inconsistent information (stereotyping by default). However, Overbeck and Park (2001) found that although powerful individuals rely more on stereotypes (e.g., Fiske & Dépret, 1996) this is not the case when attention to individuating information is relevant for

goal pursuit. They demonstrated that powerful compared to powerless individuals were better at remembering information about interaction partners that was relevant for their interaction goals. In addition, Vescio, Snyder, and Butz (2003) showed that powerful individuals only rely on stereotypes about their subordinates when they were useful for social influence strategies towards these subordinates, that is, goal attainment. Thus, powerful individuals seem to process information efficiently and sufficiently in accordance with their predominant goals.

Consistently, across three experiments employing basic cognition tasks, Guinote (Guinote, 2007a) demonstrated that powerful individuals were better at distinguishing relevant from irrelevant information and therefore showed greater attentional flexibility than powerless individuals that were more distracted by peripheral information. Guinote (2007b) argues that because power heightens the ability to focus attention and to inhibit distracting information, it promotes goal-directed behavior. In four studies she investigated the influence of power on the different phases of goal pursuit. Results showed that powerful compared to powerless individuals needed less time and information to make a decision regarding their preferred course of action, were faster at initiating goal-directed behavior, persisted longer and showed more flexible strategies in goal pursuit when confronted with obstacles, and responded more readily to good opportunities for goal pursuit. Overall, power facilitated prioritization of focal goals and their undisrupted pursuit resulting in goal-consistent behavior.

### **2.5.3 Summary and Conclusion**

Power is an important means to influence and to get control over others. Powerful individuals are more confident of themselves, perceive more freedom from constraints and control over their outcomes. As a consequence, powerful individuals act more readily with their own free will without fearing serious social consequences in comparison to powerless individuals. In order to increase predictability and control powerless individuals have to pay attention to multiple sources of information and to engage in interpretative reasoning. Powerful individuals do not perceive these constraints and can devote their undivided attention to goal pursuit. They tend to rely more on general knowledge structures as stereotypes, subjective experiences, or pre-existing views and values, but it cannot be concluded that powerful individuals in general lack the capacity or motivation to process information more extensively. It is more plausible that powerful individuals distribute their attention according to a sufficiency principle, i.e. they elaborate as extensively as is necessary for goal attainment.

As outlined in section 2.4 low SEs tend to like themselves less than high SEs and hold more uncertain and confused self-concepts. As a consequence, they perceive a lack of confidence in their beliefs and of control over situations and outcomes. In the present dissertation it is argued that it is this subjective lack that makes low SEs prone to the authoritarian reaction. Although it is possible to change global self-esteem this is difficult,

takes time and requires extensive intervention programs (DuBois & Flay, 2004; Haney & Durlak, 1998). Power provides both general confidence and a sense of control and by this promotes feelings of being an effective actor. Therefore, power should enhance the expectancy that one is able to perform a behavior and that this behavior will lead to the desired outcome. With regard to the present research question low SEs should become more democratic because they now believe that their voice is meaningful.

Self-esteem and power are two different concepts. As outlined above, self-esteem is an attitude one holds towards oneself that can be expressed as liking or disliking of oneself (see 2.4). Power, on the other hand, is conceived as a basic energy or capacity to produce intended effects (see 2.5). Although conceptually different, self-esteem and power have been shown to be related to perceived confidence and control. Low SEs perceive low levels of confidence and control, high power is a resource to restore this lack and by this can prevent low SEs from their authoritarian reaction.

## **2.6 Implicit Processes – The Assessment**

Although there is a long tradition in the development of dispositional authoritarianism measures (see 2.1.1), previous research concentrated on authoritarian ideologies and politically conservative attitudes in general. Answers on such measures are always guided by general belief systems and, in consequence, authoritarianism scales often have the problem that they are not independent of conservative ideology. In addition, due to strong democratic values in Western societies expressing authoritarian attitudes conflicts with social desirability motivations. A problem that is also evident for explicit evaluations of authoritarian and democratic leaders. Implicit measures provide a means to assess the initial, unadulterated attitudes. In the following, implicit measures and, in particular, the Implicit Association Test (IAT) are introduced (2.6.1). Theoretical models of the underlying implicit processes are presented (2.6.2), and research on changes in implicit attitudes is reviewed (2.6.3).

### **2.6.1 Implicit Measures**

Attitudes cannot be directly observed. They are usually inferred from deliberative, self-report measures directly asking for evaluations or from indirect observations of responses assumed to be related to attitudes. These explicit attitudes are often assessed as summary evaluations typically measured by unidimensional scales assessing positivity or negativity of feelings, or on attitude scales containing a number of items. Responses to direct measures require interpretations of questions, retrieval, or construction of evaluations, and translations of responses into given answer formats. On all steps of this answering process the response can be influenced and biased. Verbal measures can represent many different aspects of attitudes, but they imply that individuals have accurate and complete access to their own

attitudes. This is not always the case (Nisbett & Wilson, 1977) and even when access is possible, individuals are not always motivated to reveal their opinions (e.g., Crosby, Bromley, & Saxe, 1980). Therefore, explicit measures have two main limitations. First, they are dependent on introspection. Second, they can be biased by self-presentational motivations (Greenwald & Banaji, 1995).

Implicit measures aim to assess processes that are automatically instigated by the attitude object and to circumvent correctional processes caused by social desirability. Thus, they try to tap mechanisms respondents are not willing to report directly, or of which they may not even be aware. Research on automatic processes has produced a large variety of measures (de Houwer, 2003a; Fazio & Olson, 2003) such as affective priming procedures (Fazio, Jackson, Dunton, & Williams, 1995), semantic priming (Wittenbrink, Judd, & Park, 1997), the go/no-go association task (Nosek & Banaji, 2001), the extrinsic affective Simon task (de Houwer, 2003b), and the affect misattribution paradigm (Payne, Cheng, Govorun, & Stewart, 2005). One of the most prominent representatives of implicit measures is the Implicit Association Test (IAT), developed by Greenwald, McGhee, & Schwartz (1998).

### **2.6.1.1 Implicit Association Test**

The Implicit Association Test (IAT, Greenwald et al., 1998) is an unobtrusive measure to assess the strength of associations between target concepts and attribute dimensions. Originally a measure developed in the field of social psychology (e.g., Rudman, Greenwald, Mellott, & Schwartz, 1999), the IAT has become relevant in a broad range of fields, i.e. in personality psychology (e.g., Asendorpf, Banse, & Mücke, 2002), clinical psychology (e.g., Teachman, Gregg, & Woody, 2001), consumer psychology (e.g., Maison, Greenwald, & Bruin, 2001), health psychology (e.g., Wiers, van Woerden, Smulders, & de Jong, 2002) developmental psychology (e.g., Skowronski & Lawrence, 2001), gerontology (e.g., Hummert, Garstka, O'Brien, Greenwald, & Mellott, 2002), and neuropsychology (e.g., Phelps et al., 2000).

The IAT is a computer based discrimination task that requires participants to categorize stimuli as fast as possible to two dichotomous dimensions. The classic example is Greenwald and colleagues' (1998) IAT assessing implicit preferences towards African and Caucasian Americans. Participants assigned names (e.g., "Latonya" or "Betsy") presented on a computer screen via two response keys to the target categories "black" or "white". Alternating to this task, they sorted positive and negative attribute stimuli (e.g., "gift" or "poison") to the categories "pleasant" or "unpleasant". Crucial for the IAT are two different combinations of these discrimination tasks: compatible or incompatible combinations in the sense of the associations to be measured. Thus, in the *compatible block*, participants used the same response key for typical white names and pleasant items, and the other key for

typical black names and unpleasant items (stereotype consistent). In the *incompatible block*, key assignments were exchanged so that responses to black names and pleasant stimuli were assessed with the same key and responses to white names and unpleasant stimuli with the other (stereotype inconsistent). The crucial dependent variable is the IAT effect, i.e. the difference of the mean response latencies between the compatible and the incompatible block. Greenwald and Nosek (2001) stated that “If two concepts are highly associated, the IAT’s sorting tasks will be easier when the two associated concepts share the same response than when they require different responses” (p. 85). Therefore, from the differences in response times the strength of the underlying associations between concepts is inferred. In the experiment by Greenwald and colleagues (1998), participants showed faster responses in the compatible than in the incompatible block and the resulting positive difference was interpreted as an associative preference for white over black persons.

Research conducted since the classic study of Greenwald and colleagues (1998) has shown that the IAT meets relevant psychometric criteria (Egloff & Schmukle, 2002; Greenwald & Farnham, 2000; Greenwald & Nosek, 2001; Lane, Banaji, Nosek, & Greenwald, 2007; Nosek, Greenwald, & Banaji, 2007; Rudman et al., 1999). IAT measures typically show high internal consistencies between .70 and .90 (Hofmann, Gawronski, Gschwendner, Le, & Schmitt, 2005; Nosek et al., 2007). The test-retest reliabilities, however, showed only a median of .56 across different studies (Nosek et al., 2007) and they seem to be relatively unaffected by the time span of retest. IAT measures are relatively insensitive to variations in the number of trials, the number of items per category, and the time interval between trials (Nosek, Greenwald, & Banaji, 2005). Further advantages of the IAT are relatively high effect sizes (Greenwald et al., 1998), robustness, as well as relatively simple and flexible application. In addition, recent meta-analyses over various domains (including self-concept, attitude, and stereotypes) revealed average correlations between IATs and explicit self-reports of  $r = .24$  (Hofmann et al., 2005),  $r = .37$  (Nosek et al., 2005), and  $r = .36$  (Poehlman, Uhlmann, Greenwald, & Banaji, manuscript submitted for publication). These small to moderate positive correlations speak against complete independence of the constructs assessed by explicit and implicit measures. However, effect sizes showed a high variability of correlations. Fazio and Olson (2003) argue that the degree of correspondence between implicit and explicit measures depends on the social sensitivity of the domain. They state that “The more sensitive the domain, the greater the likelihood that motivational factors will be evoked and exert some influence on overt responses to an explicit measure” (Fazio & Olson, 2003, p. 304). Thus, the more socially controversial an attitude object is the lower are the correlations between implicit and explicit measures.



## 2.6.2 Theoretical Models of Implicit Processes

### 2.6.2.1 Dual Attitude Model

Explicit and implicit measures have been suggested to measure different underlying processes. In their dual attitude model, Wilson, Lindsey, and Schooler (2000) distinguish between explicit and implicit attitudes that can coexist in memory. Drawing on Greenwald and Banaji's (1995) definition of implicit attitudes as "introspectively unidentified (or inaccurately identified) traces of past experiences" (p. 5), Wilson and colleagues (2000) referred to implicit attitudes as "evaluations that (a) have an unknown origin (i.e., people are unaware of the basis of their evaluation), (b) are activated automatically, and (c) influence implicit responses, namely, uncontrollable responses and ones that people do not view as an expression of their attitude and thus do not attempt to control." (p. 104) Thus, they argue that explicit attitudes are expressed at conscious level whereas implicit attitudes are often outside awareness. Once formed, implicit attitudes are automatically activated when encountering an attitude object and by this represent stable default attitudes. In contrast, explicit attitudes are conceived as more recently acquired attitudes that coexist with the old implicit attitudes. More capacity and motivation is required to retrieve explicit attitudes from memory, but when retrieved the explicit attitude can override the implicit one. Nevertheless, the implicit attitude still exists and influences implicit responses.

### 2.6.2.2 Associative-Propositional Evaluation Model

In their associative-propositional evaluation (APE) model, Gawronski and Bodenhausen (2006) propose that implicit and explicit attitudes should be understood in terms of their underlying mental processes, namely associative and propositional evaluations. *Associative evaluations* are considered as the basis for implicit attitudes and are defined as "automatic affective reactions resulting from the particular associations that are activated automatically when one encounters a relevant stimulus" (p. 693). In contrast, *propositional evaluations* are considered as the basis for explicit attitudes, defined as "evaluative judgments that are based on syllogistic inferences" (p. 694) and are "generally concerned with the validation of evaluations and beliefs" (p. 694).

Gawronski and Bodenhausen (2006) argue that associative processes are mere activation processes, whereas propositional processes refer to the validation of evaluations and beliefs. The qualitative distinction refers to the dependency on truth values. Associative evaluations are translated into a propositional format creating the basis for an explicit judgment if the association is not invalidated. Rejection, however, takes place when the propositional evaluation implied by the associative evaluation is inconsistent with other momentarily considered propositions.

The authors consider associative evaluations as purely affective, thus, representing the affective component of attitudes. In their comment on the APE model, Petty and Briñol (2006) challenge this assumption and argue that evaluative associations can be based on affect and cognition. They propose that at least some of the implicit measures can tap not only affective but also cognitively based reactions. Likewise, Albarracín and colleagues (2006) argue for the existence of implicit beliefs.

In regard of the authoritarian reaction the associative process can be understood as the automatic activation of the concepts “authoritarian” and “success” as well as “democratic” and “failure”. This activation is quite fast and is not controlled for appropriateness. The propositional process translates this activational pattern into the propositional representations: “Authoritarian leadership is successful, whereas democratic leadership is not successful”, “Success is better than failure”, therefore “Authoritarian leadership is better than democratic leadership”. This syllogistic inference, however, is inconsistent with other propositions such as “Democratic principles are important values” and “It is bad to evaluate authoritarian leadership positively”. This inconsistency then may lead to the rejection of the associative processes as a valid basis for an explicit judgment.

### 2.6.3 Changes in Implicit Processes

The key question of the present dissertation is whether and how feelings of uncertainty influence evaluations of authoritarian and democratic leaders. In section 2.2.2 it is argued that leadership evaluations can be conceived as attitudes and research is reviewed demonstrating that explicit attitudes are not invariable but can be changed. Wilson and colleagues' (2000) dual attitude model posits that implicit attitudes are stable and resistant to change. Even if explicit attitudes change, the implicit ones are assumed to remain as they are and coexist with the explicit ones. The dual attitude model can explain changes in explicit attitudes without changes in implicit attitudes but has problems to account for changes in implicit attitudes without changes in explicit attitudes that have been shown in a number of studies (Dasgupta & Greenwald, 2001; Karpinski & Hilton, 2001; Olson & Fazio, 2006; for a review, see Blair, 2002).

Solving this problem, Gawronski and Bodenhausen (2006) propose in their APE model possible ways of changes in both propositional (explicit) *and* associative (implicit) processes. Changes in the propositional evaluations can be evoked by changes in associative evaluations described below, by other propositions considered at the time of judgment, or by additional propositions generated to resolve present inconsistencies between propositions. Changes in associative evaluations can be caused by an “incremental change in the associative structure” or a “temporal change in the activation of pre-existing patterns” (p. 697). *Incremental changes* of associations can be caused by evaluative conditioning

(EC); i.e. repeated pairing of an attitude object with positive or negative stimuli. Mitchell and colleagues (2003), for example, showed that pairing non-words with evaluative stimuli led to positive or negative implicit valence of these non-words on an IAT depending on the valence of the paired stimuli. Thus, pairing with positive stimuli led to a positive, pairing with negative stimuli led to a negative implicit valence of the non-word.

Of higher importance for the present dissertation, however, are *temporal changes* in pattern activation. The question is whether temporary feelings of uncertainty can lead to implicit changes of leadership evaluations. For most attitude objects there exist different associations, for example authoritarian leadership can be associated with success *and* failure. Different situational cues, then, can activate different associative patterns. Thus, in certain situations, the association authoritarian + failure predominates for both high and low SEs. In uncertain situations, the link between authoritarian + success might be activated in low SEs whereas high SEs keep to the link between authoritarian + failure. Gawronski and Bodenhausen (2006) posit that the “activation of particular associations in memory is determined by the relative fit between (a) the pre-existing structure of associations in memory and (b) the particular set of external input stimuli” (p. 693).

### **2.6.3.1 Empirical Evidence for Implicit Attitudes as Constructions**

Wilson and colleagues' (2000) model of dual attitudes conceived implicit attitudes as stable evaluative representations. Gawronski and Bodenhausen (2006), in contrast, regard associative evaluations as constructed on the spot insofar that different input stimuli may activate different associative patterns for a given attitude object. Therefore, according to the APE model implicit attitudes are highly sensitive to the particular context in which an attitude object is encountered and are not more stable or genuine than explicit attitudes. An extensive and growing body of research provides empirical evidence for this notion. Dasgupta and Greenwald (2001), for example, presented participants with pictures of either liked or disliked familiar African and Caucasian Americans and subsequently conducted an implicit prejudice task. Participants exposed to pictures of liked African Americans and disliked Caucasian Americans showed lower implicit prejudice compared to participants primed with disliked African Americans and liked Caucasian Americans. Wittenbrink and colleagues (2001) as well as Barden and colleagues (2004) demonstrated that associative evaluations of African Americans depended on the context (family barbeque versus gang incident) and the social role (prisoner versus lawyer) exemplars were presented in. Consistent with these findings, Mitchell, Nosek, and Banaji (2003) found differential associative evaluations of African Americans depending on the category they were assigned to. For example, categorization in terms of race versus other applicable categories such as occupation led to less versus more positive associative evaluations of African Americans on

two different implicit measures (IAT; Greenwald, McGhee, & Schwartz, 1998; go/no-go associations task; Nosek & Banaji, 2001).

Similarly, Kühnen and colleagues (2001), for example, demonstrated that a mere priming of the subcategories East and West Germans (that are associated with negative versus positive stereotypes) was sufficient to induce stronger implicit preferences of West over East Germans in both East and West Germans. Steele and Ambady (2006) reported that women exhibited stronger implicit gender-stereotypical preferences for arts over math when gender categories were made salient prior to assessment compared to a priming condition with gender-neutral categories. In addition, some studies demonstrated that associative evaluations depend not only on external input stimuli but also on transient motivational and emotional states. Ferguson and Bargh (2004) reported that associative evaluations of an attitude object were dependent on its relevance for goal pursuit. Attitude objects were evaluated more positively when relevant than when irrelevant for achieving goals. DeSteno, Dasgupta, Bartlett, and Caidric (2004) observed that anger but not sadness enhanced negative associative evaluations of out-groups.

In their comment on the APE model Albarracín and colleagues (2006) argue that temporal stability of goals varies and which goal is pursued at a given time is a function of the person and the situation. Attitudes that are associated with a certain goal should be goal-dependent insofar that when the goal is active also the relevant attitudes are activated. When the goal is achieved or inactive, however, relevant attitudes are inhibited (Albarracín et al., 2006). In line with these assumptions, Sherman, Rose, Koch, Presson, and Chassin (2003) reported more positive associative evaluations of cigarettes in heavy smokers after nicotine deprivation.

Uncertainty resolution can be conceived as the primary goal under conditions of perceived uncertainty. This goal might be associated with different attitudes for high and low SEs. Whereas in high SEs democratic attitudes may be activated, in low SEs authoritarian attitudes may predominate under uncertainty. Under conditions of certainty, these attitudes are inhibited and both high and low SEs rely on general democratic beliefs.

#### **2.6.4 Summary and Conclusions**

The use of explicit measures can evoke deliberative thinking and subsequently social desirable responses, making it difficult to unravel the hypothesized authoritarian tendencies under uncertainty. Implicit measures might solve this problem. One main representative of implicit measures is the IAT that has been shown to be a robust, reliable instrument with high effect sizes in regard of many different research topics. Results on implicit and explicit measures do not always converge. Therefore, in their model of dual attitudes, Wilson and colleagues (2000) distinguish between implicit and explicit attitudes and argue that implicit

attitudes are stable default attitudes that are often outside awareness but nevertheless can have an impact on explicit attitudes. This model, however, cannot explain changes in implicit attitudes whereas explicit attitudes remain unchanged. In their APE model, Gawronski and Bodenhausen (2006) distinguish between associative and propositional evaluations and argue that both can be changed independent of each other. Temporary changes in activation patterns of associations can result from specific situational cues.

Drawing on the assumptions of the APE model, in the present dissertation it is hypothesized that temporary feelings of uncertainty activate different associative patterns in high and low SEs: authoritarian patterns in low SEs and democratic patterns in high SEs. In order to unravel these differential patterns and measure the initial, unadulterated valence and success associations linked to the authoritarian and democratic concept, a valence and a success IAT are developed and employed in the present research project.

## 2.7 Delineation of General Hypotheses

The main objective of the present dissertation is to find an explanation for the phenomenon of self-imposed subordination. *When* and *why* do individuals fail to be autonomous and flee in the security of authoritarian leaders? What are the specific circumstances that result in an authoritarian appeal?

A growing body of research provides empirical evidence for the link between authoritarianism and threat (see 2.1.2). Submission to the authorities is one of the main components of authoritarianism (see 2.1.1) and Oesterreich (2005) proposes that individuals respond to emotionally overtaxing feelings of uncertainty by seeking the security provided by authorities (see 2.1.3). Leaders are persons who seem to have the power and means to satisfy the desire for shelter and guidance in uncertain situations. Therefore, the present research especially focuses on evaluations of authoritarian and democratic leaders. The main difference between authoritarian and a democratic leadership is the amount of participation (see 2.2.1). In its extremity authoritarian leadership represents a clear hierarchy, whereas democratic leadership is characterized by granting voice in important decisions.

Most studies in the field focus on the impact of situational factors on authoritarianism such as economic and political crisis and by this neglect the internal complements to external threats. To the extent that an external threat is ambiguous, unpredictable and associated with potential harm, however, it can cause feelings of uncertainty (Kagan, 1972; see 2.3.1). Uncertainty is aversive and its resolution is a primary human motive that can be satisfied by different strategies (see 2.3.2). Which strategy is chosen depends on a deliberative process of weighing the expectancies that a strategy will be successful in uncertainty resolution. Consistently, Weary and Edwards (1996) propose in their causal uncertainty model that

uncertainty motivates higher, whereas certainty promotes lower cognitive elaboration (e.g., Weary & Jacobson, 1997; Weary, Jacobson, Edwards, & Tobin, 2001; see 2.3.3).

### **2.7.1 Uncertainty – The Situational Precondition**

The present dissertation, therefore, argues that under certainty individuals do not elaborate information extensively, but rely on the most accessible information. In Western cultures democratic principles are predominant social values often activated in the socialization process, and should therefore be highly accessible. Due to low cognitive elaboration under certainty, this highly accessible information should be used in the judgmental process without deeper elaboration and should result in a general preference for democratic over authoritarian leadership. In the following this effect is referred to as “*democratic standard attitude*”. Thus, the first hypothesis of the present dissertation is:

**Hypothesis 1:** Under conditions of certainty, individuals will show a democratic standard attitude, thus, will clearly prefer democratic over authoritarian leadership.

As uncertainty states a threat to the fundamental need for security the motivation to resolve it has priority over all other needs. Different action plans are considered in respect of their potential to reduce uncertainty. These processes can be formalized in an expectancy-value model: The choice between democratic and authoritarian leadership can be conceived as a choice between the two different behavioral alternatives of *voice* and *no voice* (see 2.2.2). Which alternative is chosen depends on (a) individuals’ belief that they can successfully perform voice behavior, (b) their perception that voice will lead to uncertainty reduction, and (c) their judgment that uncertainty reduction is strongly desired and valued. Most individuals should place a high value on this outcome, but in regard of the expectancy components (a) and (b) individual differences in self-esteem level should become relevant.

### **2.7.2 Self-Esteem – The Individual Predisposition**

Low SEs perceive a lack of self-confidence and do not have the feeling of control over the outcomes of their actions. Therefore, they should have a low expectation that they can successfully perform voice and that their voice contributes to the process of uncertainty reduction. Instead they should prefer having a leader make all the decisions for them and believe that the leader can better reduce uncertainty without their participation. Thus, the force to exhibit their voice is lower than to relinquish their voice, resulting in a preference for authoritarian leadership. It follows that low SEs should show a stronger preference for authoritarian leadership under uncertainty than under certainty. In the following this effect is

referred to as “*authoritarian reaction*”. Thus, the second hypothesis of the present dissertation is:

**Hypothesis 2:** Under uncertainty, low SEs will show an authoritarian reaction, thus, will show a stronger preference for authoritarian (relative to democratic) leadership than under certainty.

High SEs, in contrast, are confident in themselves and have the feeling that they have control over the outcomes of their behavior (see 2.4). Therefore, they should have a strong expectation that they can successfully perform voice and that their voice contributes to the process of uncertainty reduction. They do not expect that having no voice resolves uncertainty. Thus, the force to exhibit their voice is stronger than to relinquish their voice, resulting in a striving for more influence best realized by democratic leadership. It follows that high SEs should show an even stronger preference for democratic leadership under uncertainty than under certainty. In the following this effect is referred to as “*democratic reaction*”. Thus, the third hypothesis of the present dissertation is:

**Hypothesis 3:** Under uncertainty, high SEs will show a democratic reaction, thus, will show a stronger preference for democratic (relative to authoritarian) leadership than under certainty.

Figure 2 shows a schematic overview of Hypothesis 1, 2, and 3. The different behavioral tendencies of low and high SEs under uncertainty formalized by an expectancy-value function is presented in Figure 3.

