WHEN FEELINGS MATTER:

POWER INCREASES RELIANCE ON SUBJECTIVE EXPERIENCES

by

MARIO WEICK

Dissertation submitted in partial fulfilment
of the requirements for the degree of

DOCTOR OF PHILOSOPHY
in
PSYCHOLOGY

University of Kent at Canterbury, UK
August, 2008

Memorandum

The theoretical and empirical work presented within the thesis is the independent work of the author. Intellectual debts are acknowledged within the text and referenced. The studies reported in the thesis were conducted with limited practical and technical assistance from others.

The author has not been awarded a degree by this, or any other, university for the work included in this thesis.

To my parents,

Monika and Helmut Weick

Acknowledgements

Words of sincere gratitude are due to many people who provided me with support and helped make this thesis possible. First and foremost, I would like to express my appreciation and thanks to my supervisor Ana Guinote, who guided me throughout the years and supported me in difficult periods. Most of what I am today as a researcher is due to her. Thank you very much for everything Ana.

I am indebted to Dominic Abrams, Luciano Arcuri, and Constantine Sedikides for their continuous support and the many recommendation letters. I would like to thank in particular Rich Crisp for taking me on his project last year.

Special thanks are due to all admin and technical support staff members at the Department of Psychology at the University of Kent who assisted me a lot. This thesis would have taken twice as long to complete without them.

Several organisations provided financial support for my graduate studies and allowed me to carry out my research. I would like to extend my sincere thanks to the German Academic Exchange Service (DAAD), the Economic and Social Research Council (ESRC), and the Department of Psychology at the University of Kent.

One of the most joyful parts of my research has been the Best Paper Award of the European Social Cognition Network (ESCON). A special thanks to all members of the steering committee for the honour, and for investing their time and effort to provide such a great network for young researchers.

Karen Douglas and Tirza Leader deserve my warmest thanks and appreciation for their insightful comments on an earlier draft of this thesis.

It is hard to imagine the past few years without the support of my dear friend Katerina. Thank you for being such a good friend and for all your encouragement throughout the years.

Most loving thanks are due to Miki, who always supported me and had to put up with my constant lack of time. Thank you for always being there for me and for helping me so much.

Neither my studies nor this research would have been possible without the sacrifice of my family, who suffered hardship while I was abroad. It is difficult to express my gratitude to them.

Abstract

Subjective experiences importantly contribute to the situated nature of human cognition and play a central role in guiding behaviour and judgments. However, past research on power focused exclusively on declarative knowledge, while the role of subjective experiences has been neglected. Focusing on the informational function of subjective experiences, nine experimental studies tested the assumption that power increases reliance on subjective experiences as a source of information in judgments and decision making.

Study 1 was correlational and found a link between power and self-reported reliance on experiences. Studies 2 to 5 used the ease-of-retrieval paradigm (Schwarz et al., 1991) to separate the contributions of declarative knowledge and subjective experiences to individuals' judgments. Across a variety of targets such as attitudes, self-perception, and stereotyping, and using different operationalizations of power including priming, trait-dominance, and actual power in managerial contexts, these studies showed that power consistently increased reliance on subjective experiences. Moreover, one study was longitudinal and showed that subjective experiences can have long-term effects and thereby contribute to judgmental stability. A sixth study confirmed the hypothesis that reliance on subjective experiences only provide powerful, but not for powerless individuals with a sense of certainty in their judgments. Finally, Studies 7 to 9 explored boundary conditions, showing that power does not necessarily always strengthen the impact of subjective experiences.

Taken together, the present research confirmed the hypothesis that power increases reliance on subjective experiences, and it highlights implications for judgmental stability and the ways individuals derive a sense of certainty in their judgments. The results also showed that powerful individuals are flexible perceivers and do not necessarily always draw on subjective experiences. These findings contrast with previous research that has focused on declarative information and the expression of core attitudes and prior knowledge. The present research supports an emerging perspective whereby power leads to greater flexibility in judgments and decisions.