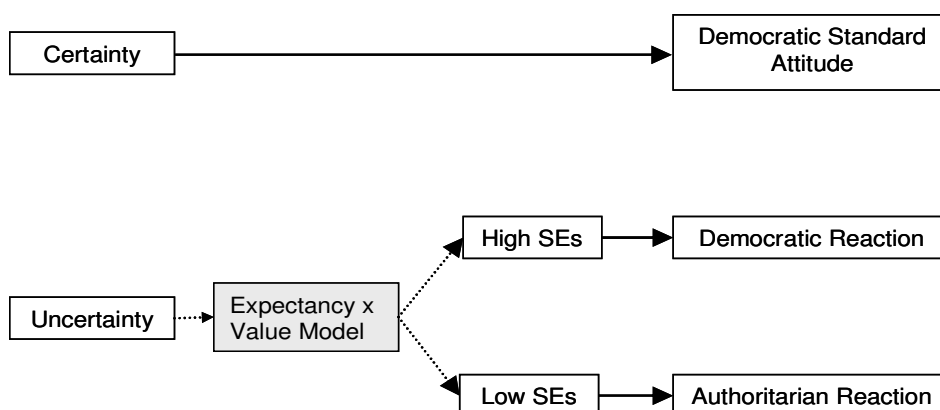


Figure 2. Schematic overview of the general research assumptions.

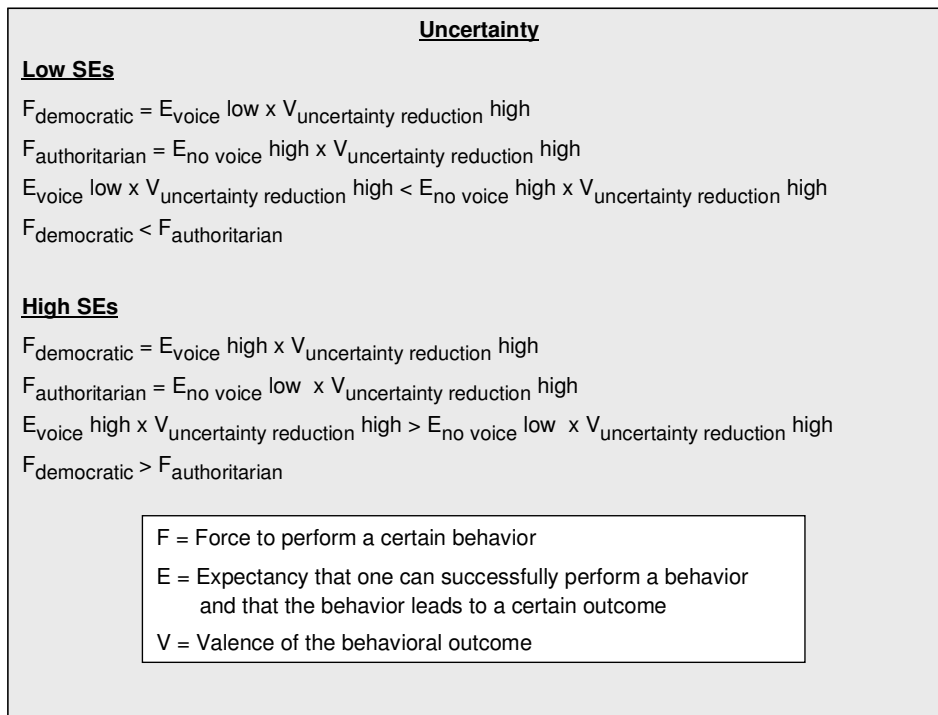


Figure 3. Behavioral tendencies of low and high SEs under uncertainty formalized in an expectancy-value function.

### 2.7.3 Valence and Success – A Specification

Regarding leadership evaluations it is useful to distinguish between the two dimensions of valence (pleasant/ unpleasant) and success (success/ failure). Valence judgments refer to the feelings one has towards a certain leadership style and can be therefore considered as the affective attitude component. Success evaluations refer to the beliefs about how effective a leadership style is and by this represent the cognitive attitude component. In general, at least in Western cultures there is a clear aversion towards authoritarian and a preference for democratic leadership (2.2.2). Accordingly, Hypothesis 1 can be specified as follows:

**Specification of Hypothesis 1:** Under conditions of certainty, individuals will show a democratic standard attitude, thus, will clearly prefer democratic over authoritarian leadership and this on affective valence *and* cognitive success measures.

Affective and cognitive attitude components are not necessarily consistent and non-ambivalent (see 2.2.3). Research on self-enhancement and self-consistency motives showed differences between high and low SEs on cognitive but not on affective measures. This is explained by a discrepancy between feelings and thoughts of low SEs, between what they feel and what they believe (see 2.4.3). As high and low SEs do not differ in their desire of self-enhancement and democratic leadership can satisfy this desire, both high and low SEs



should like democratic leadership more than authoritarian leadership regardless of certainty or uncertainty. However, high and low SEs differ in the self-views they hold and the success of democratic leadership depends per definition in part on its group members. Therefore, consistent with their self-view low SEs should believe authoritarian leadership and high SEs democratic leadership to be more successful to reduce uncertainty reflected on cognitive success measures. Accordingly, Hypothesis 2 and Hypothesis 3 can be specified as follows:

**Specification of Hypothesis 2:** Under uncertainty, low SEs will show an authoritarian reaction, thus, will show a stronger preference for authoritarian (relative to democratic) leadership than under certainty and this on cognitive success *but not* on affective valence measures.

**Specification of Hypothesis 3:** Under uncertainty, high SEs will show a democratic reaction, thus, will show a stronger preference for democratic (relative to authoritarian) leadership than under certainty and this on cognitive success *but not* on affective valence measures.

#### 2.7.4 Power – The (Re-) Solution

Power is an important means to influence others and get control over others' and one's own outcomes. Being aware of high power makes individuals more confident of themselves, let them perceive more freedom from constraints, and let them act more readily at their free will. Therefore, the expectancy to successfully reduce uncertainty should be enhanced for individuals that are aware of having high power compared to individuals that are unaware of their power or that are aware of having low power. As the authoritarian reaction of low SEs should be due to a lack of perceived confidence and control and salience of high power induces both, their expectancy that voice makes a difference should increase and by this cancel out the authoritarian reaction. In regard of the expectancy value function, this means higher motivation (force) to exhibit voice behavior ( $F_{\text{democratic}}$ ) than to relinquish voice ( $F_{\text{authoritarian}}$ ). Thus, one can argue that the salience of high power increases the expectancy that voice is successful and at the same time decreases the expectancy that no voice is successful in reducing uncertainty for both high and low SEs resulting in a democratic reaction. The sufficiency principle states that individuals elaborate information only as extensively as necessary for goal attainment and that the amount of elaboration is determined by the level of confidence. Therefore, another possibility is that high power induces such a high level of confidence that high and low SEs do not engage in the process of weighing potential uncertainty reduction strategies for their success expectancies but instead rely on the most accessible strategy, that is, their democratic standard attitude. In

both cases the salience of high power, however, should prevent individuals from an authoritarian reaction. Thus, the fourth hypothesis of the present dissertation is:

**Hypothesis 4:** Under conditions of uncertainty, when feelings of high power are induced, low SEs will *not* show an authoritarian reaction. Two different results are possible:

- a) both high and low SEs will show a democratic reaction (for high SEs an increased one), thus, will show a stronger preference for democratic (relative to authoritarian) leadership than under certainty, or
- b) both high and low SEs rely on their general belief system and show a democratic standard attitude regardless of uncertainty or certainty.

In contrast, individuals unaware of their power or being aware of having *low power* should have to engage in the search for uncertainty reduction strategies and the weighing expectancies process. Depending on their self-esteem level they should or should not believe in their ability to successfully resolve uncertainty resulting in a democratic reaction for high SEs and an authoritarian reaction for low SEs. Thus, the fifth hypothesis of the present dissertation is:

**Hypothesis 5:** Under uncertainty, when individuals are unaware of power or aware of having low power, low SEs will show an authoritarian and high SEs a democratic reaction (as stated in Hypotheses 2 and 3).

Figure 4 depicts a schematic overview of Hypotheses 4 and 5.

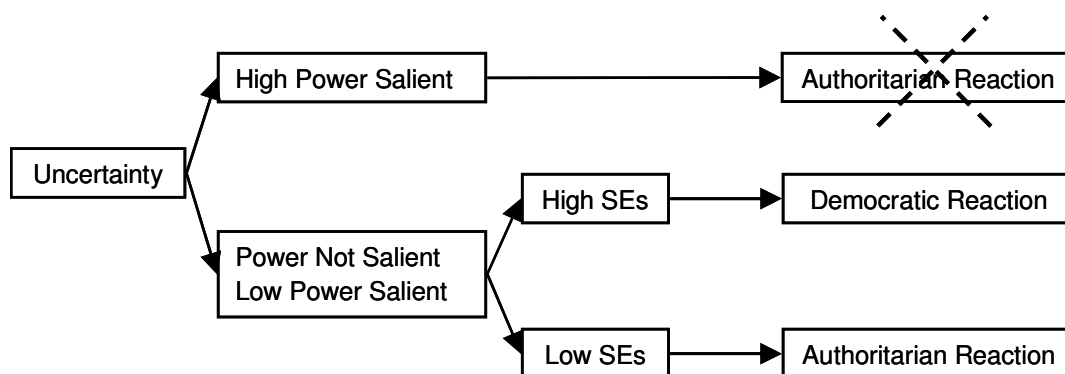


Figure 4. Schematic overview of the impact of power on the authoritarian reaction.

### **2.7.5 Explicit versus Implicit – The Assessment**

For the purpose of the present research explicit measures were developed that discriminate valence from success evaluations of democratic and authoritarian leadership. The use of explicit measures, however, taps propositional thinking and can lead to social desirable responses, especially regarding evaluations of authoritarian leadership. Authoritarian tendencies should be in conflict with general democratic values and, therefore, positive associative evaluations of authoritarian leadership should be rejected as inaccurate for explicit judgments. Implicit measures provide the means to measure the initial, unadulterated associations linked to democratic and to authoritarian leadership. Therefore, the authoritarian reaction should be more pronounced on implicit than on explicit measures.

### **2.7.6 Study Overview**

Study 1 is designed to test Hypothesis 1 that in the absence of uncertainty democratic is clearly preferred over authoritarian leadership regarding both valence and success. For the purpose of the present research project newly developed implicit (IAT's) and explicit leadership measures that discriminate valence from success are validated. Study 2 aims at providing evidence for Hypothesis 2 that low SEs show an authoritarian reaction to perceived uncertainty. For this purpose dispositional self-uncertainty is made salient and the differential reactions of high and low SEs are assessed via the new implicit and explicit leadership measures. The subsequent studies put the full model to the test. In order to replicate the finding that low SEs exhibit an authoritarian reaction to uncertainty (Hypothesis 2) and to show in addition that high SEs instead exhibit a democratic reaction (Hypothesis 3), uncertainty is manipulated experimentally. Moreover, it is investigated whether perceiving high power is sufficient to cancel out the authoritarian reaction (Hypothesis 4), whereas perceiving low power leads to the same effects as being not aware of power (Hypothesis 5). In Study 3a, a new semi-implicit measure to assess power -namely the Spatial Power Measure- is developed and validated. In Study 3b, dispositional power is assessed via this new measure prior to an experimental priming of uncertainty in order to make dispositional power salient and implicit as well as explicit leadership measures are employed. Study 4 aims at replicating the findings of Study 3 via an experimental priming of power. In Study 4a, the effect of imagining being in a leader versus a follower position is tested as a power prime by assessing the new power measure after the manipulation. In Study 4b, this power prime is induced after the experimental manipulation of uncertainty and the resulting leadership preferences on implicit and explicit measures are assessed.

## **3 Empirical Part**

### **3.1 Study 1 – The Democratic Standard Attitude**

It has been shown that in sensitive domains such as prejudice and stereotypes, the correlations between implicit and explicit measures tend to be quite low (e.g., Fazio et al., 1995; Greenwald et al., 1998). Fazio and Olson (2003) posit that this is due to motivational factors that influence one's overt responses on explicit measures. Strong democratic values in Western societies should also lead to social desirability effects on evaluations of authoritarian leadership. In line with Gawronski and Bodenhausen's (2006) APE model, it can be argued that even if the associative evaluation favors authoritarian over democratic leadership this automatic response would be rejected as a valid basis for explicit judgments during propositional reasoning because it conflicts with the general belief system of democratic values. In order to measure the initial, unadulterated valence and success associations linked to authoritarian and democratic leadership, for the present dissertation project two new implicit association tests -a valence and a success IAT- have been developed. The valence IAT assesses the association of authoritarian and democratic leadership with valence (pleasant vs. unpleasant), the success IAT addresses the association of authoritarian and democratic leadership with success (success vs. failure).

Study 1 aims at testing Hypothesis 1 that in the absence of uncertainty, individuals clearly prefer democratic over authoritarian leadership regarding both valence and success. As democratic values are prevalent in Western cultures, it is hypothesized that in general participants favor democratic over authoritarian leadership. Thus, on average the standard attitude is expected to be a preference for democratic leadership. As a democratic preference does not conflict with general values this standard attitude should be expressed on explicit as well as implicit measures. Consistently, implicit and explicit measures are expected to correlate at least to some extent.

To further validate these measures, the relation of explicit and implicit leadership evaluations with individual difference measures of right-wing authoritarianism (RWA) and social dominance orientation (SDO) are investigated. Both scales have been shown to predict social-political phenomena such as prejudice, intolerance, support of right-wing political parties, and antidemocratic sentiment (e.g., Altemeyer, 1981; Pratto, Sidanius, Stallworth, & Malle, 1994). However, there is a growing body of research indicating that the RWA and SDO scale tap different and relatively independent dimensions (Altemeyer, 1998; Duckitt, 2001). RWA items express beliefs in traditional norms, obedience to authorities and coercive social control. SDO represents a "general attitudinal orientation toward intergroup relations, reflecting whether one generally prefers such relations to be equal, versus

hierarchical” (Pratto et al., 1994, p. 742) and assesses beliefs in social and economic inequality and the right of status high groups to dominate weaker ones. Thus, RWA rather refers to submissiveness towards authorities whereas SDO rather refers to dominance over others (Altemeyer, 1998).

### 3.1.1 Method

#### 3.1.1.1 Participants

One hundred and fifty participants completed the online survey. Nine participants were excluded from data analyses because of higher error rates than 21% on IAT completion (e.g., Bluemke & Friese, 2006) resulting in a total sample size of 141 participants. Participants were recruited by an online pool from the University of Mannheim. The advertisement informed them that they would take part in a 20 minute study that aims at validating new attitude and personality measures and would in return receive the chance to win one of 10 book coupons (worth 10 Euro each). 39 (28%) participants were male, 102 (72%) female, aged 19 to 66 with an average age of 25.4 years ( $SD = 7.7$ ). In the main part, students (121; 86%) of various disciplines participated. They were on average in the 5.4 semester with a range from 1 to 22. The remaining 20 participants (24%) were employed or else. For the main part the first language was German (130, 92%).

#### 3.1.1.2 Design

In a within-subject design, participants were randomly assigned to different order conditions (Table 2). Half of the participants first completed the implicit and afterwards the explicit leadership measures, the other half first completed the explicit and then the implicit leadership measures. The order of valence and success evaluations within explicit and implicit measures was counterbalanced. Subsequently, all participants completed the RWA and the SDO scale.

Table 2. Order conditions of implicit and explicit leadership measures in Study 1

	Valence IAT – Success IAT		Success IAT – Valence IAT	
	Explicit Valence – Explicit Success	Explicit Success- Explicit Valence	Explicit Valence – Explicit Success	Explicit Success- Explicit Valence
Explicit - Implicit				
Implicit - Explicit				

#### 3.1.1.3 Experimental Procedure and Materials

Participants entered the experiment via the internet. The welcome page informed participants that the purpose of the study was to validate new attitude measures and asked for serious completion of questions. After agreeing to informed consent, participants provided standard

demographic information and stated their political orientation. Political orientation was assessed by one item that was adopted from Jost, Napier, Thorisdottir, Gosling, Palfai, and Ostafin (2007) and translated into German. Participants were asked to locate themselves on a 9-point scale of political orientation (1 = extremely liberal to 9 = extremely conservative). The mean political orientation score for the sample was  $M = 3.71$  ( $SD = 1.46$ ), that is more liberal than conservative. The actual survey began with implicit and explicit measures assessing the valence and success evaluations of democratic and authoritarian leadership. As implicit measures, the newly developed valence and success IATs were employed. As explicit measures, participants evaluated authoritarian and democratic items used in the IATs for their valence and success and answered two scales measuring general valence and success of authoritarian and democratic leadership. The item-based evaluations always preceded the general evaluations and the order of valence and success was the same within both measures for one participant. Subsequently, participants completed the RWA and the SDO scale and finally, they got a chance to take part in the lottery. On the last page they were debriefed following APA suggestions and thanked for their participation. Explicit measures were employed in Globalpark (2007), implicit measures were assessed via a specifically programmed Java Applet that allowed client based response time measurement. The different measures administered in the present study are described in detail below.

**Implicit Leadership Measures - Valence and Success IAT:** Implicit evaluations were assessed via the newly developed valence and success IATs. Each task required participants to categorize authoritarian and democratic target items together with either (a) pleasant and unpleasant attributes or (b) success and failure attributes. Aside from training trials, within each IAT the categorization of target and attribute items occurred in two critical blocks. In the compatible block (i.e., consistent with democratic values) the same response key was used for authoritarian and unpleasant/ failure stimuli, and the other key for democratic and pleasant/ success stimuli. In the incompatible block (i.e., inconsistent with democratic values), key assignments were exchanged so that responses to authoritarian and pleasant/ success stimuli were assessed with the same key and responses to democratic and unpleasant/ failure stimuli with the other. Both IATs applied the same 5 authoritarian and the same 5 democratic stimuli. Whereas the valence IAT used 5 pleasant and 5 unpleasant words, the success IAT employed 5 success and 5 failure words. The full set of stimuli is presented in Table 3, the German IAT stimuli are provided in Appendix D.

Table 3. *Target and attribute stimuli used for the valence and the success IAT*

Target Stimuli Valence & Success IAT		Attribute Stimuli Valence IAT		Attribute Stimuli Success IAT	
authoritarian	democratic	pleasant	unpleasant	success	failure
decisive	sensitive	jewel	lice	victory	miscarriage
directive	team-player	fragrances	measles	rise	failing
resolute	liberal	angel	slime	triumph	crisis
patriarchic	integrative	sea	pocks	gain	loss
dominant	companionable	diamond	dirt	achievement	flop

Although stimulus confounds within the diagnostic measurement procedures do not pose a big problem for the interpretation of experimental treatment effects on these measures, the influence of irrelevant associations between target and attribute dimensions was reduced as far as possible (Bluemke & Friese, 2006; Steffens & Plewe, 2001). A set of potential target items was pre-tested on 7-point rating scales ( $N = 16$ ). Following Bluemke and Friese (2006) stimuli were selected in a way such that (a) a clear differentiation between authoritarian and democratic leadership items was guaranteed, (b) democratic and authoritarian target items were equally related to positive vs. negative valence (almost neutral on average), and (c) target items were equally related to success vs. failure (on average). Reducing the perception of associations to the authoritarian/ democratic dimension turned out to be more difficult for the attribute items. While assuring a clear distinction between positive and negative valence, or between success and failure items, stated no problem, the generally positive explicit attitude towards democratic leadership prevented a full elimination of cross-category associations (Bluemke & Friese, 2006): When asking the same participants to indicate the relation of attribute stimuli to the authoritarian/ democratic dimension on 7-point rating scales, they perceived positive items to be more strongly in line with the democratic side of the scale and located negative items more often on the authoritarian side. Likewise, success rather than failure items were related to democratic leadership (both already indicating a strong preference for democratic and an aversion to authoritarian leadership; see 2.2.2). Nevertheless, attribute stimuli were selected so as to reduce these asymmetries as much as possible. Additionally, the average word length and number of syllables of complementary target categories and attribute categories was kept constant per dimension.

Participants were informed that reaction times would be measured during a task about authoritarian and democratic leadership in which they were to sort words appearing in the middle of the screen into one of several categories. Correct responses were to be given as quickly but also as reliably as possible by pressing one of two response keys. In analogy to

previous IAT studies (Greenwald et al., 2002; Greenwald, Nosek, & Banaji, 2003), the IATs were administered according to a 7-block structure. For each IAT, the tasks comprised training the categorization of authoritarian versus democratic target items (Block 1: 10 trials); sorting pleasant versus unpleasant (alternatively: success versus failure) attribute items (Block 2: 10 trials); practicing to respond to democratic + pleasant (success) stimuli and authoritarian + unpleasant (failure) stimuli (Block 3: 20 trials); 40 critical trials of the same kind as in Block 3 in Block 4; reversing the response key assignment for authoritarian and democratic stimuli (Block 5: 10 trials); practicing the categorization of authoritarian + pleasant (success) and democratic + unpleasant (failure) stimuli (Block 6: 20 trials); repeating the aforementioned trials as a critical test (Block 7: 40 trials). Each of the  $4 \times 5 = 20$  stimuli were presented twice in the critical blocks. The compatible task was performed first. Response accuracy was displayed on the screen by means of a green circle or a red cross for correct and incorrect responses, respectively. The red cross remained on the screen until the correct answer was provided. The inter-stimulus interval was set to 300 ms. Following each block, participants received feedback about the percentage of correct answers (Bluemke & Friese, 2006; e.g., Greenwald et al., 1998). The crucial dependent variable, the IAT effect, was calculated as the mean latency difference between the compatible and incompatible condition (Blocks 4 and 7, respectively). Positive difference scores reflected a faster tendency to associate pleasantness (success) with a democratic rather than with an authoritarian leadership concept. In contrast, negative scores can be interpreted as a stronger association between pleasantness (success) and authoritarian rather than democratic leadership. Thus, a positive score represented an implicit preference for democratic leadership, whereas a negative score indicates a subject's implicit preference for authoritarian leadership. Reliability statistics revealed that both the valence and the success IAT showed satisfying internal consistencies (valence IAT: Cronbach's  $\alpha = .74$ ; success IAT: Cronbach's  $\alpha = .64$ ).

**Explicit Leadership Measures – Item-based Evaluation:** In accordance with implicit measures, participants judged each of the 10 authoritarian and democratic items used in the valence and the success IAT (e.g., dominant or liberal) explicitly.

Regarding the valence dimension, participants were asked: "How pleasant or unpleasant do you think the following leadership characteristics are?" and rated the items on a 7-point scale (ranging from 1 = extremely pleasant to 7 = extremely unpleasant). Regarding the success dimension, the question was: "How strongly do you link the following leadership characteristics to success or failure?" and answers were given on a 7-point scale (ranging from 1 = extreme success to 7 = extreme failure). The explicit valence and success evaluations of these items were combined into four different subscales: valence of



democratic items (Cronbach's  $\alpha = .54$ ), valence of authoritarian items (Cronbach's  $\alpha = .74$ ), success of democratic items (Cronbach's  $\alpha = .50$ ), and success of authoritarian items (Cronbach's  $\alpha = .76$ ).

In order to replicate the findings of pre-testing participants were asked: "How democratic or authoritarian do you think are the following leadership characteristics?" and rated the items on a 7-point scale (ranging from 1 = extremely democratic to 7 = extremely authoritarian). The 5 items that should assess democratic leadership were combined to a democratic item scale (Cronbach's  $\alpha = .51$ ) and the 5 items that should assess authoritarian leadership were combined to an authoritarian item scale (Cronbach's  $\alpha = .56$ ). Exact German wording of explicit item-based leadership evaluations are provided in Appendix E.

**Explicit Leadership Measures – General Evaluation:** General explicit valence and success evaluations of authoritarian and democratic leadership were assessed each with three items. The general valence scale asked, "How positive (pleasant/ enjoyable) do you think authoritarian (democratic) leadership is?" (1 = not at all to 7 = extremely). On the general success scale subjects indicated, "How successful (efficient/ profitable) do you think authoritarian (democratic) leadership is?" Answers were in both cases given on a 7-point scale (ranging from 1 = not at all to 7 = extremely). The resulting 12 items were combined into four subscales: general valence of democratic leadership (Cronbach's  $\alpha = .93$ ), general valence of authoritarian leadership (Cronbach's  $\alpha = .91$ ), general success of democratic leadership (Cronbach's  $\alpha = .85$ ), and general success of authoritarian leadership (Cronbach's  $\alpha = .85$ ). Exact German wording of explicit general leadership evaluations are provided in Appendix E.

**Right-Wing Authoritarianism (RWA):** As described in section 2.1.1, Altemeyer (1988) proposes three underlying dimensions of RWA: authoritarian submission, authoritarian aggressiveness and conventionalism. In previous RWA scales, however, items were often not clearly differentiated between these three dimensions (Duckitt & Fisher, 2003; Funke, 2005). Duckitt and Bizumic (unpublished manuscript) developed and validated a 36 item scale of RWA in which they carefully distinguish between these three dimensions. The authors introduced new terms for the three dimensions. In the following they are presented but to make things clearer the original terms are used in the results section. A subscale of 12 items assesses "conservatism" (new term), i.e. submission (original term). A sample item is: "The real keys to the "good life" are respect for authority and obedience to those who are in charge". A second subscale consisting of 12 items assesses "authoritarianism" (new term), i.e. aggression (original term). A sample item is: "What our country really needs is a tough,

harsh dose of law and order". The third subscale with 12 items assesses "traditionalism" (new term), i.e. conventionalism (original term). A sample item is: "It is important that we preserve our traditional values and moral standards". For the purpose of the present study the scale was translated into German and items were presented in random order. Answers were given on a 7-point scale (ranging from 1 = strongly disagree to 7 = strongly agree). The 36 items of the RWA scale were highly interrelated (Cronbach's  $\alpha = .92$ ). The sample mean was  $M = 3.00$  ( $SD = 0.79$ ). Also, internal consistency of the three subscales was high (submission: Cronbach's  $\alpha = .85$ , aggression: Cronbach's  $\alpha = .88$ , conventionalism: Cronbach's  $\alpha = .83$ ). Sample means were as follows:  $M_{\text{submission}} = 2.74$  ( $SD = 0.85$ ), and  $M_{\text{aggression}} = 3.38$  ( $SD = 1.07$ ),  $M_{\text{conventionalism}} = 2.78$  ( $SD = 0.88$ ).

**Social Dominance Orientation (SDO):** As a second individual difference measure, participants completed a 14 item version of the SDO scale (Pratto et al., 1994). SDO is conceptualized as a measure of the degree to which individuals desire hierarchy among social groups. Research findings indicate that the SDO and the RWA scale predict similar phenomena, such as prejudice, intolerance, right-wing political party support, and anti-democratic sentiment (Pratto et al., 1994; Pratto, 1999; Sidanius, Pratto, & Bobo, 1994). However as stated above, RWA and SDO seem to be quite independent dimensions of "submission" and "dominance", respectively (Altemeyer, 1998; Duckitt, 2001). Consequently, RWA and SDO scales correlate quite differently with important external variables (Altemeyer, 1998; Duckitt, 2001; Duckitt, Wagner, du Plessis, & Birum, 2002; Duckitt & Fisher, 2003). RWA is associated with religiosity and valuing order, structure, conformity, and tradition, while SDO is associated with valuing power, achievement, and hedonism and being male. A sample item of the 14 items assessing SDO is: "Some groups of people are simply inferior to other groups". A German version of the scale adopted from Keller (2005) was administered. Answers were given on a 7-point scale (ranging from 1 = strongly disagree to 7 = strongly agree). The SDO scale was internally consistent (Cronbach's  $\alpha = .85$ ), with participants' mean degree of SDO being  $M = 2.54$  ( $SD = 0.92$ ).

## 3.1.2 Results

### 3.1.2.1 Data Preparation

The data for each trial block included mean response latency to correct response (in ms) and error rates. As in previous research, error rates of the IAT completion were typically low (about 6%). Only latencies from correct trials were included in the following analyses. Prior to aggregation, IAT response latencies higher than 3,000 ms or lower than 300 ms were recoded as 3,000 and 300 ms, respectively. The first two trials of each block were dropped because of their typically extended latencies (Greenwald et al., 1998, 2002, 2003). Latencies

were individually z-transformed by subtracting a participant's latency grand mean and dividing the result by a participant's overall standard deviation (Bluemke & Friese, 2006). This procedure of trimming data before analyses was employed in all IAT studies of the present dissertation.

### 3.1.2.2 Test of Hypothesis 1

**Democratic and Authoritarian Items:** As in pretests, the 10 leadership items used in the valence and success IAT differed significantly from the scale midpoint in the predicted directions. The sample means of the democratic item scale and the authoritarian item scale differed both significantly from the scale midpoint 4 in the expected direction (democratic item scale:  $t(140) = -34.15, p < .001$ ; authoritarian item scale:  $t(140) = 23.19, p < .001$ ). The sample means of democratic items were all significantly lower than 4 (all  $p < .001$ ), the sample means of authoritarian items were all significantly higher than 4 (all  $p < .001$ ), implying that, as intended, the former were judged as democratic and the latter as authoritarian.

**Implicit Leadership Measures - Valence and Success IAT:** Hypothesis 1 of the present dissertation states that under conditions of certainty and in the absence of uncertainty, individuals will in general show a democratic standard attitude, thus, clearly prefer democratic over authoritarian leadership on valence and success measures. Consistently, on average participants showed positive IAT effects that differed significantly from zero for the valence IAT ( $t(140) = 20.03, p < .001$ ) and for the success IAT ( $t(140) = 17.12, p < .001$ ; means and standard deviations are presented in Table 4).

**Explicit Leadership Measures – Item-based Evaluation:** In order to compare item evaluations with the IAT-effects, leadership items were reverse coded and a difference measure of relative favoritism was computed by subtracting authoritarian from democratic item scores such that positive values indicated more ascribed pleasantness or success for democratic and negative values more ascribed pleasantness or success for authoritarian leadership. On average participants showed positive difference scores that differed significantly from zero (item-based valence difference:  $t(140) = 14.00, p < .001$ ; item-based success difference:  $t(140) = 2.01, p < .05$ ; means and standard deviations are presented in Table 4).

**Explicit Measures – General Leadership Evaluation:** Since the relation of democratic and authoritarian leadership was the focus of interest, again a difference score of relative favoritism was computed by subtracting authoritarian from democratic scores such that positive values indicate a preference for democratic and negative values a preference for

authoritarian leadership. On average participants showed positive difference scores that differed significantly from zero (general valence difference score:  $t(140) = 20.21, p < .001$ ; general success difference:  $t(140) = 4.98, p < .001$ ; means and standard deviations are presented in Table 4).

Table 4. Mean IAT effects expressed as z-differences and mean difference scores for explicit item-based and general leadership measures.

	Mean	SD
Valence IAT Effect	0.61	0.36
Success IAT Effect	0.51	0.35
Item-Based Valence Difference	1.64	1.40
Item-Based Success Difference	0.23	1.32
General Valence Difference	3.59	2.11
General Success Difference	0.90	2.14

**Summary of results in regard of Hypothesis 1:** As evident in Table 4, all implicit and explicit leadership measures showed a positive difference score that differed significantly from zero, indicating a clear implicit and explicit preference for democratic compared to authoritarian leadership on both the valence and the success dimension. Moreover, the mean differences on the valence measures (valence IAT effect, item-based valence difference, and general valence difference) were much stronger than the mean differences on the success measures (success IAT effect, item-based success difference, and general success difference) implying valence attitudes to be more extreme than success attitudes.

### 3.1.2.3 Validation of Implicit and Explicit Leadership Measures

All correlations are presented in Table 5. Fischer's  $r$ -to- $z$  transformations showed no significant differences between correlations due to order of implicit and explicit or valence and success measures. Therefore, only combined correlations are reported below.

Table 5. Correlations between explicit and implicit measures of Study 1

	Political Orientation	RWA – Total	RWA – Submission	RWA – Aggression	RWA – Conventionalism	SDO	Item-Based Valence Difference	Item-Based Success Difference	General Valence Difference	General Success Difference	Valence IAT
Political Orientation	-										
RWA – Total	.49**	-									
RWA – Submission	.43**	.86**	-								
RWA – Aggression	.39**	.85**	.60**	-							
RWA – Conventionalism	.42**	.82**	.62**	.49**	-						
SDO	.33**	.50**	.42**	.55**	.26**	-					
Item-Based Valence Difference	-.34**	-.42**	-.37**	-.36**	-.34**	-.32**	-				
Item-Based Success Difference	-.06	-.21**	-.24**	-.22**	-.08	-.23**	.45**	-			
General Valence Difference	-.28**	-.40**	-.40**	-.25**	-.36**	-.27**	.43**	.32**	-		
General Success Difference	-.13	-.32**	-.30**	-.29**	-.22**	-.31**	.37**	.52**	.54**	-	
Valence IAT	-.11	-.11	-.12	-.07	-.11	-.04	.19**	.14	.14	.15	-
Success IAT	-.12	-.17*	-.12	-.10	-.21*	-.05	.10	.25**	.09	.21**	.25**

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

### 3.1.2.4 Correlations of Implicit Leadership Evaluations

**Intercorrelations of IATs:** The correlation between the valence and the success IAT was positive and significant ( $r = .25$ ,  $p < .01$ ). That is, stronger IAT effects on the valence IAT were related to stronger IAT effects on the success IAT implying that an implicit democratic valence preference was related to an implicit democratic success preference.

**Correlations with Explicit Leadership Measures:** The *valence IAT* showed a significant correlation with the explicit item-based valence difference ( $r = .19$ ,  $p < .05$ ), and marginal significant correlations with the difference scores of general valence ( $r = .14$ ,  $p < .10$ ). Thus, the stronger the valence IAT effects were the greater was the difference between valence of authoritarian and democratic leadership evaluations indicating a democratic valence preference on both implicit and explicit measures. The *success IAT* showed significant positive relations to the item-based success difference ( $r = .25$ ,  $p < .01$ ) and general success

evaluations ( $r = .21, p < .05$ ) implying congruence of responses on implicit and explicit leadership success measures.

**Correlations with Political Orientation, RWA and SDO:** The valence and the success IAT were uncorrelated with political orientation (all  $p > .15$ ). Analyses revealed no relation between the valence IAT and the full RWA scale or one of the subscales (all  $p > .16$ ). The success IAT, however, showed a significant negative correlation with the overall RWA scale ( $r = -.17, p < .05$ ) that was mainly driven by a significant negative correlation with conventionalism ( $r = -.21, p < .05$ ). Thus, the more conventional the participants were, the lower was their implicit democratic success preference. The correlations with the remaining two subscales were non-significant (all  $p > .16$ ). Neither the valence nor the success IAT was correlated with SDO.

### 3.1.2.5 Correlations of Explicit Leadership Measures

**Intercorrelations of Explicit Leadership Measures:** Correlational analyses revealed that the *item-based valence* and the *item-based success differences* were highly correlated ( $r = .45, p < .01$ ). Both were positively related to the general valence difference ( $r = .43, p < .01$ ;  $r = .32, p < .01$  respectively), and the general success difference ( $r = .37, p < .01$ ;  $r = .52, p < .01$ , respectively). The *general valence difference* showed a highly positive correlation with the *general success difference* ( $r = .54, p < .01$ ). Thus, explicit leadership measures showed moderate to high positive intercorrelations.

**Correlations with Political Orientation, RWA and SDO:** *Item-based valence differences* showed negative correlations with political orientation ( $r = -.34, p < .01$ ), the full RWA scale ( $r = -.42, p < .01$ ), all of its subscales (all  $r > .34$ , all  $p < .01$ ), and the SDO scale ( $r = -.32, p < .01$ ). Thus, the more unpleasant democratic and the more pleasant authoritarian items were evaluated the higher were political conservatism, RWA and SDO scores. *Item-based success differences* were negatively correlated with the full RWA scale ( $r = -.21, p < .01$ ), with the submission ( $r = -.24, p < .01$ ) and the aggression ( $r = -.22, p < .01$ ), but not with the conventionalism subscale ( $r = -.08, p > .36$ ). In addition, a negative relation between the item-based success difference and SDO yielded significance ( $r = -.23, p < .01$ ). The *general valence difference* was negatively related to political orientation ( $r = -.28, p < .01$ ), RWA ( $r = -.40, p < .01$ ) with all its subscales (all  $r > -.25$ , all  $p < .01$ ) and SDO ( $r = -.27, p < .01$ ). The *general success difference* showed significant negative correlations with the full RWA scale ( $r = -.32, p < .01$ ), its subscales (all  $r > -.22$ , all  $p < .01$ ), and SDO ( $r = -.27, p < .01$ ).

**Summary of results in regard of measurement validation:** As intended, implicit and explicit leadership measures correlated at least to some extent with each other. Explicit valence measures correlated higher with the valence IAT, and explicit success measures correlated higher with the success IAT, indicating two different underlying dimensions of valence and success. In addition, the success IAT was related to RWA, the explicit valence measures were correlated with political conservatism and all explicit leadership measures were related to RWA and SDO.

### 3.1.3 Discussion

In Study 1 newly developed implicit and explicit measures were introduced assessing valence and success evaluations of democratic and authoritarian leadership. In line with Hypothesis 1, on both implicit and explicit measures democratic leadership was clearly preferred over authoritarian leadership regarding valence and success, that is, the average standard attitude was democratic. Moreover, ratings on the general explicit leadership scales indicated higher extremity for valence than for success evaluations.

Reliabilities of the valence and the success IAT as well as of the general explicit valence and success scales were satisfying and correlations between implicit and explicit measures -though moderate- were substantial arguing for the validity of the new measures. These correlations are in line with previous meta-analyses that showed small to moderate correlations between implicit and explicit measures in various domains (Hofmann, Gawronski, Gschwendner, Le, & Schmitt, 2005; Nosek, Greenwald, & Banaji, 2005; Poehlman, Uhlmann, Greenwald, & Banaji, manuscript submitted for publication; see 2.6.1). Importantly, the correlation between the valence and the success IAT was only moderate and whereas the valence IAT was more strongly associated with explicit valence measures, the success IAT showed stronger relations to explicit success measures of leadership styles.

The success IAT was negatively related to RWA and in particular to conventionalism. That is, the more conventional the attitudes of participants were the weaker were the associations between democratic + success and authoritarian + failure. Correlations of the subscales assessing submission and aggression, however, failed level of significance. It seems reasonable that judgments regarding items of these subscales are subject to stronger social desirability effects than conventionalism items resulting in higher discrepancies between implicit and explicit evaluations. SDO showed no relation to the implicit measures and seems to tap a different dimension. These results indicate that the success IAT measures rather facets that are related to RWA (convergent validity) than to SDO (divergent validity).

Explicit leadership evaluations, both general and item-based, were highly correlated with political orientation, RWA and its subscales as well as with SDO, implying that all of

these measures share a general conservative belief and value system as an underlying dimension.

In sum, it can be argued that the implicit and explicit leadership measures developed for the purpose of the present dissertation are reliable and valid and can be used in the following studies.

### **3.2 Study 2 – The Authoritarian Reaction**

Study 1 demonstrates that in majority democratic leadership is favored over authoritarian leadership on the valence and on the success dimension. As this democratic preference is in line with democratic values of Western cultures, it is expressed on both explicit and implicit measures reflecting a democratic standard attitude in the absence of certainty. Hypothesis 2 of the present dissertation posits that under uncertainty low SEs show an authoritarian reaction. As authoritarian tendencies are, however, in conflict with general democratic beliefs, they should be rejected as an invalid basis for explicit judgments and only assessable via implicit measure, namely the IAT.

Previous research findings suggest that low SEs are more uncertain and less confident about themselves than SEs (e.g., Campbell, 1990; Campbell & Lavelle, 1993; see 2.4.1). In the present dissertation, however, it is argued that low SEs are not always aware of their self-uncertainty. It would be quite unadaptive to be chronically uncertain and this would lead to depressiveness (Edwards & Weary, 1993, see 2.3.3). Although low self-esteem is related to depression, not all low SEs are depressive. In the present dissertation it is argued that low SEs normally suppress thoughts about their self-uncertainty as far as they can and by this prevent themselves from becoming depressive. However, when filling out questionnaires about themselves, they are forced to think about their self-uncertainty and this should lead to awareness of and feelings of uncertainty. The salience of this trait self-uncertainty should be aversive and low SEs should be highly motivated to reduce the perceived feelings of uncertainty. Therefore, the main question investigated in Study 2 is whether for low SEs introspection and by this awareness of their own self-uncertainty would be sufficient to induce an authoritarian reaction. Dispositional uncertainty is made salient by presenting participants with questionnaires assessing trait uncertainty. It is expected that low SEs would become aware of their self-uncertainty by answering items of this sort and should, in consequence, strive to reduce the felt uncertainty. Doubting, however, to be able to resolve uncertainty themselves, they should exhibit an authoritarian reaction.

Salience of trait self-uncertainty is manipulated by varying the order of uncertainty and leadership measures. It is expected that assessing questionnaires of trait uncertainty *prior* to leadership measures functions as an introspective uncertainty manipulation for low SEs causing the authoritarian reaction. In contrast, assessing trait uncertainty *after* leadership



measures should leave leadership judgments unaffected. Without feelings of uncertainty there is no problem to solve and, in consequence, expectancies about one's own capability should be irrelevant for leadership evaluations. Low SEs not aware of their trait self-uncertainty should, therefore, rely on their democratic standard attitude.

Whereas the assessment of trait uncertainty should make self-uncertainty salient for low SEs, no such effect is expected for high SEs. They are assumed to be dispositionally self-certain (e.g., Campbell, 1990; Campbell & Lavalley, 1993) and trait uncertainty questionnaires should, therefore, leave them rather unaffected. Consequently, high SEs are expected to exhibit a democratic standard attitude.

As outlined in section 2.7, the expected authoritarian reaction of low SEs should be due to cognitive success expectations. Regarding valence judgments, it has been argued that democratic leadership communicates appreciation and respect (Tyler & Lind, 1992), whereas authoritarian leadership is linked to strong negative emotions (Bass, 1990; De Cremer, 2007; Judge, Piccolo, & Ilies, 2004; see 2.2.2). It is plausible that the affective preference for democratic over authoritarian leadership is independent of expectancy considerations and should be, therefore, less affected by uncertainty resolution attempts. As in previous research high and low SEs should differ on cognitive but not on affective measures (see 2.4.3). In addition, Study 1 provides empirical evidence that individuals hold more extreme valence than success attitudes towards democratic and authoritarian leaders and more extreme attitudes have been shown to be more resistant to change (see 2.2.3). Thus, high and low SEs are both expected to associate democratic leadership with positive and authoritarian leadership with negative emotions. As this democratic valence preference is clearly in line with general values and beliefs, it should be expressed on implicit and explicit measures. In contrast, whereas under uncertainty high SEs also associate democratic leadership with success and authoritarian leadership with failure, low SEs should evaluate democratic leadership –though pleasant- as less successful and authoritarian leadership – though the latter being clearly unpleasant- as more successful than under certainty. Thus, the authoritarian reaction should be expressed on success but not on valence measures. As the authoritarian reaction is inconsistent with general democratic values stronger effects on implicit than on explicit success measures are expected.

Authoritarianism and conservatism have been shown to play an important role in the reactions to threat and uncertainty (e.g., Jost et al. 2003; McCann, 2008; see Chapter 2.1.2). In order to show that the hypothesized moderating effects of self-esteem are independent of participant's political orientation it is included in the relevant statistical analyses as a covariate. In Study 1, the one item measure of political orientation (Jost et al., 2007) was strongly related to RWA and SDO and was, therefore, used in the present study as substitute for the much longer scales of RWA and SDO.

### 3.2.1 Method

#### 3.2.1.1 Participants

One hundred participants completed the online survey. Seven participants were excluded from data analyses because of higher error rates than 21% on IAT completion (3 participants on the valence IAT, 4 participants on the success IAT) resulting in a total sample size of 93 participants. Participants were recruited by an online pool of the University of Mannheim. The advertisement informed them that they would take part in a 20 minute study that aims at validating new attitude and personality measures and would in return receive the chance to win one of 10 book coupons (worth 10 Euro each). 37 (40%) participants were male, 56 (60%) female, aged 18 to 47 with an average age of 22.5 years ( $SD = 4.3$ ). In the main part, they were students (81, 87%) of various disciplines. They were on average in the 3.08 semester with a range from 1 to 14. The remaining 12 participants (13%) were employed or else. For the main part the first language was German (87, 94%). Those with a different first language stated to have learned German at least for 6 years ( $M = 12.83$ ,  $SD = 5.53$ ).

#### 3.2.1.2 Design

In a between-subject design, participants were randomly assigned to the order and IAT conditions (Table 6). Half of the participants at first completed the personality questionnaires assessing self-esteem and trait self-uncertainty, whereas the other half started with the implicit and explicit evaluations of democratic and authoritarian leadership. Participants completed either the valence or the success IAT. Subsequently, both explicit valence and success evaluations of authoritarian and democratic leadership were assessed in counterbalanced order.

Table 6. *Between-subject design of Study 2*

	Valence IAT		Success IAT	
	High SEs	Low SEs	High SEs	Low SEs
Trait Uncertainty assessed after				
Trait Uncertainty assessed before				

#### 3.2.1.3 Experimental Procedure and Materials

Participants entered the experiment via the internet. They were informed that the study aimed at validating new personality measures and that they would take part in a reaction time task. All participants agreed to informed consent and were asked for demographic standard information and their political orientation (9-point scale ranging from 1 = extremely liberal and 9 = extremely conservative; Jost et al., 2007). On average, participants stated to be more liberal than conservative in their political orientation, the sample mean was  $M = 4.15$

( $SD = 1.40$ ). In the *salience condition*, participants at first completed the personality questionnaires assessing self-esteem and self-uncertainty to make low SEs aware of their trait uncertainty. The implicit and explicit leadership measures validated in Study 1 were administered afterwards. In the *no salience condition*, participants at first completed the implicit and explicit leadership measures and afterwards filled out the personality questionnaires. In both conditions the implicit leadership measures preceded the explicit ones. For all participants the last pages provided the possibility to take part in the lottery and a careful debriefing following APA suggestions.

**Self-Esteem:** In order to assess global self-esteem, a German version of the Rosenberg's (1965) Self-Esteem Inventory (Ferring & Filipp, 1996) was administered. A sample item is "I feel that I am a person of worth, at least on an equal basis with others". Participants responded to each of the 10 items on a 4-point scale (ranging from 1 = strongly disagree to 4 = strongly agree). After reverse coding the negatively worded items, each individual's scores on the 10 items were averaged to create a total score whereby high scores indicated high self-esteem. The internal consistency of the scale was high (Cronbach's  $\alpha = .92$ ), and the sample mean of self-esteem was  $M = 3.24$  ( $SD = 0.62$ ).

**Self-Uncertainty:** Following De Cremer and Sedikides (2005), trait self-uncertainty was operationalized in terms of self-esteem instability. This concept is defined as "the magnitude of short term fluctuations in individuals' contextually based current self-esteem" (Kernis et al., 1998, p. 658). The Labile Self Esteem Scale (Dykman, 1998) assesses the perceived instability of self-esteem level; that is the extent to which self-esteem is fluctuating or stable over time. A sample item is "Compared to most people, my self-esteem shifts rapidly from feeling good about myself on one day to feeling bad about myself the next day". Items were translated into German and responses were given on a 5-point scale (ranging from 1 = strongly disagree to 5 = strongly agree). The five items were highly interrelated (Cronbach's  $\alpha = .92$ ), and the sample mean of self-esteem instability was  $M = 2.45$  ( $SD = 1.02$ ).

Greco and Roger (2001) introduced the Uncertainty Response Scale for measuring styles of coping with uncertainty. The Emotional Uncertainty subscale assesses to what extent participants experience uncertainty as emotionally threatening. The subscale consists of 15 items. A sample item is "When uncertain about what to do next, I tend to feel lost". Items were translated into German and answers were given on 7-point scale (ranging from 1 = strongly disagree to 7 = strongly agree). Items were combined to a single measure of emotional uncertainty with higher values indicating higher levels of emotional uncertainty.

The subscale was internally consistent (Cronbach's  $\alpha = .93$ ), with participants' mean degree of emotional uncertainty being  $M = 3.48$  ( $SD = 1.20$ ).

Expecting that answering the trait uncertainty questionnaires would lead to higher momentary uncertainty in low SEs compared to high SEs, the momentary thoughts of uncertainty were assessed afterwards by the following two questions: "Have you just thought of uncertainty?" (ranging from 1 = by no means to 9 = by all means) and "How intensely did you think of uncertainty?" (ranging from 1 = very weakly to 9 = very strongly). The two items assessing momentary thought of uncertainty were strongly intercorrelated ( $r = .86$ ,  $p < .01$ ) and thus combined into a single index. The sample mean was  $M = 4.80$  ( $SD = 2.36$ ).

**Leadership Measures:** In order to unravel the different reactions in the evaluation of leadership styles, the newly developed implicit and explicit measures that discriminate valence from success evaluations were employed (see Study 1). Participants either completed the valence or the success IAT. Reliability was satisfying (valence IAT: Cronbach's  $\alpha = .74$ ; success IAT: Cronbach's  $\alpha = .75$ ). The average z-standardized valence IAT effect was  $M = 0.65$  ( $SD = 0.35$ ). The average z-standardized success IAT effect was  $M = 0.50$  ( $SD = 0.39$ ).

Subsequently, participants were asked to indicate their general explicit valence and success evaluations of democratic and authoritarian leadership resulting in four subscales with high internal consistencies: general valence of democratic leadership (Cronbach's  $\alpha = .86$ ), general valence of authoritarian leadership (Cronbach's  $\alpha = .82$ ), general success of democratic leadership (Cronbach's  $\alpha = .86$ ), and general success of authoritarian leadership (Cronbach's  $\alpha = .86$ ). Difference scores were calculated to determine relative leadership preferences for valence and success. On average, the difference score of general valence was  $M = 4.04$  ( $SD = 1.74$ ) and the difference score of general success  $M = 1.36$  ( $SD = 2.25$ ).

### 3.2.2 Results

**Self-Esteem and Self-Uncertainty:** Importantly, the experimental conditions did not differ in self-esteem, self-esteem instability, emotional uncertainty, or momentary thoughts of uncertainty (all  $p > .19$ ). In order to investigate the hypothesis that low SEs report higher trait uncertainty and think more of uncertainty when answering questionnaires regarding uncertainty than SEs, correlations were calculated between self-esteem level and measures of uncertainty. As expected, the negative correlations of self-esteem level with self-esteem instability ( $r = -.58$ ,  $p < .001$ ), emotional uncertainty ( $r = -.63$ ,  $p < .001$ ), and momentary thoughts of uncertainty ( $r = -.32$ ,  $p < .001$ ) yielded significance regardless of order condition, thus low SEs reported in general stronger uncertainty than high SEs.