Preface

The research for this thesis was conducted while the author was a full-time postgraduate student at the Department of Psychology, University of Kent, receiving financial support from the Department of Psychology and the Economic and Social Research Council (ESRC).

A manuscript based on parts of this thesis has been published in the *Journal of Personality and Social Psychology*. The manuscript received the *European Social Cognition Network (ESCON) Best Paper Award* in 2006. Parts of this thesis have been presented at meetings of the British Psychology Society (BPS) Social Section, the European Social Cognition Network (ESCON), and the European Association of Experimental Social Psychology (EAESP).

Table of Contents

Table of Contents (cont.)

Table of Contents (cont.)

List of Tables

List of Tables (cont.)

CHAPTER 1: INTRODUCTION

Feelings matter. Humans care about their experiences; about happiness and joy, friendship and love, and hardship and pain. Because feelings matter, much of human action surrounds them. We listen to music to experience sound and rhythm; we sleep to overcome fatigue; we eat to relieve hunger; we engage in relationships to experience physical closeness; and we work to experience pride and accomplishment.

Feelings also matter because they tell us what to think and what to do (e.g., Schwarz & Clore, 1996). Feelings guide our judgments and decisions, and they can be the basis for what we buy, where we go, or whom we trust. It is this informational function of subjective experiences that forms the topic of the present work. This work examined the role of feelings and experiences in the judgments and decisions of powerful and powerless individuals.[1] The present research tested the hypothesis that power increases reliance on subjective experiences as a source of information to guide judgments and decision making.

The idea that power promotes reliance on feelings has some mainstream appeal. Powerful figures such as presidents (e.g., Ronald Reagan, George W. Bush), military leaders (e.g., Ronald Schwarzkopf), or top business executives (e.g., Cara Fiorina; Robert Pittman) are known for frequently resorting to their feelings to inform their judgments and decisions. A recent survey amongst business leaders revealed that 45% of corporate executives asserted relying more on their feelings than on facts and figures in running their business (Bonabeau, 2003). And feelings are on the rise - increasingly recognised as sine qua non for top executive decision making and 'true' leadership (see Hayashi, 2001).

---

[1] In the following the terms *feelings* and *experiences* are used interchangeably to denote the same construct (see Clore, 1992; Strack, 1992)

In spite of the mainstream interest, previous socio-cognitive research has largely ignored the role of feelings in the decision making process of powerful individuals. Empirical research focused on the declarative content that formed the basis for powerful individuals' judgments. Accompanying subjective experiences were not considered. The present research rectifies this neglect by proposing that power promotes reliance on experiences as a source of information.

The proposal that power fosters a proclivity for feeling-based judgments derives on the one hand from research indicating that power affects basic cognition and induces a simplified processing orientation that focuses on primary sources of information; and on the other hand from research into the informational function of subjective experiences, suggesting that experiences provide a primary source of information in judgments and decision making. As will be shown, these two lines of research converge on the assumption that power promotes a cognitive processing orientation that favours the use of experience-based information in judgments and decision making.

This thesis examines the relationship between power and reliance on subjective experiences, separating the contributions of feelings and declarative information in powerful and powerless individuals' judgments. The present work probes reliance on subjective experiences in a variety of judgmental domains, and using several operationalizations of power, thereby contributing to the generalizability of the effects.

A second aim of this thesis is to highlight some implications of the association between power and reliance on subjective experiences. In particular, the consequences for judgmental stability, and the ways powerful and powerless individuals derive a sense of certainty in their judgments will be addressed. Finally, the present work also

examines boundary conditions for the effects of power. Hereby the focus lies on the role of the informational value of subjective experiences, and on different classes of subjective experiences.

The judgments and decisions of powerful actors often have important implications for other individuals. Studying the relationship between subjective experiences and power is not only important to illuminate the processes that underlie these judgments. An association between power and reliance on subjective experiences also offers a new perspective to the field. Previous research has argued that power leads to greater stability and reduces the impact of momentary sources of influence (see Keltner, Gruenfeld, & Anderson, 2003). In contrast, the present research supports a more dynamic and situated perspective (see also Guinote, 2007a), whereby power leads to greater flexibility and augments the impact of momentary experiences.