Self-esteem instability, emotional uncertainty and momentary thoughts of uncertainty were included in all subsequent analyses as covariates in order to control for possible general effects of self-uncertainty. However, no such effects emerged (all  $p > .21$ ) and therefore self-esteem instability, emotional uncertainty and momentary thoughts of uncertainty were dropped from the analyses reported below.

**Explicit Leadership Measures:** Two independent hierarchical regression analyses were conducted in which relative leadership favoritism on the valence and on the success dimension were predicted by order of measures and self-esteem level in Step 1 and by their interaction in Step 2. Political orientation was included as a covariate. Following Aiken and West (1991), self-esteem and political orientation scores were centered (i.e., by subtracting the general mean from the score) and the interaction term was based on the centered values. Centering was used in all hierarchical regression analyses reported in the present dissertation.

For the *valence dimension*, the difference score of leadership preferences was negatively related to the covariate,  $\beta = -.29$ ,  $t(89) = -2.97$ ,  $p < .01$ , such that higher conservatism implied lower preferences for democratic leadership. The order of measures was unrelated to the explicit valence evaluations,  $\beta = -.07$ ,  $t(89) = -0.73$ ,  $p > .47$ . Self-esteem level was positively related to leadership preferences,  $\beta = .24$ ,  $t(89) = 2.47$ ,  $p < .05$ , thus the higher the self-esteem level, the stronger the preference for democratic leadership was (this is in line with Brockner et al., 1998, see 2.4.2). The interaction between order conditions and self-esteem was non-significant,  $\beta = .17$ ,  $t(88) = 0.55$ ,  $p > .59$ , (overall  $F(4,88) = 4.18$ ,  $p < .01$ ,  $\Delta R^2 = 0.12$ ).

For the *success dimension*, there was a marginal significant main effect for political orientation,  $\beta = -.18$ ,  $t(89) = -1.75$ ,  $p < .10$ , thus the more conservative participants were, the lower were their success evaluations of democratic compared to authoritarian leadership. Order of measurement,  $\beta = .08$ ,  $t(89) = 0.76$ ,  $p > .45$ , and self-esteem,  $\beta = .10$ ,  $t(89) = -0.92$ ,  $p > .37$ , however, were unrelated to explicit leadership preferences. The interaction term was also non-significant,  $\beta = .09$ ,  $t(88) = 0.28$ ,  $p > .78$  (overall  $F(4,88) = 1.32$ ,  $p < .27$ ,  $\Delta R^2 = 0.01$ ).

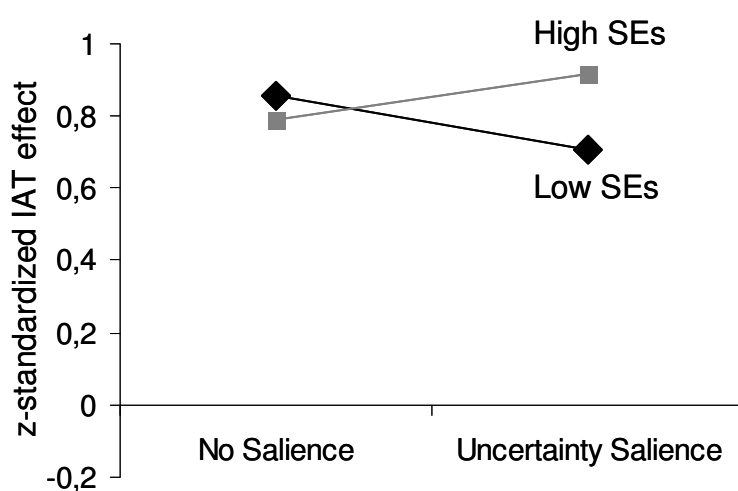
**Implicit Leadership Measures:** Hierarchical regression analyses for the valence and the success IAT were conducted separately, including order of measures, self-esteem and political orientation as covariate in Step 1 and the interaction term in Step 2.

For the *valence dimension*, political conservatism was not significantly related to implicit leadership preferences,  $\beta = -.10$ ,  $t(44) = -0.67$ ,  $p > .50$ . IAT effects were uncorrelated with order of measures,  $\beta = -.01$ ,  $t(44) = -0.05$ ,  $p > .96$ , and self-esteem level,  $\beta = .15$ ,

$t(44) = 0.98, p > .33$ . As expected, the interaction between order of measures and self-esteem was also non-significant,  $\beta = .64, t(43) = 1.22, p > .22$  (overall  $F(4,43) = 0.80, p > .53, \Delta R^2 = -0.02$ ). IAT effects were positive in both order conditions and for high and low SEs, implying that the strong associations between democratic + pleasant and authoritarian + unpleasant were unaffected by uncertainty considerations of low SEs. Simple slopes are depicted in Figure 5A.

For the *success dimension*, the political orientation was unrelated to IAT effects,  $\beta = .03, t(41) = .22, p > .82$ . There was a significant main effect for order of measures,  $\beta = -.30, t(41) = -2.08, p < .05$ , and leadership preferences were in tendency positively related to level of self-esteem,  $\beta = .29, t(41) = 2.00, p < .10$ . Importantly and in line with hypotheses these main effects were qualified by a significant interaction between order of measures and self-esteem,  $\beta = .42, t(40) = 2.42, p < .05$  (overall  $F(4,40) = 3.48, p < .05, \Delta R^2 = .18$ ). Simple slopes analyses revealed that the relationship between IAT effects and order of measures was much stronger for low SEs (one standard deviation below the mean, see Aiken & West, 1991),  $\beta = -.55, t(40) = -3.27, p < .01$ , than for high SEs (one standard deviation above the mean),  $\beta = .03, t(40) = 0.18, p > .86$ . Thus as expected, when self-uncertainty was made salient, low SEs showed stronger associations of democratic + failure and authoritarian + success as well as weaker associations between democratic + success and authoritarian + failure compared to low SEs in the no salience condition and high SEs in both conditions. Simple slopes are depicted in Figure 5B.

A) Valence IAT



## B) Success IAT

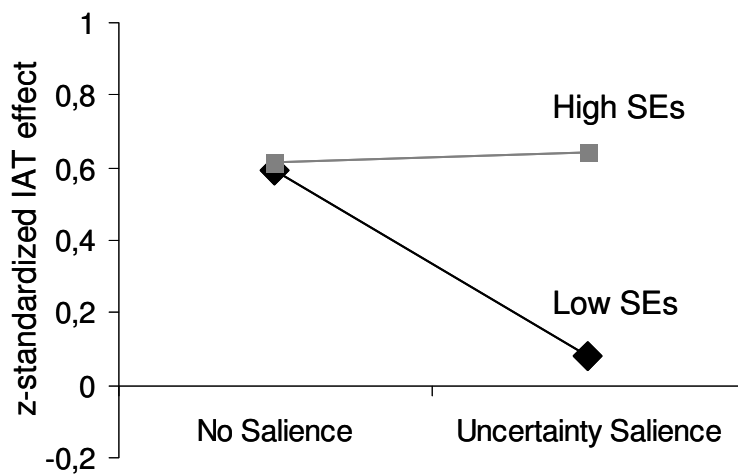


Figure 5. Z-standardized IAT effects as a function of self-esteem and uncertainty salience (no salience: IAT assessed before personality questionnaires vs. uncertainty salience: IAT assessed after personality questionnaires) for (A) implicit valence and (B) implicit success associations in Study 2.

### 3.2.3 Discussion

Study 2 investigated whether the mere awareness of one's own trait self-uncertainty can induce an authoritarian reaction in low SEs. In line with the assumption that low SEs would report more trait uncertainty than high SEs, correlations between self-esteem and measures of uncertainty were significantly negative, that is, higher self-esteem was related to lower reported levels of trait uncertainty and vice versa. As high SEs had no reason to feel uncertain, they, consistently, exhibited a democratic standard attitude on explicit and implicit leadership measures of success. In contrast, low SEs showed the expected drop in their success preference for democratic leadership when trait uncertainty was made salient prior to leadership evaluations relative to low SEs in the no salience condition and high SEs in both conditions. In addition, this effect emerged only on the implicit but not on explicit success measure. As positive associative success evaluations of authoritarian leadership are in conflict with general democratic values and social desirability motivations, it is likely that they were rejected as invalid for explicit judgments, explaining why the authoritarian reaction was only found on implicit and not on explicit measures.

Supporting the assumption of an authoritarian reaction, success IAT effects were significantly lower for low SEs in the salience condition than for all other groups, but they still remained positive indicating a drop in the implicit democratic preference but not a reversal to an authoritarian preference. One could argue whether this is really an authoritarian reaction. Success IAT effects are the difference of the mean IAT response latencies to democratic + success and authoritarian + failure subtracted by democratic + failure and authoritarian +

success. Thus, a drop in IAT effects indicate weaker associations between democratic + success and authoritarian + failure and stronger associations between democratic + failure and authoritarian + success. As IAT effects are always relative, lower IAT effects in the salience condition imply a decrease in the preference for democratic leadership on the one hand *and* an increase in the preference for authoritarian leadership on the other.

IAT effects in the remaining conditions are interpreted as the democratic standard attitude. Standard means the democratic attitude that is stored in the general belief system and accessed when the situation indicates no otherwise processing. Divergence from this standard is seen as a reaction due to specific context cues. Following Gawronski and Bodenhausen (2006) the lower IAT effects for low SEs in the salience condition can be interpreted as temporal changes in pattern activation, in this case, the link between authoritarian + success becomes activated. Therefore, divergence in the downward direction can be interpreted as an authoritarian reaction as it is less democratic for the benefit of authoritarian leadership. Taking into account that participants were university students mainly liberal in their political orientation, the found drop in democratic success preferences of low SEs is remarkable.

Evaluations on the valence dimension were not significantly affected by the assessment order of trait uncertainty and leadership measures, that is, the awareness of one's trait self-uncertainty had no significant effect on implicit or explicit valence evaluations of leadership. This is in line with prior research that showed differences between high and low SEs only on cognitive but not on affective measures (see 2.4.3). Nevertheless, this does not necessarily mean that valence evaluations will not change in the long run in order to dissolve the attitude ambivalence (see 2.2.3) produced by the conflicting valence and success components. This will be discussed in more detail in section 4.3.1. As the effects were much stronger on the success IAT and changes on the valence IAT are supposed to be a consequence of attitude ambivalence rather than due to primary changes on the valence dimension the following studies will only employ the success IAT but not the valence IAT.

In summary, the results of Study 2 indicate that mere introspection processes are sufficient to induce an authoritarian reaction in low SEs. This authoritarian reaction seems to have an impact on cognitive success but not on affective valence evaluations and is only expressed on implicit but not on explicit success measures of leadership styles. Due to their self-certainty, introspection had no effect on high SEs. This leaves open the question what impact feelings of uncertainty would have on them and their leadership evaluations. Therefore, in Study 3b and 4b (presented below) uncertainty is manipulated experimentally via a priming procedure in order to examine the reactions of both low and high SEs to feelings of uncertainty.



### 3.3 Power as (Re-) Solution

Study 1 and Study 2 already demonstrated that in the absence of uncertainty, most of the participants clearly preferred democratic over authoritarian leadership on the valence and on the success dimension as well as on explicit and implicit measures. This is in line with prior research showing a strong aversion to authoritarian leadership in Western societies (see 2.2.2). The preference for democratic leadership seems to be well-established in Western cultures and can, therefore, be defined as the democratic standard attitude the majority holds explicitly and implicitly. Study 2 provides empirical evidence that making trait self-uncertainty salient induces an authoritarian reaction in low SEs. In order to replicate this finding and additionally test Hypothesis 3 that high SEs show a democratic reaction to uncertainty, uncertainty is induced experimentally in Study 3b and Study 4b by the manipulation introduced by Van den Bos (2001, see 2.3.1).

Moreover, Study 3b and 4b investigate whether the salience of high power is a means to prevent low SEs from their authoritarian reaction to uncertainty (Hypothesis 4). The two alternative effects of high power salience proposed in Hypothesis 4 are tested against each other. That is, high and low SEs show a democratic reaction or both show a democratic standard attitude. However, in both cases it is expected that the authoritarian reaction of low SEs is cancelled out. In contrast, under salience of low power the authoritarian reaction of low SEs and the democratic reaction of high SEs should remain as if the power was not salient (Hypothesis 5).

To test Hypothesis 4 and Hypothesis 5, two different manipulations of power are employed. One manipulation (Study 3a & 3b) involves making the dispositional power of individuals salient. The other manipulation of power involves letting participants imagine being in a leader versus a follower position (Study 4a & 4b). To date only few and complex measures of power exist (e.g., the Thematic Apperception Test (TAT); Morgan & Murray, 1935). Therefore, in a first step, a new measure – the Spatial Power Measure – has been developed. Study 3a aims at validating this new instrument as a power measure. In Study 3b individuals' power is assessed and made salient via the Spatial Power Measure and the reactions to uncertainty of high and low power individuals regarding explicit and implicit leadership evaluations are examined. In Study 4a the effects of the experimental power manipulation on the Spatial Power Measure is tested. Study 4b employs the experimental power manipulation and investigated its impact on leadership measures after uncertainty induction.

### 3.4 Study 3a – Dispositional Power

Drawing on a social embodiment perspective, Schubert (2005) argues that differences in power are in part represented as differences in vertical position in space. He presented participants with propositions describing an agent as more powerful than (e.g., “● has influence on ○”), as more powerless than (e.g., “● is weaker than ○”), or as power-neutral (e.g., “● points toward ○”) to a patient. The agent was represented by a black circle, the patient by a white circle (or reversed). These propositions were each arranged above eight pictures depicting eight possible angles between the two circles representing agent and patient (see Figure 6). The task was to select the picture that best fitted the proposition. As hypothesized, powerful and powerless propositions were associated with vertical angles. For high power the agent was above and for low power the agent was below the patient. Equal propositions were associated with horizontal depictions.

Following this perspective, for the development of the new Spatial Power Measure it was assumed that individuals mentally represent differences of power by vertical differences (high and low positions) in space. Study 3a sets out to demonstrate that differences in vertical positions individuals ascribe to themselves exist and can be interpreted as perceived differences in power. Specifically, the goal is to show that the Spatial Power Measure is internally consistent and correlated with constructs related to power, but not with constructs unrelated to power.

#### 3.4.1 Method

##### 3.4.1.1 Participants

Seventy four participants from the University of Mannheim participated in return for a chocolate bar (value approximately 1.50 USD) in an experiment labeled “Self-perception and Personality”. 30 (41%) participants were male, 44 (59 %) female, aged 19 to 43 with an average age of 23.7 years ( $SD = 3.7$ ). In the main part, they were students (72, 97%) of various disciplines. They were on average in the 5.53 semester with a range from 1 to 13. The remaining 2 participants (3%) were employed or else. For the main part the first language was German (62, 84%). Those with a different first language stated to have learned German for at least 2 years ( $M = 14.71$ ,  $SD = 8.45$ ). Participants completed the experimental materials individually.

##### 3.4.1.2 Experimental Procedure and Materials

Participants were approached in the university library. After reading and signing informed consent, each participant was given a questionnaire packet and asked to complete the booklet following the order of questions. The packet started with demographic information and participants stated their political orientation on a 9-point scale (ranging from

1 = extremely liberal to 9 = extremely conservative; Jost et al., 2007). On average, participants stated to be more liberal than conservative in their political orientation, the sample mean was  $M = 4.23$  ( $SD = 1.50$ ). Participants, then, completed the Spatial Power Measure. Subsequently, they filled out questionnaires regarding general values, leadership motivation, dominance and self-esteem. Finally, participants were debriefed following APA suggestions, remunerated and thanked for their participation. The different measures administered in the present study are described in detail below.

**Spatial Power Measure (SPM):** Following Schubert (2005), it was hypothesized that higher power can be represented by higher vertical positions in space. Adopted from him, eight different pictures with a black and a white circle arranged in different angles (see Figure 6) were arranged in pairs of 56 different combinations. These 56 pairs encompassed all possible combinations and presentation orders. The instruction asked participants to imagine them being the black, another person being the white circle (or reversed) and to choose that picture of a pair that matched them better. Half of the participants were asked to imagine being the black, the other half being the white circle. In total, participants made 56 decisions between all possible combinations of these eight pictures. To compute a mean score of power each answer was scored as seen in Figure 6: Vertical angles with the circle representing oneself at the bottom were scored as 1 and vertical angles with the circle representing oneself at the top were scored as 5. Horizontal angles were scored as 3, diagonal angles above the horizontal were scored as 4 and diagonal angles below as 2, resulting in a continuum ranging from 1 to 5. As vertical differentials were the main focus, whether the circle representing oneself was on the left or right side was not taken into account although horizontal information can also reflect differences in power (e.g., Maass, Pagani, & Berta, 2007). Responses were averaged over all 56 choices. The internal consistency of the SPM was high (Cronbach's  $\alpha = .90$ ) and the sample mean was  $M = 3.09$  ( $SD = 0.44$ ). Full details on the SPM and the German instructions are provided in Appendix B.

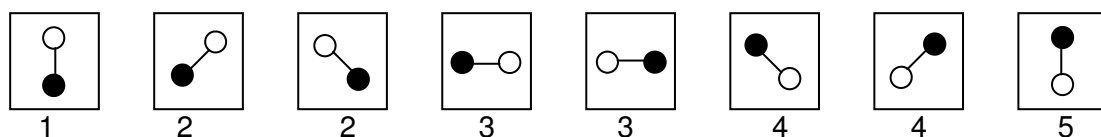


Figure 6. Depictions of eight different angles between the black and the white circle adopted from Schubert (2005), and values scored for each picture when imagining being the black circle (values are not shown in the original questionnaire).

**Demographic Variables:** Previous research reported differences in levels of power between men and women due to their different social roles (Keltner et al., 2003), also suggesting a correlation between the SPM and gender. Regarding the study subject it was assumed that participants studying economics or a related subject would more strongly strive for a leadership position and have a higher power motive than participants of non-economic subjects. Therefore, for analyses participants were divided into two major groups, economics and non-economics. As political orientation has been shown to correlate with SDO (Pratto et al., 1994) that assesses hierarchical relations, also a relation between political orientation and SPM was expected.

**Portrait Values Questionnaire (PVQ):** The PVQ was designed to assess basic values which are conceived as general attitudes and goals guiding behavior (Schwartz, 1994). The questionnaire comprises 40 items, each item consisting of a description of a person ("portrait") with two sentences. Participants were presented with a German version of the scale (Hinz, Brähler, Schmidt, & Albani 2005) and asked to state how similar they were to the portrayed person on a 6-point scale (ranging from 1 = very similar to 6 = very dissimilar). The 40 items belonged to the following 10 scales (2-6 items per scale): power, achievement, hedonism, stimulation, self-direction, universalism, benevolence, tradition, conformity, and security.

According to Schwartz' (1992, 1994) model (see Figure 7), these value constructs are more or less related to each other and can be combined to four different underlying motivations. Power and achievement both motivate *self-enhancement* and oppose to universalism and benevolence that motivate *self-transcendence*. Stimulation and self-direction values, both reflecting the motivation of *openness to change*, oppose to tradition, conformity and security values with the underlying motivation of *conservatism*. Hedonism shares elements of both openness and self-enhancement.

Of main interest in the present study were the values power, achievement, and universalism. First of all, the power value should be correlated with SPM which is aimed to be a power measure itself. The PVQ conceptualizes power as social status and prestige as well as control over others and resources. A sample item was "He/she likes to be in charge and tell others what to do. He/she wants people to do what he/she says." As power and achievement share the same underlying motive of self-enhancement, a correlation between the achievement value and SPM was expected. In the PVQ, achievement is characterized by the wish to demonstrate personal success and competence. A typical item is "Being very successful is important to him/her. He/she likes to stand out and to impress other people". According to Schwartz' (1992, 1994) model, universalism opposes power. Therefore, a negative relation between universalism and SPM was predicted. Universalism is conceived

of as appreciation and tolerance for others and is measured by items like “He/she thinks it is important that every person in the world should be treated equally. He/she wants justice for everybody, even for people he/she doesn’t know”. The three subscales power (Cronbach’s  $\alpha = .68$ ), achievement (Cronbach’s  $\alpha = .77$ ), and universalism (Cronbach’s  $\alpha = .78$ ) of the PVQ were internally consistent. The sample mean for power was  $M = 3.78$  ( $SD = 0.93$ ), for achievement  $M = 4.44$  ( $SD = .81$ ), and for universalism  $M = 4.61$  ( $SD = 0.74$ ).

According to Schwartz’ (1994) model all other values of the PVQ, namely hedonism, stimulation, self-direction, tradition, conformity, and security are much less related to power and should therefore yield no substantial correlation with the SPM.

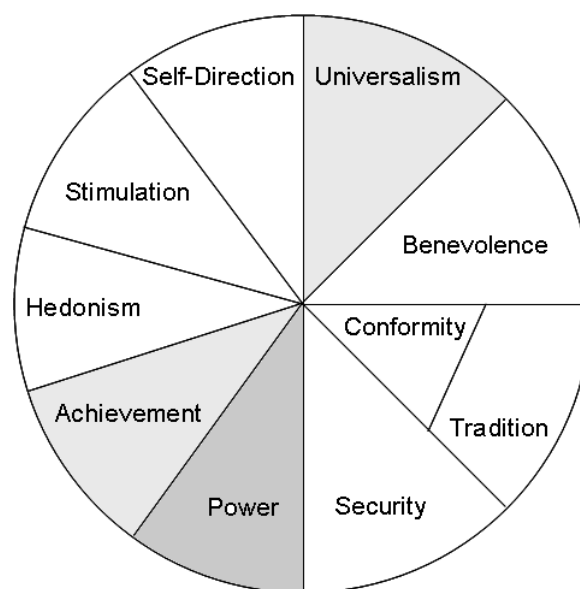


Figure 7. Theoretical model of relations between the 10 values adopted from Schwartz et al. (2001).

**Leadership Motivation and Dominance:** The leadership motivation subscale of the German Business-Focused Inventory of Personality (Hossiep & Paschen, 2003) consists of 15 items assessing the motive to influence others, the preference for leadership tasks and the self-reported judgment that one represents a standard for others. A sample item was “I like to have the responsibility for important decisions”. Answers were given on a 7-point scale (ranging from 1 = strongly disagree to 7 = strongly agree). The subscale was internally consistent (Cronbach’s  $\alpha = .87$ ), with participants’ mean degree of leadership motivation being  $M = 4.27$  ( $SD = 0.88$ ). The dominance subscale of the German Achievement Motivation Inventory (Schuler & Prochaska, 2001) presented participants with 10 items assessing the tendency to have power over and influence on others. A sample item was “I like to decide what others have to do”. Answers were given on a 7-point scale (ranging from 1 = strongly disagree to 7 = strongly agree). The 10 items were also highly interrelated

(Cronbach's  $\alpha = .78$ ), and the sample mean of dominance was  $M = 4.97$  ( $SD = 0.74$ ). As leadership and dominance are related concepts of power, both scales were expected to correlate with the SPM.

**Self-Esteem:** The level of self-esteem was assessed via the German version of Rosenberg's (1965) Self-Esteem Inventory (see Study 2). The internal consistency of the scale was high (Cronbach's  $\alpha = .85$ ), and the sample mean of self-esteem was  $M = 3.38$  ( $SD = 0.46$ ). Both self-esteem and power are expected to induce self-confidence and may therefore have comparable impact on various outcome variables. However, they are conceived as different constructs and are not necessarily correlated.

### 3.4.2 Results

**Correlations with Demographic Variables and Political Orientation:** The correlation between the SPM and gender failed significance ( $r = -.18$ ,  $p > .12$ ), but was in the direction that men showed higher power scores than women. Participants were of various disciplines. Divided into economics and non-economics, both groups differed significantly from each other. As hypothesized economics ( $M = 3.22$ ,  $SD = 0.43$ ) scored higher on the SPM than non-economics ( $M = 2.95$ ,  $SD = 0.42$ ,  $F(72) = 7.46$ ,  $p < .01$ ). There was a marginally significant positive correlation between the SPM and political orientation ( $r = .22$ ,  $p < .10$ ), that is, the more conservative participants were the higher were their power ratings.

**Correlations with Portrait Values:** As expected, both power and achievement yielded a significant positive correlation ( $r = .54$ ,  $p < .001$ , and  $r = .31$ ,  $p < .01$ , respectively), whereas universalism showed a significant negative correlation ( $r = -.29$ ,  $p < .05$ ) with the SPM. In line with hypotheses, hedonism, stimulation, self-direction, tradition, conformity, and security were not significantly related to the SPM (all  $p > .19$ ).

**Correlations with Leadership Motivation and Dominance:** Both the leadership motivation and the dominance subscale yielded a significant positive correlation with the SPM ( $r = .28$ ,  $p < .05$ , and  $r = .26$ ,  $p < .05$ , respectively).

**Correlation with Self-Esteem:** The correlation between self-esteem and the SPM was not significant ( $r = .11$ ,  $p > .34$ ).

**Partial Correlations:** Strikingly, when controlling for the power subscale of the PVQ, none of the correlations between the SPM and all other assessed variables remained significant

(all  $p > .12$ ). In contrast, the correlation between power and the SPM remained substantial and significant, even when all other variables were partialled out ( $r_{\text{par}} = .43, p < .01$ ).

Correlations summarizing convergent and discriminant validity of the SPM are presented in Table 7 and Table 8.