The next chapter reviews previous work on power and subjective experiences and establishes the theoretical framework for the present research. Chapter three is separated in three sections. The first part presents four studies that focus on establishing the basic relationship between power and reliance on subjective experiences. The second part includes two studies addressing the implications of these findings for judgmental stability and certainty. Part three focuses on establishing boundary conditions of the effects of power. Three experimental studies are devoted to this purpose. Chapter four reviews again the main findings and discusses limitations of the present research. The chapter concludes with a brief synopsis on theoretical and practical implications.

CHAPTER 2: THEORETICAL BACKGROUND

2.1. Overview

Chapter two first defines power and then reviews the antecedents and the psychological consequences of power. This is followed by a brief outline of the main theoretical models of power. Chapter 2.3. examines the role of experiences in the construction of judgments, whereby the focus lies on the informational function of subjective experiences. The processes that underlie experience-based and content-based routes to judgments will be briefly addressed. Chapter 2.4. then establishes the basic rationale for the present work, and concludes with a discussion of the ways powerful and powerless people rely on experiences to inform their judgments and decisions. Finally, Chapter 2.5. outlines the main objectives of the present research.

2.2. Power

Power is a social variable that derives from the relationship between individuals (e.g., dyadic relationships) or groups (e.g., work groups; see Emerson, 1962; Ng, 1980). Power differentials are omnipresent and can be observed at all levels of the social structure (e.g., nations, societies, institutions, groups, dyads; see Buss, 1988; Eibl-Eibesfeldt, 1989; Mazur, 1985). This diversity is reflected in the scientific study of power. Research on power bridges all levels of analysis, covering intraindivudal and interindividual processes as well as intergroup and group dynamics (Brauer & Bourhis, 2006; see also Doise, 1986).

Power is a central concept in social sciences. Sociology and political sciences are primarily concerned with the balance of power and with describing the dynamics of the power relationship (e.g., Simmel, 1896). These sciences focus on the constitution of power (e.g., Bachrach & Baratz, 1962; Dahl, 1961; Lukes, 1974; Russell, 1938), the existence of social order (e.g., Mills, 1956; Parsons, 1963), social conflict (e.g., Duke, 1976), and social stratification (e.g., Weber, 1948). Social Psychology contributes to the study of power through its emphasis on the interindividual and the intraindividual level (e.g., Adler, 1966; Cartwright, 1959; Heider, 1958; Thibaut & Kelley, 1959). After several decades of pause, there has been a resurgence of interest in the consequences of power for those who possess it (Keltner et al. 2003). The present research is based upon these lines of research and examines the consequences of power for the individual. The subsequent discussion focuses on this domain.

2.2.1. Definition

Power originates from the Latin word *potere*, which means *to be able.* The definition of power has been subject to debate. Power has originally been associated with the ability to act effectively and to produce desired outcomes (e.g., Freud, 1930; Heider, 1958; Weber, 1947), while current definitions of power focus on the ability of an individual or a group to control others' outcomes and resources.

Power as Influence. Several scholars have defined power based on its effects (see Fiske & Berdahl, 2007). These definitions describe power as influence over others (e.g., Simon, 1957), and as the ability to achieve an intended outcome (Dahl, 1957). However, defining power in terms of influence has a potential drawback since it remains unclear what leads to this influence in the first place (Fiske & Berdahl, 2007). Some scholars circumvent this problem by conceptualizing power in terms of the potential to affect others (see Fiske & Berdahl, 2007). French and Raven (1959) defined power as the potential ability to influence others, which is akin to Lewin's (1941) idea that power denotes the ability to induce force. Some current scholars have echoed this definition of power (e.g., Manz & Gioia, 1983; Vescio, Snyder, & Butz, 2003). Essentially, these definitions agree that power implies potential influence because those in power control outcomes or resources of others.