Table 7. *Coefficient alphas, correlations with SPM, and partial correlations controlling for power (PVQ) of convergent measures*

<b>Convergent Validity</b>			
<b>Measures</b>	Coefficient alphas	Correlations	Partial Correlations
Gender	-	-.18	-.18
Political Conservatism	-	.22	.07
Study Subject	-	-.31**	-.14
Power (PVQ)	.68	.54**	-
Achievement (PVQ)	.77	.31**	-.11
Universalism (PVQ)	.78	-.29*	-.12
Leadership Motivation (BIP)	.87	.28*	-.13
Dominance (LMI)	.78	.26*	-.14

*Notes.* Negative correlations with gender and study subject indicate that men scored higher on the SPM than women and economics higher than non-economics. The positive correlation with political conservatism indicates that conservatives scored higher than liberals.

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

Table 8. *Coefficient alphas, correlations with SPM, and partial correlations controlling for power (PVQ) of discriminant measures*

<b>Discriminant Validity</b>			
<b>Measures</b>	Coefficient alphas	Correlations	Partial Correlations
Hedonism (PVQ)	.85	.09	.04
Stimulation (PVQ)	.60	.05	.08
Self-Direction (PVQ)	.61	-.03	-.03
Benevolence (PVQ)	.76	-.15	-.08
Tradition (PVQ)	.62	-.13	-.15
Conformity (PVQ)	.67	-.02	-.09
Security (PVQ)	.74	.07	-.13
Self-Esteem (RSE)	.85	.11	.11

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

### 3.4.3 Discussion

Study 3a was designed to validate the SPM as a power measure and results are in line with hypotheses. Emphasizing convergent validity the SPM correlated with power and the related value of achievement. Universalism, in Schwartz' model (1992) conceived as the opposite of power, consistently showed a negative relation to the SPM. In addition, the SPM correlated with leadership motivation and dominance. Men exhibited higher scores on the SPM than women. The negative correlation, however, failed the level of significance. Thus, in contrast to other power measures, the SPM seems to be less influenced by traditional gender roles. Participants studying economics scored higher on the SPM than non-economics and political conservative individuals differed in tendency from their political liberal counterparts. Most importantly, when the value of power was partialled out none of these correlations remained significant. Evidence for discriminant validity can be drawn from the result that the SPM yielded no significant correlation with the values of hedonism, stimulation, self-direction, benevolence, tradition, conformity, and security. In addition, self-esteem was unrelated to the SPM. This was important because Study 3b aimed at investigating the independent impact of self-esteem and power on leadership evaluations under uncertainty. Taken together, these findings strongly argue for the validity of the SPM as a measure of power.

### 3.5 Study 3b – Salience of Dispositional Power as (Re-)Solution

Study 2 demonstrated that the mere assessment of personality questionnaires was sufficient to induce an authoritarian reaction in low SEs due to their high level of trait uncertainty. As Study 2 focused on the impact of dispositional uncertainty, high SEs' reactions to feelings of uncertainty could not be examined. Study 3b set out to extend the findings of Study 2 by experimentally manipulating feelings of uncertainty. Self-certainty and self-uncertainty are induced in both high and low SEs via a priming procedure adopted from Van den Bos (2001, see 2.3.1). It is hypothesized that under certainty participants would rely on their democratic standard attitude because they perceived no threat and the goal of uncertainty reduction was not activated (Hypothesis 1). Under uncertainty, however, it is expected that low SEs would show the same drop in their implicit success evaluations of democratic leadership as in Study 2 due to doubts in their own abilities to resolve the uncertainty (Hypothesis 2). In contrast, high SEs are expected to react with an increase in their democratic success preferences due to their belief that they are capable of providing a meaningful input in the uncertainty resolving process (Hypothesis 3).

In addition, the influence of the salience of dispositional power is examined by assessing the SPM at the beginning of the experiment. It is expected that the awareness of being powerful enhances general self-confidence, by this counteracts to the authoritarian reaction and leads to either a democratic reaction or a democratic standard attitude



(Hypothesis 4). Being aware of having low power, in contrast, should lead to the same pattern as being unaware of one's power activating an authoritarian reaction in low SEs and a democratic reaction in high SEs (Hypothesis 5).

Study 2 already demonstrated that the affective evaluations of leadership were not significantly influenced by uncertainty. Therefore, as the assessment of the implicit leadership evaluations is extensive and time consuming, in Study 3b only the success IAT but not the valence IAT is employed. Again, social desirability effects are expected to lead to stronger effects on implicit than explicit leadership measures.

### 3.5.1 Method

#### 3.5.1.1 Participants

One hundred and sixty students from the University of Mannheim volunteered to take part in an experiment labelled 'Leadership and Personality' in return for 2 EUR and a chocolate bar. Twelve participants were excluded from further analyses because of higher error rates than 21% on IAT completion resulting in a total sample size of 148 participants. 74 (50%) participants were male, 74 (50%) female, aged 18 to 33 with an average age of 21.6 years ( $SD = 2.9$ ). They were all students (100%) of various disciplines. On average participants were in the 3.79 semester with a range from 1 to 16. For the main part, the first language was German (135, 91%). Those with a different first language (12, 8%) stated to have learned German for at least 11 years ( $M = 16.55$ ,  $SD = 3.56$ ). The study was run with up to eight participants at a time.

#### 3.5.1.2 Design

In a between-subject design, participants were randomly assigned to the uncertainty priming conditions (Table 9). Half of the participants were primed with state self-uncertainty; the other half were primed with state self-certainty. Levels of participants' self-esteem and power were assessed via questionnaires.

Table 9. *Between-subject design of Study 3b*

	Salience of High Power		Salience of Low Power	
	High SEs	Low SEs	High SEs	Low SEs
Certainty Manipulation				
Uncertainty Manipulation				

#### 3.5.1.3 Experimental Procedure and Materials

On arrival to the laboratory, participants signed informed consent, were escorted to a computer and stated standard demographic information as well as their political orientation

(7-point scale ranging from 1 = extremely left to 7 = extremely right). In order to rule out that effects were merely due to political conservatism the variable was included as a covariate in the analyses reported below. On average, participants were more left than right in their political orientation, the sample mean was  $M = 3.50$  ( $SD = 1.04$ ). The order of measures and experimental manipulations was as follows. First, dispositional power was made salient for all participants. Second, state self-uncertainty was experimentally induced via a priming procedure. Third, in order to control for potential mood effects positive and negative affect was assessed. Fourth, all participants completed the implicit and explicit leadership measures. Fifth, participants completed a packet of personality questionnaires regarding self-esteem and self-uncertainty. This time, the questionnaires were administered at the end of the experiment and not at the beginning as in Study 2 in order to investigate the pure impact of the experimental uncertainty manipulation without the salience of trait uncertainty. Study 2 already demonstrated that the questionnaires themselves can induce uncertainty. Finally, participants were debriefed following APA suggestions, remunerated, and thanked for their participation.

**Power Measure:** The dispositional power participants attributed to themselves was made salient by administering the SPM validated in Study 3a. The internal consistency of the SPM was high (Cronbach's  $\alpha = .88$ ), and the sample mean was  $M = 3.15$  ( $SD = 0.39$ ).

**Uncertainty Manipulation:** In order to experimentally manipulate uncertainty participants responded to the following two questions that were adopted from Van den Bos (2001): "Please briefly describe the emotions that the thought of you being self-uncertain arouses in you" and "Please write down, as specifically as you can, what you think will physically happen to you as you feel self-uncertain." Participants in the certainty condition answered to the same questions, except that they were asked to think about their emotions and physical reactions when self-certain. The German instructions are presented in Appendix A.

**Mood:** All participants completed a translated German short version of the Positive and Negative Affect Schedule (PANAS, Watson, Clark, & Tellegen, 1988). On twelve items they reported how they felt momentarily, half of the items measuring Positive Affect and the other half assessing Negative Affect. Both subsets of the PANAS were averaged to form subscales with satisfying internal consistencies (Positive Affect: Cronbach's  $\alpha = .78$ ; Negative Affect: Cronbach's  $\alpha = .72$ ). The sample mean for Positive Affect was  $M = 2.96$  ( $SD = 0.69$ ), the sample mean for Negative Affect was  $M = 1.42$  ( $SD = 0.46$ ).

**Leadership Measures:** All participants completed the success IAT already used in Study 1 and Study 2. Internal consistency was satisfying (Cronbach's  $\alpha = .76$ ). The average z-standardized IAT effect was  $M = 0.56$  ( $SD = 0.41$ ). As explained above, the valence IAT was not employed because the relevant attitude changes were expected on the cognitive success dimension.

Subsequently, the same explicit measures of general valence and success as in Study 2 were administered. Internal consistencies were high for all four scales: general valence of democratic leadership (Cronbach's  $\alpha = .83$ ), general valence of authoritarian leadership (Cronbach's  $\alpha = .90$ ), general success of democratic leadership (Cronbach's  $\alpha = .72$ ), general success of authoritarian leadership (Cronbach's  $\alpha = .77$ ). Difference scores were calculated in order to determine the preferences between leadership styles. On average, the difference score of general valence was  $M = 3.89$  ( $SD = 1.76$ ) and the difference score of general success  $M = 1.51$  ( $SD = 2.02$ ).

**Self-esteem:** Participants completed the German version of the Rosenberg's (1965) Self-Esteem Inventory (see Study 2). The internal consistency was high (Cronbach's  $\alpha = .88$ ), and the sample mean of self-esteem level was  $M = 3.31$  ( $SD = 0.52$ ).

**Self-Uncertainty:** Participants completed the German translation of the Labile Self Esteem Scale (Dykman, 1998; see Study 2). The five items of the scale were highly interrelated (Cronbach's  $\alpha = .92$ ), and participants showed a sample mean of  $M = 2.77$  ( $SD = 0.97$ ). In addition, participants were presented with the German translation of the Emotional Uncertainty subscale of the Uncertainty Response Scale (Greco & Roger, 2001; see Study 2). The subscale was internally consistent (Cronbach's  $\alpha = .92$ ), with participants' mean degree of emotional uncertainty being  $M = 3.54$  ( $SD = 1.04$ ).

### 3.5.2 Results

**Mood:** The Positive and Negative Affect scales were separately subjected to hierarchical regression analyses, including uncertainty, self-esteem and power in Step 1, the two-way interaction terms in Step 2, and the three-way interaction term in Step 3. Positive affect was unrelated to uncertainty, self-esteem, and power (all  $p > .11$ ). Only the two-way interaction between uncertainty and power was marginally significant,  $\beta = .20$ ,  $t(139) = 1.83$ ,  $p < .10$ . None of the other interaction terms yielded significance (all  $p > .14$ ). Negative affect was unrelated to the uncertainty and power manipulations (all  $p > .14$ ). There was, however, a significant negative relation to self-esteem,  $\beta = -.18$ ,  $t(139) = -2.19$ ,  $p < .05$ . In Step 2 and Step 3, none of the interaction terms yielded significance (all  $p > .17$ ). Importantly, controlling

for the PANAS scales did not affect any of the results of Study 3b. Therefore, they were not included in the analyses reported below.

**Covariates:** Participants in the experimental conditions (certainty vs. uncertainty) did not differ in their level of dispositional power or in their political orientation (all  $p > .37$ ). In the analyses reported below, power was included as a moderator variable and political orientation as a covariate. Importantly, there were also no differences between the experimental conditions regarding self-esteem, self-esteem instability and emotional uncertainty (all  $p > .29$ ). Self-esteem instability and emotional uncertainty were included in all subsequent analyses as a covariate in order to control for possible general effects of dispositional uncertainty. However, no such effects were found and therefore these covariates were dropped from the analyses reported below.

**Explicit Leadership Measures:** Explicit leadership preferences were entered in two independent hierarchical regression analyses, including uncertainty, self-esteem, and power as predictors as well as political orientation as covariate in Step 1, the two-way interaction terms in Step 2, and the three-way interaction term in Step 3.

Regarding *valence*, the relative preference for democratic leadership was in tendency negatively correlated with political orientation,  $\beta = -.15$ ,  $t(140) = -1.82$ ,  $p < .10$ , such that higher conservatism implied lower preferences for democratic leadership. The uncertainty manipulation, level of self-esteem, and power were unrelated to the explicit valence evaluations (all  $p > .28$ ). In Step 2, none of the two-way interactions were significant (all  $p > .71$ ). In Step 3, a marginally significant three-way interaction of uncertainty, self-esteem level, and power occurred,  $\beta = -.26$ ,  $t(136) = -1.87$ ,  $p < .10$ , (overall  $F(8,136) = 1.15$ ,  $p > .33$ ,  $\Delta R^2 = 0.008$ ). Following Aiken and West (1991), simple slope analyses to clarify the interaction revealed no significant slopes. The pattern, however, was as follows. Under salience of *high power*, low SEs (one standard deviation below the mean) showed a positive slope,  $\beta = .18$ ,  $t(136) = 0.93$ ,  $p > .36$ , whereas high SEs (one standard deviation above the mean) yielded a negative slope,  $\beta = -.13$ ,  $t(136) = -0.82$ ,  $p > .41$ . Under salience of *low power*, low SEs (one standard deviation below the mean) showed a negative slope,  $\beta = -.17$ ,  $t(138) = -1.12$ ,  $p > .26$ , whereas high SEs (one standard deviation above the mean) yielded a positive slope,  $\beta = .12$ ,  $t(136) = 0.67$ ,  $p > .50$ . All main and interaction effects are presented in Table 10.

Table 10. *Main and Interaction Effects of uncertainty, self-esteem and power predicting explicit valence evaluations*

Explicit Valence	$\beta$	$t$	$p$
Political Orientation	-.15	-1.82	.07
Uncertainty (U)	-.05	-0.56	.58
Self-Esteem (SE)	-.06	-0.70	.48
Power (P)	.09	1.09	.28
U x SE	.05	0.37	.71
U x P	.04	0.34	.74
P x SE	-.03	-0.34	.74
U x SE x P	-.26	1.87	.06

Regarding *success*, in Step 1 neither uncertainty, self-esteem level, power nor the covariate were significantly related to the explicit leadership preference (all  $p > .13$ ). In Step 2, none of the two-way interactions were significant (all  $p > .36$ ). The three-way interaction of uncertainty, self-esteem and power was marginally significant,  $\beta = -.24$ ,  $t(136) = -1.74$ ,  $p < .10$  (overall  $F(8,136) = 1.22$ ,  $p > .29$ ,  $\Delta R^2 = 0.012$ ), but none of the simple slopes yielded significance. The pattern, however, was as follows: Under salience of *high power*, low SEs (one standard deviation below the mean) showed a positive slope,  $\beta = .19$ ,  $t(136) = 1.00$ ,  $p > .32$ , whereas high SEs (one standard deviation above the mean) yielded a negative slope,  $\beta = -.22$ ,  $t(136) = -1.40$ ,  $p > .16$ . Under salience of *low power*, low SEs (one standard deviation below the mean) showed a negative slope,  $\beta = -.16$ ,  $t(136) = -1.09$ ,  $p > .28$ , and high SEs (one standard deviation above the mean) also yielded a negative slope,  $\beta = -.02$ ,  $t(136) = -0.08$ ,  $p > .93$ . All main and interaction effects are presented in Table 11.

Table 11. *Main and Interaction Effects of uncertainty, self-esteem and power predicting explicit success evaluations*

Explicit Success	$\beta$	$t$	$p$
Political Orientation	-.12	-1.40	.16
Uncertainty (U)	-.10	-1.14	.26
Self-Esteem (SE)	-.07	-0.85	.40
Power (P)	.12	1.52	.13
U x SE	-.05	-0.38	.71
U x P	.05	0.47	.64
P x SE	.08	0.92	.36
U x SE x P	-.24	1.74	.08

**Implicit Leadership Measure:** A hierarchical regression analysis for the success IAT was conducted, including uncertainty, self-esteem, power and the covariate political conservatism in Step 1, the two-way interaction terms in Step 2, and the three-way interaction term in Step 3.

Step 1 revealed no significant main effects (all  $p > .12$ ). In Step 2, the interaction of self-esteem and power was marginally significant,  $\beta = -.15$ ,  $t(137) = -1.78$ ,  $p < .10$ . Importantly, the interaction of uncertainty and self-esteem yielded significance,  $\beta = .33$ ,  $t(137) = 2.44$ ,  $p < .05$ . Simple slope analyses revealed a negative slope for low SEs (one standard deviation below the mean),  $\beta = -.41$ ,  $t(137) = -2.21$ ,  $p < .05$ , and a positive slope for high SEs (one standard deviation above the mean),  $\beta = .43$ ,  $t(137) = 2.30$ ,  $p < .05$ . Thus, low SEs showed weaker associations between democratic + success and authoritarian + failure relative to stronger associations between democratic + failure and authoritarian + success in the uncertainty compared to the certainty condition. High SEs showed stronger associations between democratic + success and authoritarian + failure relative to weaker associations between democratic + failure and authoritarian + success in the uncertainty compared to the certainty condition. These results are in line with Hypothesis 2 and Hypothesis 3 and imply an authoritarian reaction for low SEs and a democratic reaction for high SEs. Simple Slopes are depicted in Figure 8.

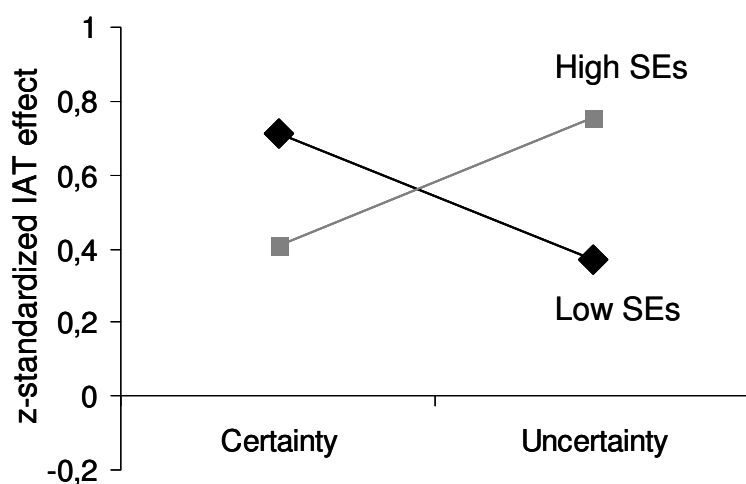


Figure 8. Z-standardized success IAT effects as a function of uncertainty and self-esteem in Study 3b.

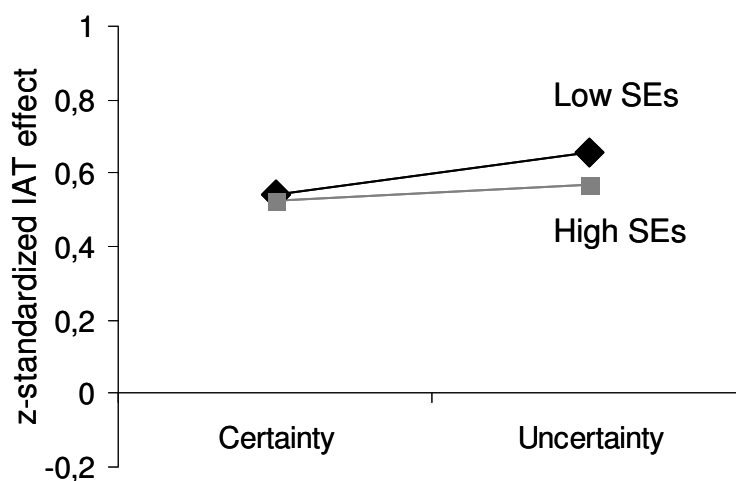
The two-way interactions were qualified by a significant three-way interaction,  $\beta = -.36$ ,  $t(136) = -2.72$ ,  $p < .01$ , (overall  $F(8,136) = 2.78$ ,  $p < .01$ ,  $\Delta R^2 = 0.09$ ). Following Aiken and West (1991) simple slopes were calculated for low and high power individuals. Under salience of *high power*, simple slopes for both low SEs,  $\beta = .14$ ,  $t(136) = 0.76$ ,  $p < .45$ , and high SEs,  $\beta = .05$ ,  $t(136) = 0.36$ ,  $p < .72$ , were not significant. Simple slopes are depicted in

Figure 9A. Thus, when power was salient for high power individuals, their implicit success evaluations did not change under uncertainty. Under salience of *low power*, however, for low SEs (one standard deviation below the mean), a negative slope occurred,  $\beta = -.39$ ,  $t(136) = -2.70$ ,  $p < .01$ , implying an authoritarian reaction. Conversely, for high SEs (one standard deviation above the mean), a positive slope emerged,  $\beta = .35$ ,  $t(136) = 2.06$ ,  $p < .05$ , indicating a democratic reaction. Simple slopes are depicted in Figure 9B. All main and interaction effects are presented in Table 12.

Table 12. *Main and Interaction Effects of uncertainty, self-esteem and power predicting implicit success evaluations*

Implicit Success	$\beta$	$t$	$p$
Political Orientation	-.13	-1.58	.12
Uncertainty (U)	-.001	-0.008	.99
Self-Esteem (SE)	.09	1.05	.29
Power (P)	.03	0.35	.73
U x SE	.33	2.44	.02
U x P	.07	0.64	.53
P x SE	-.15	-1.78	.08
U x SE x P	-.36	-2.72	.007

A) High Power



## B) Low Power

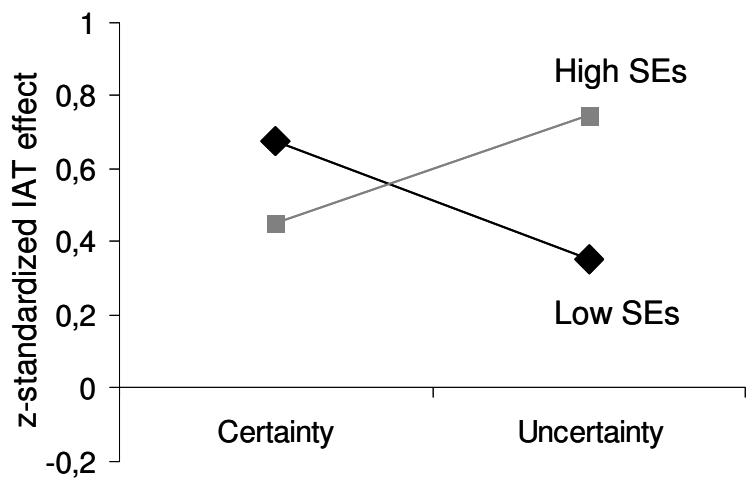


Figure 9. Z-standardized success IAT effects as a function of uncertainty and self-esteem for participants with (A) high power and (B) low power in Study 3b.

### 3.5.3 Discussion

The findings of Study 3b are consistent with hypotheses. In line with Hypothesis 1, under certainty participants clearly preferred democratic over authoritarian leadership regardless of self-esteem and power on implicit and explicit leadership measures, implying a democratic standard attitude. In line with Hypothesis 2 and Hypothesis 3, under uncertainty low SEs exhibited less and high SEs exhibited more positive success IAT effects in the uncertainty compared to the certainty condition, implying an authoritarian reaction for low SEs and a democratic reaction for high SEs. In line with Hypothesis 4 and Hypothesis 5, this two-way interaction was qualified by a three-way interaction. That is, the differential effect for high and low SEs only emerged for low power individuals. High power individuals, in contrast, showed positive success IAT effects, thus, strong implicit associations between democratic + success and authoritarian failure regardless of uncertainty priming condition and self-esteem level. Thus, they adhered to their democratic standard attitudes even under uncertainty (Hypothesis 4b). On explicit leadership measures there were no significant differences between the certainty and uncertainty condition indicating the higher sensitivity of the success IAT to uncertainty reactions.

These results indicate that when dispositional low power is salient, individuals elaborate their expectancies more extensively than high power individuals and come to differential conclusions depending on self-esteem level. Whereas high SEs strive to heighten their input in the decision making processes by calling for democratic procedures and thereby voice, low SEs are less convinced that their contribution to the decision making helps



coping with the problem and therefore try to minimize their input. In contrast, under salience of high power leadership evaluations were unaffected by uncertainty or level of self-esteem. In line with Hypothesis 4b, it can be argued that the salience of high power induces such a high level of general confidence that extensive elaboration seems not necessary for the goal attainment of uncertainty reduction and both high and low SEs rely on their democratic standard attitude as they do in the certainty condition. Thus, salience of high power seems to be an effective means to prevent individuals from their uncertainty reactions and in particular low SEs from their authoritarian reaction.

### **3.6 Study 4a – Situational Power**

Study 3b showed that when dispositional low power was salient individuals reacted differentially to feelings of uncertainty depending on their level of self-esteem. That is, low SEs exhibited an authoritarian and high SEs a democratic reaction on the implicit success measure. In contrast, when dispositional high power was salient leadership evaluations remained unaffected by the priming of uncertainty. While Study 3b investigated the impact of making dispositional power salient, the goal of the following studies is to replicate and extend these findings by experimentally manipulating the level of felt power and investigating its impact on leadership evaluations under uncertainty. Study 4a examines whether imagining being in a leader compared to a follower position leads to heightened power levels individuals ascribe to themselves.

Power is not synonymous with leadership, but both concepts are naturally intertwined (Goodwin, 2003). Whereas power provides the ability to influence others (Galinsky et al., 2003; Keltner et al., 2003) leadership can be conceived as the process of influencing others (Chemers, 2001). Thus, power is the means of leadership and, therefore, being a leader implies and requires power (Berlew & Heller, 1983; Goodwin, 2003). Consistently, Giessner and Schubert (2007) showed that vertical information influences judgments of leaders' power and, conversely, that information about a leader's power influences vertical positioning of a leader on a computer screen. Previous research induced power successfully via a role playing task in which the roles of employer (high power) and an employee (low power) were assigned to participants (Briñol et al., 2007; Overbeck & Park, 2001). In addition, it has been shown that the mere thought of having power is sufficient to induce differential levels of perceived power (Galinsky et al., 2003). Drawing on this research the present study examined whether imagining being in a leader versus a follower position leads to high versus low levels of perceived power. Power is assessed via the SPM validated in Study 3a and already successfully employed in Study 3b.

### 3.6.1 Method

#### 3.6.1.1 Participants

Sixty students from the University of Mannheim participated in a study labeled 'Self-Perception and Leadership' in return for 1 Euro and a chocolate bar. Three participants failed to complete the power measure, the main dependent variable, and were therefore excluded from further analyses resulting in a total sample of 57 participants. 20 (35%) participants were male, 37 (65%) female, aged 18 to 42 with an average age of 25.0 years ( $SD = 4.0$ ). In majority, participants were students (55, 97%) of various disciplines. On average participants were in the 7.8 semester with a range from 2 to 14. The remaining 2 participants (3%) were employed or else. For the main part, the first language was German (44, 77%). Those with a different first language (13, 23%) stated to have learned German at least for 3 years ( $M = 14.81$ ,  $SD = 8.97$ ). Participants completed the experimental materials individually.

#### 3.6.1.2 Design

In a between-subject design, half of the participants were primed with a leader position, the other half were primed with a follower position (Table 13). Counterbalanced, they were either instructed to imagine being the black or the white circle.

Table 13. *Between-subject design of Study 4a*

	Black Circle	White Circle
Follower Position		
Leader Position		

#### 3.6.1.3 Experimental Procedure and Materials

Individuals were approached in the university library. After reading and signing informed consent, each participant was given a questionnaire packet and asked to complete the booklet following the order of questions. The packet started with demographic variables. The order of experimental manipulations and measures was as follows. First, the leader or follower position was manipulated. Second, the power individuals ascribe to themselves was administered. Third, participants completed a packet of personality questionnaires regarding self-esteem, self-uncertainty and leadership motivation. Finally, participants were debriefed following APA suggestions, remunerated, and thanked for their participation.

**Power Priming:** In the high power condition participants were asked to remember and write down an event when they themselves were in a leadership position towards another person.

In the low power condition participants described an event when another person was in a leadership position towards them. The exact German wording is presented in Appendix C.

**Power Measure:** In order to assess the level of perceived power participants completed the SPM with its 56 pairs of circles. As in Study 3a and Study 3b, the instruction was to imagine oneself being the black versus the white circle and another person being the circle of the opposite color. Internal consistency was high (Cronbach's  $\alpha = .92$ ) and the sample mean of power was  $M = 3.13$  ( $SD = 0.44$ ).

**Self-Esteem:** Participants completed the German version of the Rosenberg's (1965) Self-Esteem Inventory (see Study 2). The internal consistency was high (Cronbach's  $\alpha = .89$ ) and the sample mean of self-esteem was  $M = 3.26$  ( $SD = 0.50$ ).

**Self-Uncertainty:** Self-uncertainty was assessed by the translated German Labile Self-Esteem Scale (Dykman, 1998; see Study 2). The scale was internally reliable (Cronbach's  $\alpha = .91$ ) and the sample mean of labile self-esteem was  $M = 2.59$  ( $SD = 0.87$ ).

**Leadership Motivation:** In order to assess the leadership motivation the respective subscale of the German Business-Focused Inventory of Personality was employed (Hossiep & Paschen, 2003; see Study 3a). The internal consistency of leadership motivation was high (Cronbach's  $\alpha = .80$ ) and the sample mean was  $M = 3.43$  ( $SD = 0.73$ ).

### 3.6.2 Results

**Covariates:** Scores of the Rosenberg Self-Esteem Inventory, the Labile Self-Esteem Scale, and the leadership motivation scale did not differ between the position priming conditions (all  $p > .25$ ). Thus, position priming had no effect on the personality measures and random assignment to conditions was successful. Self-esteem, self-uncertainty, and leadership motivation were no significant covariates (all  $p > .20$ ) and did not change the pattern of results. They were therefore dropped from the analyses reported below.

**Power Measure:** Participants' scores on the power measure were subjected to a 2 (leader position vs. follower position)  $\times$  2 (black vs. white circle color) factorial analysis of variance, resulting in a significant main effect for position ( $F(1, 53) = 6.48, p < .05$ ). Participants primed with the leader position exhibited significantly higher scores on the power measure ( $M = 3.27, SD = 0.43$ ) than participants primed with the follower position ( $M = 2.98, SD = 0.41$ ). This difference between conditions is presented in Figure 10. Neither the main effect nor the interaction effect for color of circle yielded significance (all  $p > .33$ ).

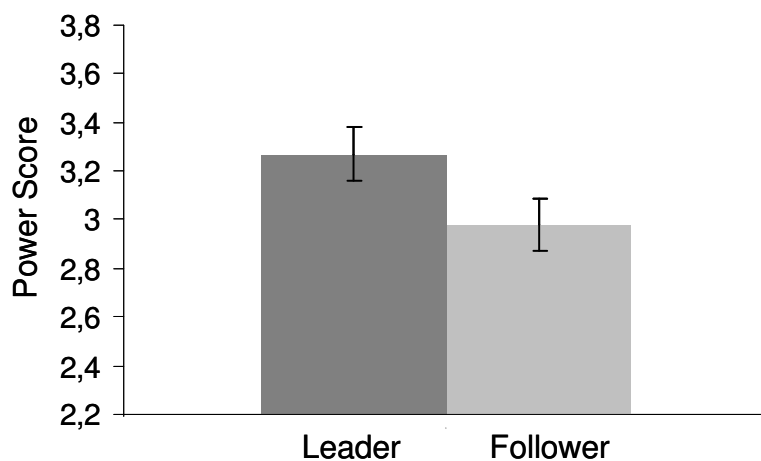


Figure 10. Mean ratings on the SPM (and standard errors) as a function of position (leader vs. follower) in Study 4a. Scores range from 2.2 to 3.8, with higher values indicating more power.

### 3.6.3 Discussion

The goal of Study 4a was to show that priming participants with a leader versus a follower position leads to differences in the power individuals ascribe to themselves. As expected, priming leadership led participants to score higher on the SPM as compared to the follower condition. Thus, thinking of leadership involves more vertical schematization in space and by this individuals ascribe themselves more power than when they think of being in a follower position. Hence, the SPM was significantly influenced by the leadership manipulation. It is noteworthy that individuals in the follower condition exhibited ratings on the power measure with average scores near the scale midpoint. Thus, low power is only *relatively* low and only a minority is clearly submissive in their relation to others. Nevertheless, the results of Study 4a confirm the hypothesis that being a leader implies more power and being a follower implies less power. Importantly, self-esteem was not influenced by the manipulation of position making it possible to determine the independent effects of self-esteem and experimentally induced power on leadership evaluations under uncertainty in Study 4b.

### 3.7 Study 4b – Priming of Situational Power as (Re-) Solution

The design of Study 4b is basically the same as in Study 3b. However, instead of the mere assessment of dispositional power, level of power is manipulated experimentally via the position priming tested in Study 4a. It is hypothesized that the power prime has comparable effects on leadership evaluations as the salience of dispositional power.

Study 4b is designed to replicate the pattern of results reported in Study 3b. Again, uncertainty is induced by a priming procedure. In addition, trait uncertainty is made salient at the beginning of the experiment by assessing personality questionnaires as in Study 2. This procedure is chosen in order to investigate whether high power can even cancel out the

combined impact of the two uncertainty inductions. Instead of assessing dispositional power individuals ascribe to themselves, this time, the level of power is manipulated experimentally by asking participants to imagine being in a leader or being in a follower position. Study 4a successfully showed that this manipulation indeed leads to different levels of perceived power. Individuals that imagined being a leader felt more powerful than individuals that imagined being a follower. In Study 4b, power is induced just before the completion of the success IAT. Results similar to Study 3b are expected. It is hypothesized that under certainty participants rely on their standard democratic attitude (Hypothesis 1), whereas under uncertainty low SEs show an authoritarian (Hypothesis 2) and high SEs a democratic reaction (Hypothesis 3). It is expected that the high power manipulation (leader position) cancels these differential reactions to uncertainty out and replaces them with the standard democratic attitude (Hypothesis 4b). In contrast, the low power manipulation (follower position) should result in differential reactions to the uncertainty priming depending on level of self-esteem, thus in an authoritarian reaction for low SEs and a democratic reaction for high SEs (Hypothesis 5). As in Study 2 and Study 3b effects should be most pronounced on the implicit success measure.

In order to assess possible differences in the level of felt uncertainty this time a manipulation check of the uncertainty priming was employed at the end of the study. In Study 1-3 the influence of political conservatism was controlled only by a one item measure. In order to ensure that potential effects are not found due to methodological shortcomings, in the present study right-wing authoritarianism and social dominance are additionally assessed.

### **3.7.1 Method**

#### **3.7.1.1 Participants**

One hundred and sixty students from the University of Mannheim participated in a study labeled "Leadership" in return for 2.50 EUR and a chocolate bar. Three participants failed to complete the IAT and 18 participants exhibited higher error rates than 21% on IAT completion. These participants were therefore excluded from further analyses resulting in a total sample size of 139 participants. 51 (37%) participants were male, and 88 (63%) female, aged 18 to 40 with an average age of 23.0 years ( $SD = 3.6$ ). Most of participants were students (132, 95%) of various disciplines. They were on average in the 5.2 semester with a range from 1 to 19. The remaining 7 participants (7, 5%) were employed or else. For the main part, the first language was German (118, 85%). Those with a different first language (21, 15%) stated to have learned German for at least 3 years ( $M = 11.9$ ,  $SD = 6.8$ ). Participants were run in groups of up to ten at a time.

### 3.7.1.2 Design

In a between-subject design, participants were randomly assigned to the uncertainty and position conditions (Table 14). Half of the participants were primed with self-certainty, the other half with self-uncertainty. Orthogonal to the uncertainty priming and directly before IAT completion half of the participants were instructed to imagine being in a leader position while the other half were told to think of being in a follower position. Level of self-esteem was assessed.

Table 14. *Between-subject design of Study 4b*

	High Power (Leader Position)		Low Power (Follower Position)	
	High SEs	Low SEs	High SEs	Low SEs
Certainty Manipulation				
Uncertainty Manipulation				

### 3.7.1.3 Experimental Procedure and Materials

After entering the laboratory, participants were assigned to one of the computers and were asked to consent to their participation. Before starting with the experiment, participants stated standard demographic information and their political orientation (9-point scale ranging from 1 = extremely liberal to 9 = extremely conservative). On average, participants were more liberal than conservative in their political orientation, the sample mean was  $M = 4.12$  ( $SD = 1.26$ ). The order of experimental manipulations and measures was as follows. First, participants completed the personality questionnaires assessing self-esteem and self-uncertainty to make trait uncertainty salient. Second, state self-uncertainty versus state self-certainty was experimentally induced by a priming procedure. Third, positive and negative affect were assessed in order to rule out mood effects. Fourth, the leader versus follower position was primed. Fifth, implicit and subsequently explicit leadership measures were administered. Sixth, participants completed scales assessing political conservatism. Finally, the manipulation check for the uncertainty priming was assessed. Participants were debriefed following APA suggestions, remunerated and thanked for their participation.

**Self-Esteem:** Participants completed the German version of Rosenberg's (1965) Self-Esteem Inventory (see Study 2). The internal consistency was high (Cronbach's  $\alpha = .87$ ), and participants exhibited a sample mean of  $M = 3.33$  ( $SD = .48$ ).

**Self-Uncertainty:** Participants completed the German translation of the Labile Self Esteem Scale (Dykman, 1998; see Study 2). The five items of the scale were highly interrelated

(Cronbach's  $\alpha = .93$ ), and participants showed a sample mean of  $M = 2.54$  ( $SD = 0.93$ ). In addition, participants were presented with the German translation of the Emotional Uncertainty subscale of the Uncertainty Response Scale (Greco & Roger, 2001; see Study 2). The subscale was internally consistent (Cronbach's  $\alpha = .91$ ), with participants' mean degree of emotional uncertainty being  $M = 3.45$  ( $SD = 1.06$ ).

**Uncertainty Manipulation:** In order to experimentally manipulate uncertainty participants responded to questions as in Study 3b (Van den Bos, 2001). The questions were slightly altered. Participants were asked to describe one's feelings and physical reactions to uncertainty versus certainty. The exact German wording is presented in Appendix A.

**Mood:** All participants completed a translated German short version of the Positive and Negative Affect Schedule (PANAS; Watson et al., 1988), five items measuring positive affect and five items measuring negative affect. Both subsets of the PANAS were averaged to form subscales with satisfying internal consistencies (positive affect: Cronbach's  $\alpha = .67$ ; negative affect: Cronbach's  $\alpha = .79$ ). The sample mean for positive affect was  $M = 2.69$  ( $SD = 0.64$ ), the sample mean for negative affect was  $M = 1.37$  ( $SD = 0.54$ ).

**Power Manipulation:** In order to manipulate the level of perceived power experimentally half of the participants were instructed: "During the completion of the following task, please imagine another person that is in a leadership position towards you", while the other half was told: "During the completion of the following task, please imagine another person towards that you are in a leadership position". The exact German wording is provided in Appendix C.

**Leadership Measures:** All participants completed the success IAT already used in Study 1, Study 2, and Study 3b. Internal consistency was satisfying (Cronbach's  $\alpha = .81$ ). The average z-standardized IAT effect was  $M = 0.52$  ( $SD = 0.44$ ). As in Study 3b, the valence IAT was not employed because the relevant attitude changes were expected on the cognitive success dimension.

Subsequently, the same explicit measures of general valence and success as in Study 2 and Study 3b were administered. Internal consistencies were high for all four scales: general valence of democratic leadership (Cronbach's  $\alpha = .89$ ), general valence of authoritarian leadership (Cronbach's  $\alpha = .82$ ), general success of democratic leadership (Cronbach's  $\alpha = .87$ ), general success of authoritarian leadership (Cronbach's  $\alpha = .89$ ). Difference scores were calculated in order to determine the preferences between leadership

styles. On average, the difference score of general valence was  $M = 3.85$  ( $SD = 1.59$ ) and the difference score of general success  $M = 1.15$  ( $SD = 2.12$ ).

**RWA and SDO:** Participants completed a German 12-item version of Altemeyer's (1988) RWA scale and the German version of the SDO scale (Pratto et al., 1994) already used in Study 1. The intercorrelation of the twelve items assessing right-wing authoritarianism was satisfying (Cronbach's  $\alpha = .77$ ), and the sample mean was  $M = 3.28$  ( $SD = 0.87$ ). The SDO scale was internally consistent (Cronbach's  $\alpha = .86$ ) with a sample mean of  $M = 2.85$  ( $SD = 0.91$ ).

**Uncertainty Manipulation Check:** The experiment finished with a manipulation check for the uncertainty manipulation, asking participants to remember and indicate how they felt during completion of the uncertainty task on 10 items adapted from McGregor and colleagues (2001). The manipulation check of felt uncertainty was scaled such that higher values indicated higher uncertainty. Certainty items were recoded and given that internal consistency was high (Cronbach's  $\alpha = .92$ ) all items were combined to form a single index. The sample mean was  $M = 2.81$  ( $SD = 1.10$ ).

### 3.7.2 Results

**Uncertainty Manipulation Check:** The uncertainty manipulation check was subjected to a hierarchical regression analysis, including self-esteem level, uncertainty and position in Step 1, the two-way interaction terms in Step 2, and the three-way interaction term in Step 3. As intended, perceived uncertainty was positively related to the manipulation of uncertainty,  $\beta = .20$ ,  $t(135) = 2.34$ ,  $p < .05$ , that is, participants in the uncertainty condition ( $M = 3.03$ ,  $SD = 1.22$ ) as compared to the certainty condition ( $M = 2.59$ ,  $SD = 0.90$ ) reported having felt significantly more uncertain. In addition, there was a significant main effect for self-esteem,  $\beta = -.21$ ,  $t(135) = -2.47$ ,  $p < .05$ , that is, regardless of conditions low SEs reported higher levels of felt uncertainty than high SEs. The power manipulation (leader vs. follower position) had no significant effect on the manipulation check,  $\beta = -.03$ ,  $t(135) = -0.35$ ,  $p > .73$ , and none of the interactions were significant (all  $p > .36$ ). Thus, the manipulation of uncertainty was successful.

**Mood:** The Positive and Negative Affect scales were separately subjected to hierarchical regression analyses, including uncertainty, self-esteem level and position in Step 1, the two-way interaction terms in Step 2, and the three-way interaction term in Step 3. Positive affect was in tendency negatively related to the manipulation of uncertainty,  $\beta = -.14$ ,  $t(135) = -1.73$ ,  $p < .10$ . In addition, there was a marginally significant main effect for self-esteem,  $\beta = .16$ ,  $t(135) = 1.93$ ,  $p < .10$ . All interaction terms in Step 2 and Step 3 were non-significant



(all  $p > .29$ ). Negative affect was unrelated to the uncertainty and power manipulations (all  $p > .13$ ). There was, however, a significant negative relation to self-esteem,  $\beta = -.38$ ,  $t(135) = -4.77$ ,  $p < .01$ . In Step 2 and Step 3 only the two-way interaction between self-esteem and power yielded significance,  $\beta = .77$ ,  $t(132) = 3.09$ ,  $p < .01$  (all other  $p > .13$ ). Importantly, however, controlling for the PANAS scales did not affect any of the results of Study 4b. Therefore, they were not included in the analyses reported below.

**Covariates:** The experimental conditions did not differ in self-esteem, self-esteem instability or emotional uncertainty (all  $p > .19$ ). Self-esteem instability and emotional uncertainty were included in all subsequent analyses as a covariate in order to control for possible general effects of dispositional uncertainty. However, no such effects were found and therefore self-esteem instability and emotional uncertainty were dropped from the analyses reported below. There were also no differences between conditions in regard of political orientation, right-wing authoritarianism or social dominance orientation (all  $p > .15$ ). All of these scales were included as covariates in order to control for possible general effects but no such effects occurred. Only political orientation was a significant predictor and the analyses including this variable are reported below.

**Explicit Leadership Measures:** Explicit leadership preferences regarding valence and success were entered in two independent hierarchical regression analyses, including uncertainty, self-esteem, and position as well as political conservatism as a covariate in Step 1, the two-way interaction terms in Step 2, and the three-way interaction term in Step 3.

Political orientation was a significant predictor of explicit valence,  $\beta = -.36$ ,  $t(132) = -4.32$ ,  $p < .01$ , and success evaluations,  $\beta = -.25$ ,  $t(132) = -2.90$ ,  $p < .01$ . Thus, participants with higher political conservatism showed lower preferences for democratic leadership on both dimensions. All other predictors and interactions remained insignificant (all  $p > .12$ ). All main and interaction effects predicting explicit valence evaluations are presented in Table 15. All main and interaction effects predicting explicit success evaluations are presented in Table 16.

Table 15. *Main and Interaction Effects of uncertainty, self-esteem and position predicting explicit valence evaluations*

Explicit Valence	$\beta$	$t$	$P$
Political Orientation	-.36	-4.23	.00
Uncertainty (U)	.26	0.22	.83
Self-Esteem (SE)	.03	0.37	.71
Position (P)	-.03	0.35	.73
U x SE	.03	0.21	.83
U x P	-.27	-1.00	.32
P x SE	.30	1.11	.27
U x SE x P	-.39	-0.95	.35

Table 16. *Main and Interaction Effects of uncertainty, self-esteem and position predicting explicit success evaluations*

Explicit Success	$\beta$	$t$	$p$
Political Orientation	-.25	-2.90	.004
Uncertainty (U)	-.10	-1.23	.22
Self-Esteem (SE)	.14	1.59	.12
Position (P)	-.08	-0.96	.34
U x SE	.05	0.40	.69
U x P	-.25	-0.90	.37
P x SE	-.07	-0.26	.79
U x SE x P	-.54	-1.30	.20

**Implicit Leadership Measure:** Success IAT effects were subjected to a hierarchical regression analysis, including uncertainty, self-esteem, position and political conservatism as a covariate in Step 1, the two-way interaction terms in Step 2, and the three-way interaction term in Step 3.

Implicit leadership success associations were significantly related to the political orientation,  $\beta = -.22$ ,  $t(134) = -2.52$ ,  $p < .05$ , implying that the more conservative participants were, the weaker were their associations between democratic leadership + success and authoritarian leadership + failure. There were no other significant main effects (all  $p > .69$ ). In Step 2, the interaction of uncertainty and self-esteem,  $\beta = .27$ ,  $t(131) = 2.05$ ,  $p < .05$ , as well as the interaction of self-esteem and position,  $\beta = -.57$ ,  $t(131) = -2.10$ ,  $p < .05$ , were significant. In order to test Hypothesis 2 and Hypothesis 3, simple slope analyses for the interaction between uncertainty and self-esteem were calculated (Aiken & West, 1991). For low SEs (one standard deviation below the mean) analyses yielded a negative,  $\beta = -.43$ ,

$t(131) = -2.26, p < .05$ , and for high SEs (one standard deviation above the mean) analyses yielded a positive slope,  $\beta = .43, t(131) = 2.23, p < .05$ . Thus, low SEs exhibited weaker associations between democratic + success and authoritarian + failure relative to stronger associations between democratic + failure and authoritarian + success in the uncertainty compared to the certainty condition. High SEs showed stronger associations between democratic + success and authoritarian + failure relative to weaker associations between democratic + failure and authoritarian + success in the uncertainty compared to the certainty condition. These results imply an authoritarian reaction for low SEs and a democratic reaction for high SEs. Simple slopes are depicted in Figure 11.

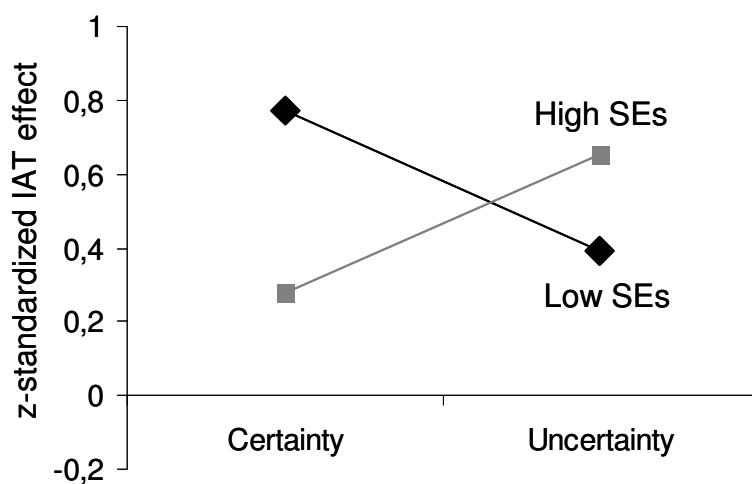


Figure 11. Z-standardized success IAT effects as a function of self-esteem and uncertainty of Study 4b.

Importantly, these effects were qualified by a significant three-way interaction,  $\beta = -.88, t(130) = -2.18, p < .05$  (overall  $F(8,130) = 2.87, p < .01, \Delta R^2 = .10$ ). Thus, two hierarchical regression analyses for the leader and follower condition were conducted separately, including uncertainty, self-esteem, and political conservatism as covariate in Step 1 and the interaction term in Step 2. It was expected that the two-way interaction between uncertainty and self-esteem would be non-significant in the leader, but significant in the follower condition.

In the leader condition, Step 1 only revealed a significant main effect for the covariate of political orientation,  $\beta = -.25, t(68) = -2.11, p > .05$ . In Step 2 the interaction between uncertainty and self-esteem was, indeed, not significant,  $\beta = .003, t(67) = .02, p > .98$  (overall  $F(4,67) = 2.08, p < .10, \Delta R^2 = .06$ ). Simple slopes are depicted in Figure 12A.

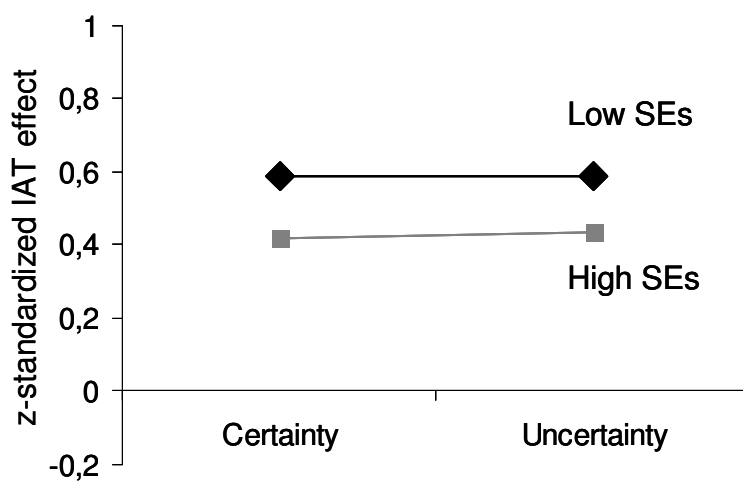
In the follower condition, the covariate of political orientation showed no significant effects. Uncertainty was unrelated to reactions on the success IAT. Implicit success evaluations, however, were positively related to self-esteem,  $\beta = .24, t(63) = 2.00, p < .05$ , thus participants with higher self-esteem showed stronger implicit associations between

democratic + success and authoritarian + failure. Importantly, the interaction of uncertainty and self-esteem yielded significance,  $\beta = .67$ ,  $t(62) = 3.26$ ,  $p < .01$ , (overall  $F(4,62) = 4.16$ ,  $p < .01$ ,  $\Delta R^2 = .16$ ). Following Aiken and West (1991) simple slopes were calculated. For participants with low self-esteem (one standard deviation below the mean), a negative slope occurred,  $\beta = -.76$ ,  $t(62) = -2.78$ ,  $p < .01$ , implying an authoritarian reaction. In contrast, for high SEs (one standard deviation above the mean), a positive slope emerged,  $\beta = .72$ ,  $t(62) = 2.60$ ,  $p < .05$ , implying a democratic reaction. Simple slopes are depicted in Figure 12B. All main and interaction effects predicting implicit success evaluations are presented in Table 17.

Table 17. *Main and Interaction Effects of uncertainty, self-esteem and position predicting explicit success evaluations*

Implicit Success	$\beta$	$t$	$p$
Political Orientation	-.22	-2.52	.01
Uncertainty (U)	.01	0.14	.89
Self-Esteem (SE)	.01	0.16	.87
Position (P)	-.03	-0.40	.69
U x SE	.27	2.05	.04
U x P	.03	0.11	.91
P x SE	-.57	-2.10	.04
U x SE x P	-.88	-2.18	.03

A) High Power (Leader Position)



## B) Low Power (Follower Position)

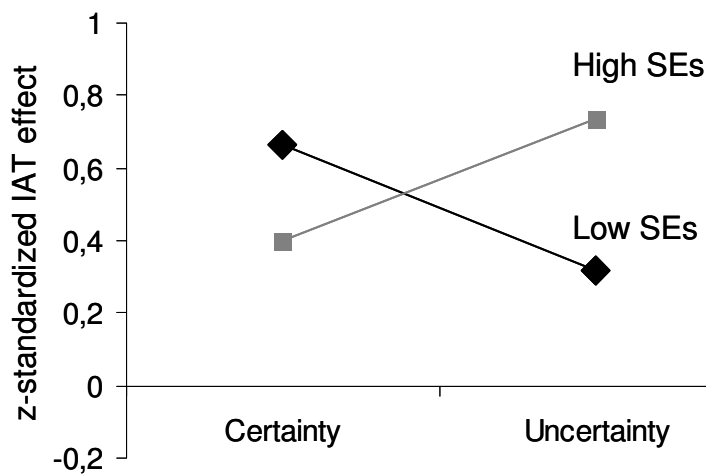


Figure 12. Z-standardized success IAT effects as a function of self-esteem and uncertainty in (A) the leader and (B) the follower condition of Study 4b.

### 3.7.3 Discussion

The results of Study 4b are in line with hypotheses. Under certainty, participants clearly preferred democratic over authoritarian leadership on explicit as well as implicit leadership measures (Hypothesis 1). Under uncertainty low SEs showed an authoritarian reaction (Hypothesis 2), whereas high SEs exhibited a democratic reaction (Hypothesis 3). This two-way interaction was qualified by a three-way interaction. That is, only participants that imagined being in a follower position exhibited a differential reaction to uncertainty depending on their level of self-esteem (Hypothesis 5). In contrast, uncertainty did not affect the reactions of participants that thought of being in a leader position. As under certainty, they exhibited a democratic standard attitude regardless of level of self-esteem (Hypothesis 4b). Thus, imagining being in a leader position is sufficient to cancel out an authoritarian reaction to uncertainty even if uncertainty is induced by a combined manipulation. The manipulation check indicated that the uncertainty priming induced feelings of uncertainty in high and low SES as well as in high and low power individuals. Thus, the differential effects of self-esteem and power under uncertainty were not due to different levels of perceived uncertainty. In addition, the present study employed the RWA and the SDO scale beside the one item measure of political orientation. The impact of uncertainty, self-esteem and power on the implicit success measure, however, were independent of conservatism and authoritarianism. Again, the expected reactions were found on the implicit success measure but not on the explicit leadership evaluations indicating that the implicit measure is more sensitive to such effects. In summary, Study 4b could replicate and extend the findings of Study 3b.

## 4 General Discussion

The present dissertation set out to specify the circumstances under which individuals tend to show a self-imposed subordination under authorities. In a series of studies the hypotheses were tested that individuals under certainty prefer democratic over authoritarian leadership, but that under uncertainty low SEs exhibit an authoritarian reaction, whereas high SEs show a democratic reaction. In line with previous research this differential pattern was only assumed on the cognitive-based success, but not on the affect-related valence dimension. Moreover, due to social desirability effects implicit measures were expected to be more sensitive for the authoritarian reaction. Going one step further, it was investigated whether salience of high power is an effective means to cancel out the reactions to uncertainty. In the following, the main findings are summarized (4.1) and the postulated theoretical framework is reconsidered in this regard (4.2). Relations to other approaches are identified and discussed (4.3). Implications for future research (4.4) are outlined and the section closes with a conclusion on whether uncertainty states a risk for democracy (4.5).

### 4.1 Summary of findings

For the purpose of the present research new explicit and implicit measures discriminating between perceived valence and success of leadership were developed and validated in Study 1. Participants strongly preferred democratic over authoritarian leadership regarding valence and success on both implicit and explicit leadership measures supporting the assumption of a democratic standard attitude (Hypothesis 1). As expected, implicit leadership measures (valence and success IAT) were related to their explicit counterparts (item-based and general leadership evaluations) and the assessed authoritarianism scale, but unrelated with social dominance orientation that seems to be conceptually independent.

Employing these new measures in Study 2, 3b and 4b revealed a clear and consistent pattern of results. The present findings strongly suggest that perceived uncertainty has differential effects on leadership evaluations of high and low SEs. While under neutral or certain conditions high and low SEs clearly preferred democratic over authoritarian leadership, that is, exhibited a democratic standard attitude (Hypothesis 1), low SEs showed a decrease (Hypothesis 2) and high SEs an increase (Hypothesis 3) in their democratic preference when uncertain. Moreover, the former democratic and the latter authoritarian reaction were specific for the cognitive-based success, but not for the affect-related valence dimension of leadership evaluation and were only expressed on implicit but not on explicit measures.

The reliability and validity of results are underscored by the fact that the hypothesized pattern was replicated across studies with differences in the operationalizations of

uncertainty. Study 2 examined the reactions of low SEs to introspective thoughts of their own self-uncertainty induced by the assessment of personality questionnaires, Study 3b manipulated self-uncertainty experimentally via a priming procedure and Study 4b combined both manipulations.

Study 3a/b and Study 4a/b investigated the moderational influence of a second individual-difference variable, namely power (Hypothesis 4 and Hypothesis 5). In Study 3a/b perceived power was manipulated by making dispositional power salient. Drawing on social embodiment research a new non-verbal measure was constructed in order to assess dispositional levels of power. This measure was successfully validated in Study 3a demonstrating correlations with power-related concepts such as power, achievement, leadership motivation and dominance but not with power-unrelated concepts such as hedonism, stimulation, self-direction, benevolence, tradition, conformity, security, or self-esteem. Study 3b employed the Spatial Power Measure to make dispositional power salient. In Study 4a/b level of power was manipulated experimentally via a priming procedure. Study 4a showed that priming a leader position led to higher scores on the Spatial Power Measure than priming a follower position supporting the notion that leadership implies power. Therefore, in Study 4b power was manipulated experimentally by this position prime.

Study 3b and 4b showed a consistent pattern of results that was in line with Hypothesis 4b that awareness of having high power promotes reliance on general belief structures instead of high cognitive expectancy elaborations. That is, even under uncertainty, both the salience of dispositional high power and the priming of leader position led to a democratic standard attitude comparable to that under neutral or certain conditions.

Taken together, the present studies revealed a highly consistent and reliable pattern of results. Regardless of operational and methodological differences, the reaction to uncertainty was democratic for high SEs and authoritarian for low SEs and high power was sufficient to neutralize these reactions resulting in a democratic standard attitude.

It has been shown that threat interacts with dispositional authoritarianism to influence authoritarian attitudes and behavior (Feldman, 2003; Stenner, 2005; see 2.1.2). In the present research, also a polarization effect occurred under uncertainty, but the moderating individual-difference variable was self-esteem and not authoritarianism. That is, low SEs showed an authoritarian, whereas high SEs exhibited a democratic reaction to uncertainty. In the present studies, the results were independent of varying levels of political conservatism, authoritarianism or social dominance orientation. In showing that under uncertainty self-esteem and power have a moderating influence on leadership evaluations, therefore, the present dissertation offers an important extension to the previous authoritarianism research.

## 4.2 The Theoretical Framework Reconsidered

Beyond the empirical level of analysis, the theoretical framework outlined in the delineation of hypothesis (see 2.7) can be reconsidered in the light of the present results. The following section is intended to address some issues that deserve particular mention. That is, why has the deliberative process of uncertainty resolution an impact on implicit measures that are assumed to assess automatic processes (4.2.1)? Are the found effects due to high power or rather low power (4.2.2)? Why is the differentiation between the two dimensions success and valence important (4.2.3)? Why is the differentiation between the implicit and explicit processes important (4.2.4)? And do implicit processes have an effect on behavior (4.2.5)?

### 4.2.1 Deliberation and Automaticity – a Paradox?

Strack and Deutsch (2004) as well as Gawronski and Bodenhausen (2006) assumed associative processes to encompass characteristics of automaticity as operating fast, efficiently, and independent of intention. As the authoritarian and democratic reactions were only found on implicit measures that are assumed to reflect associative processes, they should, at least to a certain degree, be automatic. The theoretical framework of the present dissertation is based on deliberative expectancy-value considerations caused by the motive of uncertainty reduction. At first sight, automaticity and deliberation seem to be contradicting as they are assumed to be conceptually different processes. This is, however, only the case if both kinds of processes are expected to take place simultaneously. In the present studies, participants were always at first confronted with an uncertainty manipulation and thought about self-uncertainty at least for a few minutes. Drawing on Weary and Edwards' (1996) causal uncertainty model the following processes can be assumed during that time slot. The "comparator" identifies a discrepancy between the current state of uncertainty and the desired state of certainty and activates potential action plans, that is, thoughts of "What to do?" in order to reduce the perceived discrepancy. These action plans are analyzed by the "outcome expectancy assessor" that assesses the respective success expectancies, that is, thoughts of "Can I successfully perform this behavior?" Whether an action plan is expected to be successful is determined by taking the current context and past actions into account. These assumptions were formalized in an expectancy-value model (see 2.4). The crucial point that differentiates high and low SEs from each other is whether they believe themselves to be able to efficiently contribute to uncertainty reduction. Whereas high SEs do, low SEs do not. Thus, high SEs are prepared to act, whereas low SEs doubt their abilities. Presented with two leadership styles that differ in the degree of granted participation this differential pre-activation, in turn, results in a democratic reaction for high SEs and an authoritarian reaction for low SEs. The responses on the implicit measure themselves are non-deliberative and



show characteristics of automaticity, but they are the consequence of a deliberative process of weighing expectancies that took place beforehand.

In summary, uncertainty is expected to activate the deliberation about potential action plans and their respective success expectancies that, in turn, differentially predispose high and low SEs to respond automatically with a democratic or authoritarian reaction. These assumptions are depicted in Figure 13.

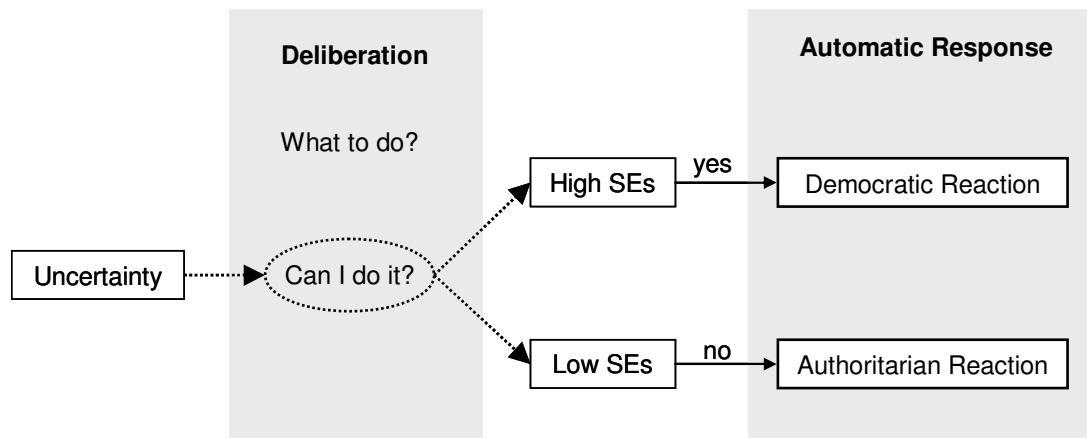


Figure 13. Schematic overview of hypothesized deliberative and automatic processes.

#### 4.2.2 Are the effects driven by powerfulness or powerlessness?

In Study 3b and 4b differential reactions of high and low SEs to uncertainty only occurred under conditions of low power. High power, in contrast, led to the exhibition of democratic standard attitudes for both high and low SEs. The present findings are in line with previous research that reported powerful individuals to be more focused on goal pursuit, more ready to act, and less distractible by irrelevant information than powerless individuals (Galinsky et al., 2003; Guinote, 2007a). They are also consistent with literature showing that powerful individuals exhibit a simplified processing orientation and rely on pre-existing belief structures and values if the situation does not require more extensive deliberation (Briñol et al., 2007; Keltner et al., 2003). However, one could argue that the differential effects of high and low power are mainly driven by powerlessness instead of powerfulness in the present studies. Thus, only high SEs that feel powerless strive to increase their influence and show a democratic reaction and only powerless low SEs shy away from having influence and exhibit an authoritarian reaction. A closer look at the data of Study 3b shows that the distribution of power is skewed with an average score above the midpoint 3.00 ( $M = 3.15$ ,  $SD = 0.39$ ). The instruction to imagine being in a follower position in Study 4a also led to average power scores near the midpoint 3.00 of the scale ( $M = 2.98$ ,  $SD = 0.41$ ). Thus, only a few participants saw themselves as being absolutely powerless and, therefore, low power is not

low in an absolute sense but only in comparison to high power. According to this data it seems more plausible that median power is the normal case for the majority of students who participated in the present studies. Salience of high power, however, induces higher confidence and serves as a buffer against the reactions to uncertainty. Once induced the salience of dispositional high power (Study 3b) or the manipulation of leader position (Study 4b) provide high and low SEs with the means to circumvent extensive deliberation of expectancies and to rely on their democratic standard attitude. The hypothesized processes are presented in Figure 14.

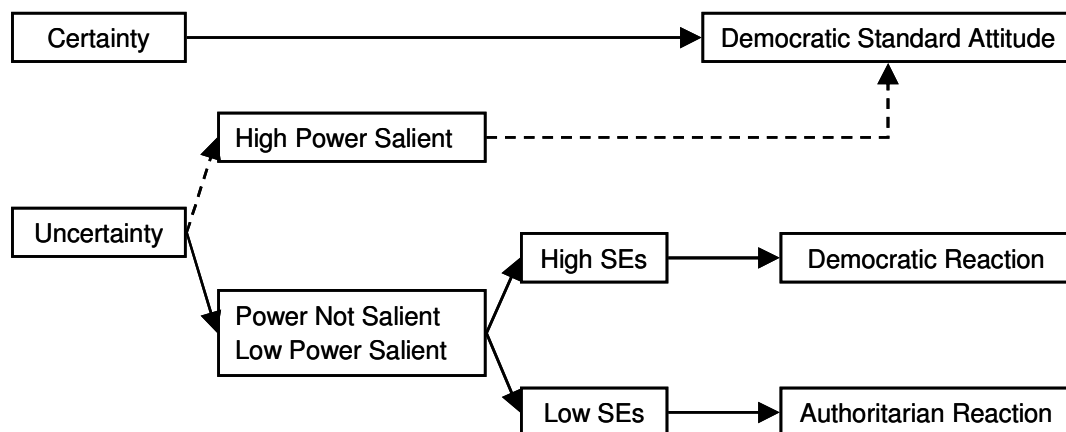


Figure 14. Schematic overview of the full model including the hypothesized effect of power on the reactions to uncertainty.

### 4.2.3 Why is the differentiation between success and valence important?

Deviations from the democratic standard attitude were only observed for the success but not for the valence dimension (Study 2). That is, under uncertainty high SEs showed an increase and low SEs a decrease in their implicit democratic success preferences but no significant changes in their democratic valence preferences. Regardless of conditions and type of measurement, democratic leadership was evaluated as pleasant and authoritarian leadership as unpleasant.

Valence evaluations were conceived as the affective and success evaluations as the cognitive component of leadership attitudes. Regarding valence judgments, it has been argued that democratic leadership communicates appreciation and respect (Tyler & Lind, 1992), whereas authoritarian leadership is linked to strong negative emotions (Bass, 1990; De Cremer, 2007; Judge, Piccolo, & Ilies, 2004). Research on attitude extremity proposed that extreme attitudes have a higher resistance to change than more indifferent attitudes (Abelson, 1995). Affective valence evaluations of democratic and authoritarian leadership

seem to be more extreme than cognitive success evaluations because ratings on the explicit valence scale tended to the poles, whereas ratings on the success scale were nearer to the midpoint (see Study 1, 2, 3b, and 4b). It can be suggested that whereas valence evaluations of democratic and authoritarian leadership are strong and characterized by extremity, and *intra-component* non-ambivalence, success evaluations encompass more *intra-component* inconsistency and ambivalence what makes them more pliable and unstable (e.g., Armitage & Conner, 2000), because they elicit greater cognitive elaboration (Hänze, 2001). In addition, previous research on attitude components provided evidence that the cognitive component is more affected by cognitive and the affective component is more affected by affective influence attempts (e.g., Edwards, 1990; Fabrigar & Petty, 1999). The weighing of expectancies is a cognitive process and should, therefore, have a much stronger impact on success than on valence evaluations.

Under certainty, the fundamental need for security is satisfied and evaluations of leadership are independent of the goal to resolve uncertainty. Consequently, individuals do not have to engage in weighing processes of expectancies and can rely on their democratic standard attitude regarding both valence and success. Previous research indicates that under normal conditions leadership evaluations are mainly influenced by valence judgments. Factor analytic studies, for example, consistently found that a single dimension accounts for most of the variance in leadership ratings (Bass, 1990; Russell, 2001; Scullen, Mount, & Goff, 2000), indicating a large impact of an affective component, i.e. how raters feel towards the leader (Brown & Keeping, 2005). Consistently, field studies demonstrated that performance appraisals were a function of how well the evaluator liked the person being evaluated (Varma, Denisi, & Peters, 1996).

The formalization of the uncertainty reduction motivation in an expectancy-value model takes only the expectancy whether participation is successful in resolving uncertainty and the value of uncertainty resolution into account. The valence of participation itself plays no role in these considerations. The certainly positive valence of uncertainty reduction does not necessarily imply that the means with which it is attained is evaluated as pleasant itself. If the weighing processes take place under uncertainty and if participation is linked to democratic and no participation to authoritarian leadership, then the choice between the two leadership styles should depend more strongly on success than on valence evaluations.

In conclusion, under certainty both valence and success evaluations –with an advantage of the valence dimension- should influence the choice between democratic and authoritarian leadership resulting in a clear democratic preference. Under uncertainty, goal-directed considerations especially take success expectancies into account. High SEs hold high expectancies and show a democratic reaction, low SEs have low expectancies and exhibit an authoritarian reaction. As the motive to resolve uncertainty is primary under

conditions of uncertainty, the judgment whether a leadership style is successful in uncertainty reduction should be most important. Pleasantness, in contrast, should play a minor role. Moreover, Lewin (1935) stated that the valence of an object is derived from the fact that the object is a means to need satisfaction (p.78) and consistently it has been shown that need related objects are judged more positively under deprivation (Drobes et al., 2001; Lavy & van den Hout, 1993), whereas the value of objects irrelevant for the activated need decreases (Brendl, Markman, & Messner, 2003). This could be explained as follows: The evaluation on the cognitive success dimension changes under uncertainty and is then in conflict with the affective valence dimension producing *inter-component* ambivalence. As explicated in section 2.2.3, ambivalence however promotes the desire to resolve the evaluative tension and the attitude is more prone to changes. First evidence for the assumption that success evaluations precede valence evaluations is provided by Study 1. There, leadership measures were administered in two order conditions: success-valence and valence success. Interestingly, although not significant, the order condition success-valence yielded a nearly twice as high correlation between the success and the valence IAT ( $r = .41, p < .001$ ) than the order condition valence-success ( $r = .24, p < .05$ ). Thus, in the long run also the valence evaluations of democratic and authoritarian leadership might change.

#### **4.2.4 Why is the differentiation between implicit and explicit important?**

Across studies, the present research found that uncertainty led in low SEs to more authoritarian and in high SEs to more democratic implicit success evaluations compared to conditions of certainty. Explicit success evaluations of high and low SEs, however, remained largely unaffected by the employed uncertainty manipulations. In their APE model Gawronski and Bodenhausen's (2006) explain differences of explicit and implicit evaluations by validation processes during propositional reasoning. They argue that associative evaluations are examined in respect of their consistency with activated propositions and are rejected as a valid basis for explicit judgments in case of inconsistency. The present dissertation hypothesized that the associations between authoritarian + success and democratic + failure should conflict with propositions belonging to a general system of democratic values most individuals hold in Western cultures. Thus, the authoritarian reaction expected for low SEs under uncertainty should only be expressed on implicit measures assessing the automatic evaluations of leadership success. Results were consistent with this hypothesis (see Study 2, 3b, & 4b). On the other hand, the associations between democratic + success and authoritarian + failure should be in line with predominant democratic values. Increased democratic preferences should therefore be regarded as valid and the democratic reaction of high SEs should be expressed on implicit and explicit measures. Actually, not only the authoritarian but also the democratic reaction was only found on implicit but not on explicit

leadership measures (see Study 3b & 4b). The finding that even associative evaluations that are consistent with existing propositional networks are not expressed in explicit judgments also occurred in a previous study. Baccus, Baldwin and Packer (2004) reported an increase in implicit self-esteem after a repeated pairing of self-relevant information and smiling faces. Explicit self-esteem measures, however, remained unaffected by this conditioning procedure.

In their assumptions Gawronski and Bodenhausen drew on Strack and Deutsch's (2004) reflective-impulsive model. A closer look at this model might help to explain the present finding that differences in leadership evaluations only emerged on implicit measures. The impulsive system is conceived of as a simple associative network (see also, Anderson & Bower, 1973; Bower, 1981) in which spreading activation is induced by perceptual input or reflective processes. Elements in this network are connected via associative links with different strengths and the activation of an element spreads to other elements in proportion to the strength of the links between them. Activation varies and information is only retrieved for further elaboration if the activation level exceeds a certain threshold. Thus, elements in this network require activation potential (Higgins, 1996) and the closer the activation level is to the threshold the less additional activation is necessary for retrieval or further processing. Without frequent and recent activation, however, the activation level decays and in consequence the information becomes less accessible. Information that is well connected with other nodes is more likely to be activated by spreading activation and, in turn, more accessible than isolated information. Links between elements are created or strengthened by the principle of temporal or spatial similarity (Bassili & Brown, 2005; Smith & DeCoster, 2000). The resulting structures form associative clusters of frequently co-occurring environmental aspects and affective, cognitive, or behavioral reactions. They do not carry semantic meaning or a truth value by themselves, but reflect correlations between elements of mutual activation.

The reflective system retrieves the elements from the impulsive system and generates declarative knowledge by assigning truth values to the concept and the relation. It is driven by the principle of consistency and if a proposition is not consistent with other propositions momentarily considered as relevant, it is invalidated by reversing the truth value.

The impulsive system is fast and requires little cognitive capacity or intention for evaluation. It is independent of the assignment of truth values, i.e. activation occurs irrespective of whether an evaluation is considered as valid or invalid. The reflective system transforms input from the associative store into propositions that are then considered as accurate or inaccurate if sufficient processing time, capacity and information are available. Both systems are supposed to operate in parallel, but whereas the impulsive system is always engaged in information processing of stimuli, the engagement of the reflective system

depends on the pre-activation of associations. Whether an element enters the reflective system depends on its accessibility, that is, its excitation level.

As explicit measures are supposed to tap knowledge structures and belief systems and implicit measures associative structures, these assumptions can be applied to the findings of the present research. Associative evaluations require a certain activation potential to be considered for propositional reasoning. Activation patterns of the democratic and the authoritarian reaction may not have reached the threshold for further processing and were, therefore, only exhibited on implicit but not on explicit measures. This can be explained by the circumstance that awareness of self-uncertainty is an exceptional state that occurs rarely in everyday life because individuals avoid thoughts of self-uncertainty if possible. Assuming that both certainty and uncertainty serve as stimuli activating different patterns of associations, the associative pattern related to certainty should have been activated more frequently and should be more strongly interconnected than that of uncertainty. Therefore, one could argue that the authoritarian reaction of low SEs and the democratic reaction of high SEs to uncertainty were only found on implicit measures because the excitation level of these activation patterns was not sufficient in order to enter the reflective system. Instead, for the explicit judgment an associative pattern was retrieved that had a higher excitation level due to its frequent activation and connectedness, that is, the democratic standard attitude.

However, an influence of the democratic and authoritarian reaction on explicit judgments seems likely when awareness of self-uncertainty is not exceptional as in the present studies but a frequent state. Thus, the more often external stimuli induce self-uncertainty and resultant feelings of uncertainty cannot be avoided, the more frequently are goal-related associative patterns activated and by this the higher become their excitation levels. Serious external threats can induce much stronger feelings of uncertainty than in the present studies and by this the goal of uncertainty reduction should also become more important. Thus more enduring and stronger states of self-uncertainty should heighten the accessibility of matching associative patterns, that is, the democratic reaction for high SEs and the authoritarian reaction for low SEs.

#### **4.2.5 Do implicit processes influence behavior?**

The research interest in attitudes is to a great extent determined by the goal to predict behavior. According to Strack and Deutsch (2004) behavioral schemata are localized in the impulsive system but can be activated by both associative links and reflective processes. As with other elements in the impulsive system also behavioral schemata have to be activated above a certain threshold in order to initiate the actual behavior. Whereas the reflective system elicits behavior through a deliberative process of decision-making and intending, the impulsive system operates through the associative spreading of activation. The two systems

can have synergistic and antagonistic effects. They can jointly activate the same behavioral schemata and by this heighten the activation level and, in turn, the likelihood of execution. Being independent of each other, the systems can also compete if they have an impact on different incompatible behavioral schemata or if the reflective system inhibits an impulsively activated behavior. Whether and which schema will then be executed depends on the respective activation level. A strong precursor of impulsive behavior is the deprivation of basic needs. Under these circumstances behavioral schemata that were previously related to need satisfaction will be activated and are likely to be predominant.

Oesterreich (2005) claims that during childhood the flight into the security of persons in charge is the normal reaction to threat and uncertainty. It can be hypothesized that high SEs efficiently replaced their originally authoritarian strategies to cope with uncertainty by more autonomous reactions, whereas low SEs never developed useful alternatives to replace their authoritarian reaction to uncertainty. Drawing on the expectancy-value model one could argue that high and low SEs believe different strategies to be successful. Due to differential expectancy levels that can be influenced by prior experiences, high SEs believe acting themselves and low SEs believe placing the responsibility on someone else to be the best solution of uncertainty. Consequently, in high SEs the primary goal of uncertainty reduction should activate autonomous behavior, in low SEs, however, tendencies to flee into the security of authorities, resulting in democratic behavior of the former and authoritarian behavior of the latter.

### **4.3 Relations to Other Approaches**

In the following two other research approaches are introduced that can be linked to the present research project. First, whether the authoritarian and democratic reaction found on the implicit success measure could be interpreted as an ascription to authoritarian or democratic leadership prototypes is discussed (4.3.1). Second, how the effects are related to research on mood and information processing is outlined (4.3.2).

#### **4.3.1 Leadership Prototypes**

Drawing on social identity theory (Tajfel, 1974) and self-categorization theory (Turner et al., 1987), Hogg (2000) proposes that ascription to a group prototype is an effective way to reduce uncertainty (see 2.3.2). Social identity theory states that one's self-concept is, in part, defined in terms of group membership, such that positive evaluations of one's group lead to a positive self-concept. Individuals strive for a positive evaluation of their group and, hence, for a positive social identity. In turn, the desire for positive distinctiveness promotes favoritism of the in-group and discrimination of the out-group (Turner, 1975). Whereas social identity theory focuses on intergroup behavior as a function of intergroup beliefs and the pursuit of

positive social identity, self-categorization theory explicates the process of social categorization itself. It is assumed that individuals cognitively represent social groups or categories as prototypes. According to Hogg (2000), prototypes are context-specific fuzzy sets defining and evaluating attributes that characterize one group and distinguish it from another. They are constructed to the principle of meta-contrast, thus maximizing the ratio of perceived intergroup differences to intragroup differences. In other words, similarities within the group and differences between groups are emphasized. Identification with a group operates via social categorization and depersonalization. Individuals categorize themselves to a salient social category, redefine themselves in terms of the group and by this assign the prototypical attributes of the group to themselves (Turner et al., 1987). During the process of depersonalization they cognitively and behaviorally assimilate to these features and their self-conception is transformed such that all aspects of their feelings, beliefs, and behaviors are assimilated to the in-group prototype. Others are perceived through the lens of features defined by the in- or out-group prototype resulting in stereotypical homogenization. By this, depersonalization affixes evaluative group attributes to self and positive self-evaluation is derived from group membership because the self is evaluated in terms of the usually positive in-group prototypes.

According to Hogg's (2000) uncertainty reduction hypothesis, under uncertainty individuals identify with groups and via a process of depersonalization assimilate to the in-group prototype. Due to a gradient of prototypicality within groups, some group members are more prototypical than others. In his social identity theory of leadership, Hogg (2001) postulates that if prototypicality is relevant (e.g., under uncertainty), prototypical group members are more influential and more likely to become a leader. If leaders, however, are prototypical and prototypical members best embody the group's attributes, assimilation to the in-group prototype means assimilation to the group's leader.

Whilst interpreting the present findings in line with these assumptions, the results suggest that uncertainty has differential effects on the preferred leadership prototype of high and low SEs. While high SEs subscribe to a democratic prototype, low SEs assimilate to an authoritarian prototype in order to reduce uncertainty. Prototypes are seen as multidimensional sets that are stored in memory, but can be modified to varying degrees by the social context. In the present research the use of implicit measures was crucial for demonstrating the differential reaction to uncertainty by high and low SEs. It could be argued that prototypes are represented as associative activation patterns and as activation patterns can change in response to contextual cues (see 2.6.3) also activated leader prototypes do. Under uncertainty the prototype that best fits and satisfies the activated need to reduce this aversive state becomes salient. Whereas a democratic prototype may seem to be more successful in reducing uncertainty for high SEs, an authoritarian prototype may be more



promising in need satisfaction for low SEs. As the search for the best fitting prototype “is a fast and relatively automatic cognitive perceptual interactive process that stabilizes when fit is optimized” (p. 188, Hogg, 2001), implicit measures might be more sensitive than explicit measures to assess this underlying mechanism.

Following this reasoning, completing the success IAT *per se* should reduce feelings of uncertainty. The following hypothetical experiment could put this hypothesis to a test. Self-uncertainty versus self-certainty is induced experimentally as in Study 3b and 4b, IAT completion follows and felt uncertainty is directly assessed afterwards. Half of the participants respond to the success IAT used in the present research, the other half works on a parallel IAT version with success as attribute category but a target category that is independent of leadership or social information. As Hogg (2000) proposed that ascription to a prototype should reduce felt uncertainty, completion of the leadership success IAT should cause lower levels of reported uncertainty compared to the neutral success IAT.

### 4.3.2 Mood

The present dissertation investigated the circumstances that lead to an authoritarian reaction and identified the interplay of uncertainty, self-esteem, and power as important influencing factors of leadership preferences. It was hypothesized that uncertainty activates the goal of uncertainty resolution and higher cognitive elaboration of behavioral alternatives and related expectancies in order to attain this goal were assumed. Under certainty, in contrast, reliance on the democratic standard attitude was expected. Accordingly, uncertainty led to differential reactions in high and low SEs that have been shown to hold different expectancies about their capabilities in previous studies, whereas under certainty the attitudes of high and low SEs did not differ systematically, indicating that expectancies did not play a role in this case. These assumptions are similar to previous research on effects of emotion, mood, and affect. In a number of studies, individuals have been shown to engage in more systematic processing under conditions of negative affect, and more heuristic processing under conditions of positive affect (Batra & Stayman, 1990; Bless, Bohner, Schwarz, & Strack, 1990; Mackie, Asuncion, & Rosselli, 1992; Mackie & Worth, 1989, 1991; Murray, Sujan, Hirt, & Sujan, 1990; Schwarz, 1990; Schwarz, Bless, & Bohner, 1991; Sinclair, 1988; Sinclair & Mark, 1992; Worth & Mackie, 1987; however, see Isen, 1993; Parrott & Sabini, 1990; Wegener, Petty, & Smith, 1995, for exceptions).

It could be argued that the present findings are due to general mood effects and are not specific for uncertainty reduction motives. However, several findings oppose this postulation. First of all, in the present studies the effects of uncertainty on leadership evaluations were not affected by positive or negative affect. Moreover, although most approaches argue that the valence of an affective state is responsible for the effects of mood

on cognitive processing, contradictory findings have been reported with regard to negative affective states. For example, while sadness activated systematic processing, anger motivated heuristic processing (Bodenhausen, 1993; Bodenhausen, Kramer, & Susser, 1994; Lerner, Goldberg, & Tetlock, 1998). Appraisal theories differentiate emotions not only along a valence dimension but also along a certainty-uncertainty dimension. Certain feelings such as anger, disgust, happiness, or contentment indicate an understanding of what is happening and induce a feeling of being able to predict what will happen. More uncertain feelings such as hope, surprise, fear, worry, or sadness, in contrast, indicate that one does not understand what is happening and induce feelings of being unsure about what will happen (Ellsworth & Smith, 1988; Roseman, 1984; Scherer, 1984; Smith & Ellsworth, 1985). Deconfounding the valence and certainty dimension of emotions, Tiedens and Linton (2001) showed in four experiments that -regardless of valence- emotions that are associated with uncertainty led to systematic and emotions associated with certainty led to heuristic processing. These findings strongly argue for the importance of the certainty-uncertainty dimension in emotions.

To the extent that emotions are negative *and* uncertain they might have similar effects on leadership preferences as reported in the present dissertation. However, following the presented argumentation these effects should be due to the motivation of uncertainty reduction because it seems difficult to explain the differential effects between high and low SEs under uncertainty alone with the negative valence of mood. As unambiguous negative affect does not serve as any cue to the goal of uncertainty reduction the assumed motivational processes of expectancy-value considerations are not required.

#### **4.4 Implications for Future Research**

The goal of the present dissertation was to determine the circumstances under which democratic leadership –though pleasant- is judged as less successful, whereas success evaluations of authoritarian leadership –though unpleasant- increase. Personal uncertainty, self-esteem and power were identified to be important moderator variables. Although the present research provides converging evidence in support of the main hypotheses that uncertainty leads to an authoritarian reaction of low SEs and that the salience of high power can cancel out this effect, some open questions remain that call for further investigation. How can stronger feelings of uncertainty be induced (4.4.1)? What is the process that mediates the differential reactions of high and low SEs to uncertainty (4.4.2)? Are there other variables beside power that can cancel out these reactions (4.4.3)? How can these reactions be assessed more precisely (4.4.4)? And how do these attitudinal reactions relate to behavior (4.4.5)?

#### **4.4.1 The Situational Precondition – Further Manipulations**

The present studies already relied on two different ways to induce self-uncertainty, that is, salience of trait uncertainty and priming of state uncertainty. However, it seems important to put the hypotheses to the test with even broader ways of uncertainty and threat manipulations. Terror Management Theory, for example, supposes that people who are reminded of death or who perceive a deadly threat (mortality salience) are more likely to favor charismatic and authoritarian over relationship-oriented leaders (Cohen, Solomon, Maxfield, Pyszczynski, & Greenberg, 2004; Cohen, Ogilvie, Solomon, Greenberg, & Pyszczynski, 2005; Landau et al., 2004). In line with TMT, even stronger effects on authoritarian leadership evaluations for more threatening stimuli could be postulated for low SEs. The authoritarian and democratic reactions only found on implicit measures in the present studies might, then, enter the reflective system and be expressed also on explicit measures. On the other hand, the present findings show that even mild uncertainty cues can have authoritarian effects. Thus, the present findings are compatible with a general uncertainty regulation perspective and terror management theory at the same time, both of which are equally capable of predicting authoritarian reactions following from mortality salience, that is, the strongest form of self-uncertainty induction. Contrary to assumptions of terror management theory, however, the present findings show that it does not have to be personally held or culturally endorsed political values that are responsible for resorting to authorities.

In addition, it seems promising to directly investigate whether the link between situational threats and authoritarianism is moderated by self-esteem and is mediated by perceived self-uncertainty.

#### **4.4.2 The Individual Predisposition – Mediating Processes**

In the present dissertation it was hypothesized that under uncertainty the motive of uncertainty resolution activates possible coping strategies and considerations about the expectancies to successfully employ them. Whereas high SEs believe in their capability to provide meaningful input and that their voice effectively contributes to uncertainty reduction, low SEs doubt their capabilities and, therefore, avoid having voice in decisions. Thus, it was argued that high SEs strive to maximize while low SEs to minimize their contribution to the uncertainty reduction process resulting in a democratic versus an authoritarian reaction in high and low SEs, respectively. The proposed underlying construct responsible for this differential effect can be understood in terms of self-efficacy. Bandura (1986) defined perceptions of self-efficacy as “people’s judgments of their capabilities to organize and execute courses of action required to attain designated types of performances” (p. 391). It seems worthwhile to directly assess this individual-difference variable as a potential

mediator. For this purpose the differentiation between global and specific self-efficacy might prove useful. In a further step, feelings of self-efficacy could be induced experimentally (see Brockner et al., 1998), expecting that the differential reactions to uncertainty of high and low SEs would be cancelled out.

#### **4.4.3 Further (Re-) Solution**

Perceived self-uncertainty should contradict the motivation of individuals “to see themselves as adaptively and morally adequate, competent, good, coherent, unitary, stable, capable of free choice, capable of controlling important outcomes, and so on.” (Steele, 1988, p. 262). One possible strategy to cope with uncertainty is the affirmation of some other unrelated aspect of the self, because “salient, self-affirming thoughts should make it easier to be objective about other, self-threatening information; they should reduce the pressure to diminish the threat inherent in this information.” (Steele, 1988, p. 290). McGregor and colleagues (2001) investigated the effects of personal uncertainty on compensatory conviction and found that participants hardened their attitudes towards social issues compared to a non-threatening condition. In another condition, however, this effect did not occur due to a self-affirmative task. Participants were instructed to select a value that was important to them and to write down reasons for their decision and how they have acted and will act in accordance to this value. De Cremer and Sedikides (2005) induced self-affirmation by instructing participants to list and think about three positive self-attributes and found that voice effects of individuals with an unclear self-concept were lessened compared to a no self-affirmation condition. Thus, self-affirmation seems to be a constructive and effective means to neutralize the threat of self-uncertainty and prevent the subsequent reactions regarding leadership preferences, in particular the authoritarian reaction, found in the present research.

#### **4.4.4 Further Assessment**

The IAT is a relative measure that is comparative in nature because a certain target category is always contrasted to a counter-category. In the present studies these were the categories democratic versus authoritarian. However, it has been argued that a traditional IAT is ambiguous in the absolute evaluation of the respective target concepts (Blanton, Jaccard, Gonzales, & Christie, 2006; Fiedler, Messner, & Bluemke, 2006; Nosek et al., 2005). Thus, it is difficult to infer from the present findings whether the democratic and authoritarian reactions are caused by changes in the evaluation of democratic or authoritarian leadership or by both at the same time. Wigboldus, Holland and van Knippenberg (unpublished manuscript) introduced a modification of the traditional IAT procedure that assesses the evaluation of a target object in absence of a counter-category, the Single-Target Implicit

Association Test (ST-IAT). That is, the participants are only presented with one of the target categories, whereas both attribute categories remain. Bluemke and Friese (2008) successfully demonstrated the ST-IAT's reliability and validity in assessing non-relative implicit target evaluations. Hence, the ST-IAT seems to be a promising tool in order to disentangle the complex attitudinal patterns of the democratic and authoritarian reaction.

#### **4.4.5 The Attitude-Behavior Link**

Although the relationship between attitudes and behavior is complex and sometimes difficult to reveal, it seems very important to investigate whether the democratic and authoritarian reaction on implicit measures can influence actual behavior (see 4.2.5) such as voting for political candidates, support and donations for democratic institutions, or choices of an employer. In future research, therefore, behavioral measures should also be employed and the mediational role of implicit evaluations on actual behavior should be investigated.

### **4.5 Democracy at Risk? – A Conclusion**

The present dissertation set out to determine the conditions in which individuals prefer an authoritarian over a democratic leader. *When* and *why* do individuals that hold strong democratic values tend to favor authoritarian leaders? The present studies are the first to directly investigate the effects of self-uncertainty on the evaluation of democratic and authoritarian leadership styles. Previous research focused on the link between social threat and authoritarianism in general, but not on self-uncertainty and leadership in particular. As self-uncertainty can be conceived of as the internal complement of many external threats and leaders are persons in power, influencing others and making the decisions, it seems quite important to combine threat approaches to authoritarianism with the present research on uncertainty and leadership. Self-esteem turned out to be an important moderator with low levels of self-esteem posing a threat to the democratic standard attitude. The differentiation between valence and success proved to be especially useful, because the hypothesized drop in the preference for democratic leadership under uncertainty only emerged on the cognitive success dimension. In addition, the use of implicit measures was crucial for unravelling the authoritarian reaction indicating their value for the sensitive research topic of authoritarianism. The present findings demonstrated that introspection and thoughts of self-uncertainty were sufficient to activate authoritarian associations in low SEs. More frequent or stronger feelings of self-uncertainty could make these associations also accessible for explicit judgments and as success evaluations are ambivalent, propositions consistent with the authoritarian associations could prevail. Thus, in extremely uncertain situations, authoritarian leadership may gain influence and importance because valence judgments retreat into the background and in the sense of the necessary evil, success evaluations

become predominant. As implicit evaluations are assumed to have a direct impact on behavior and strong and persisting feelings of uncertainty carry the danger to bring the associative evaluations to the surface of explicit judgment, the authoritarian reaction assessed in the present findings can posit a real threat to democracy. As it seems difficult to prevent individuals from perceiving uncertainty especially in the present times of increasing economic threat and international terrorism, approaches to strengthen the self-esteem of low SEs or to provide them with confidence in themselves are promising venues for the future.

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# 6 Appendix

## Appendix A - Uncertainty Manipulation

### **Study 3b**

Exact wording of the (un-)certainty manipulations used in Study 3b:

Bitte versetzen Sie sich nun möglichst intensiv in die folgende Situation:  
Stellen Sie sich vor, wie es ist, wenn Sie sich Ihrer selbst unsicher sind.

Was für Gefühle löst der Gedanke in Ihnen aus, sich Ihrer selbst unsicher zu sein?  
Was passiert körperlich mit Ihnen, wenn Sie sich Ihrer selbst unsicher fühlen?

Bitte versetzen Sie sich nun möglichst intensiv in die folgende Situation:  
Stellen Sie sich vor, wie es ist, wenn Sie sich Ihrer selbst sicher sind.

Was für Gefühle löst der Gedanke in Ihnen aus, sich Ihrer selbst sicher zu sein?  
Was passiert körperlich mit Ihnen, wenn Sie sich Ihrer selbst sicher fühlen?

### **Study 4b**

Exact wording of the (un-)certainty manipulations used in Study 4b:

Bitte versetzen Sie sich nun möglichst intensiv in die folgende Situation:  
Stellen Sie sich vor, wie es ist, wenn man sich seiner selbst unsicher ist.

Was für Gefühle löst Ihrer Meinung nach der Gedanke aus, sich seiner selbst unsicher zu sein.

Was passiert körperlich, wenn man sich seiner selbst unsicher fühlt.

Bitte versetzen Sie sich nun möglichst intensiv in die folgende Situation:  
Stellen Sie sich vor, wie es ist, wenn man sich seiner selbst sicher ist.

Was für Gefühle löst Ihrer Meinung nach der Gedanke aus, sich seiner selbst sicher zu sein.

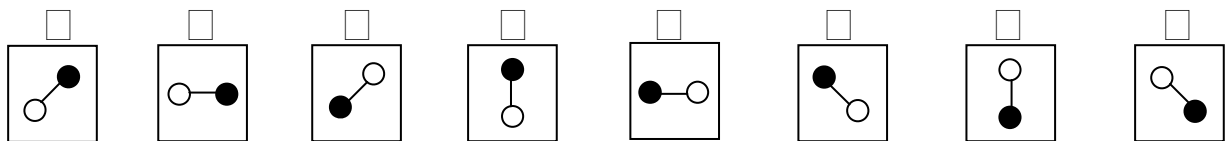
Was passiert körperlich, wenn man sich seiner selbst sicher fühlt.

## Appendix B - Spatial Power Measure

Instruction of the Spatial Power Measure in two different versions and the measure.

### ***Black Circle***

Bei der nächsten Aufgabe werden Ihnen die folgenden Kreispaare präsentiert. Stellen Sie sich bitte vor, die Kreise bei einem Kreispaar stellen zwei Personen dar. Sie **selbst** sind der **schwarze Kreis**, eine **andere Person** ist der **weiße Kreis**.

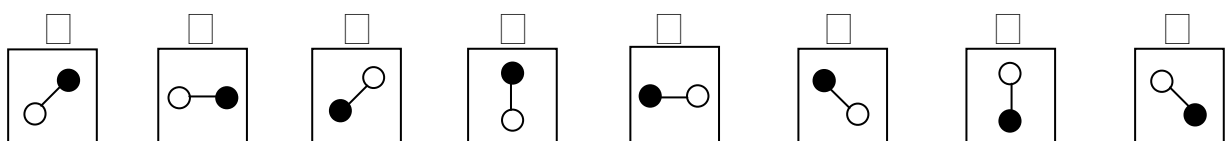


In unterschiedlichen Kombinationen werden nun immer zwei Kreispaare einander gegenübergestellt. Bitte vergleichen Sie die jeweils gegenübergestellten Kreispaare und kreuzen Sie das Kreispaar an, **das eher zu Ihnen passt**. Bitte gehen Sie die durchnummerierten Kombinationen von oben nach unten der Reihe nach durch.

Geben Sie bitte für jede Kombination ein Urteil ab. Antworten Sie so spontan wie möglich. Es gibt keine richtigen oder falschen Antworten. **Wählen Sie das Kreispaar, das eher zu Ihnen passt**.

### ***White Circle***

Bei der nächsten Aufgabe werden Ihnen die folgenden Kreispaare präsentiert. Stellen Sie sich bitte vor, die Kreise bei einem Kreispaar stellen zwei Personen dar. Sie **selbst** sind der **weiße Kreis**, eine **andere Person** ist der **schwarze Kreis**.



In unterschiedlichen Kombinationen werden nun immer zwei Kreispaare einander gegenübergestellt. Bitte vergleichen Sie die jeweils gegenübergestellten Kreispaare und kreuzen Sie das Kreispaar an, **das eher zu Ihnen passt**. Bitte gehen Sie die durchnummerierten Kombinationen von oben nach unten der Reihe nach durch.

Geben Sie bitte für jede Kombination ein Urteil ab. Antworten Sie so spontan wie möglich. Es gibt keine richtigen oder falschen Antworten. **Wählen Sie das Kreispaar, das eher zu Ihnen passt**.





## Appendix C - Power Manipulation

### ***Study 4a***

Exact wording of the leader and follower position manipulation used in Study 4a:

Bitte versetzen Sie sich nun möglichst intensive in die folgende Situation:

Bitte rufen Sie sich ein bestimmtes Ereignis in Erinnerung, bei dem **Sie selbst** einer anderen Person gegenüber in einer **Führungsposition** waren.

Bitte beschreiben Sie diese Situation- was ist passiert, wie Sie sich gefühlt haben, etc.

Bitte versetzen Sie sich nun möglichst intensive in die folgende Situation:

Bitte rufen Sie sich ein bestimmtes Ereignis in Erinnerung, bei dem eine **andere Person** Ihnen gegenüber in einer **Führungsposition** war.

Bitte beschreiben Sie diese Situation- was ist passiert, wie Sie sich gefühlt haben, etc.

### ***Study 4b***

Exact wording of the leader and follower position manipulation used in Study 4b. Instructions directly preceded IAT completion.

Bei der Bearbeitung der nun folgenden Aufgabe stellen Sie sich bitte eine andere Person vor, die Ihnen gegenüber in einer Führungsposition ist.

Um zu beginnen drücken Sie bitte jetzt die LEERTASTE.

Bei der Bearbeitung der nun folgenden Aufgabe stellen Sie sich bitte eine andere Person vor, der gegenüber Sie selbst in einer Führungsposition sind.

Um zu beginnen drücken Sie bitte jetzt die LEERTASTE.

## Appendix D - Implicit Leadership Measures

German target and attribute stimuli of the valence and success IAT used in Study 1, 2, 3b and 4b.

<b>German Target Stimuli (Valence &amp; Success IAT)</b>	
<b>demokratisch</b>	<b>autoritär</b>
sensibel	bestimmt
teamfähig	direktiv
liberal	energisch
integrativ	patriarchalisch
kumpelhaft	dominant

<b>German Attribute Stimuli (Valence IAT)</b>	
<b>ANGENEHM</b>	<b>UNANGENEHM</b>
JUWEL	LÄUSE
DÜFTE	MASERN
ENGEL	SCHLEIM
MEER	POCKEN
DIAMANT	DRECK

<b>German Attribute Stimuli (Success IAT)</b>	
<b>ERFOLG</b>	<b>MISSERFOLG</b>
SIEG	FEHLSCHLAG
AUFSTIEG	VERSAGEN
TRIUMPH	KRISE
GEWINN	VERLUST
GELINGEN	FLOP







# **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.

Mannheim, den 11.05.2009

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