Power as Control. Most definitions of power focus on the ability to control resources or outcomes (e.g., Copeland, 1994; Dépret & Fiske, 1993; Kipnis, 1976; Thibaut & Kelley, 1959). In this view, someone in power controls something another social agent (i.e. an individual or a group) wants or requires. Because power implies

asymmetry in outcome control (see Dépret & Fiske, 1993), these definitions stress the fact that power is socially situated.

Bases of Power. The bases of power have been subject to considerable debate and empirical scrutiny (e.g., Bass, 1981; French & Raven, 1959; Gold & Raven, 1992; Elias & Loomis, 2004; Erchul, Raven, & Ray, 2001; Kipnis, 1984, 2001; Koslowsky & Schwarzwald, 2001; Nesler, Aguinis, Quigley, Lee, & Tedechi, 1999; Raven, 1993, 1999, 2001; Raven, Schwarzwald, & Koslowsky, 1998; Yukl & Falbe, 1991). In their now classic work, French and Raven (1959) identified six bases of power (rewards, coercion, legitimacy, expertise, reference, and information), which they later expanded into further subcategories (Raven, 1993, 2001). While there is some disagreement on the exact classification of the ways individuals can exert power, there is a consensus that the valued outcomes that powerful individuals control can be material (e.g., money, food, shelter), physical (e.g., physical harm, physical pleasure) or social (e.g., affection, support, verbal abuse; see Fiske & Berdahl, 2007). Power implies the capacity to withhold or to provide any of those resources. The strength of power is relative to the extent that these resources are considered valuable by another social agent (i.e., an individual or a group, see Emerson, 1962; Thibaut & Kelley, 1959).

Social and Personal Power. *Social power* can be differentiated from the concept of *personal power* (e.g., Overbeck & Park, 2001). Personal power denotes the ability to act with agency and to produce intended effects in the environment (Heider, 1958; Ng, 1980; Overbeck & Park, 2001; Van Dijke & Poppe, 2006). Personal power is therefore closely related to concepts such as competence (White,

1959), autonomy (e.g., Ryan & Deci, 2000), mastery (e.g, Perlin & Schooler, 1978), locus of control (Rotter, 1966), and self-efficacy (Bandura, 1991).

Personal power and social power are not orthogonal. Being subject to others' social power reduces one's personal power (Brehm, 1993; Dépret & Fiske, 1993; Van Dijke & Poppe, 2006). Likewise, social power increases access to resources, privileges, and freedom from constraints (Fiske & Dépret, 1996; Keltner et al., 2003). Powerful individuals can act at will (Lewin, 1947), and have greater control over their own outcomes (Fiske & Dépret, 1996; Keltner et al., 2003). Consequently, personal power and social power can be allocated along the same continuum. Both concepts describe an individual's level of control running from the total absence of control to absolute control over one's own and others' outcomes and resources (Guinote, 2004, 2007a; Smith & Trope, 2006). This is an important point to make. From a psychological point of view, having power means having control.

The present thesis focuses on the consequences of *social power* for reliance on subjective experiences. Individuals with social power control not only their own, but also other individuals' outcomes and resources. These individuals, therefore, experience particularly high levels of control. As later sections will argue, it is this greater sense of control, which leads powerful individuals, but not powerless individuals, to rely on subjective experiences as a source of information in judgements and decisions making.

There are, however, also exceptions to the link between power and control experiences (Wrong, 1979). For instance, parents can experience a low sense of control although they are, objectively, in a high power position (e.g., Bugental, Lyon, Krantz, & Cortez, 1997). These individuals are likely to behave, think, and feel as individuals in low power roles (Anderson & Berdahl, 2002; Bugental & Lewis, 1999).

Thus, experiences of control are important determinants of the effects of power on individuals' behaviour and cognition (see also Gruenfeld, Keltner, & Anderson, 2003).

Power as a Motive. Whilst the previous sections have emphasized the socially situated nature of power, many early scholars have also argued for a dispositional nature of power (e.g., Adler, 1966; Kipnis, 1976; McClelland, 1975; Mulder, 1977; Ng, 1977; Nietzsche, 1883-1888/1968; Sullivan, 1947; Winter, 1973). In this view, humans are motivated to gain influence over other individuals (e.g., Veroff, 1957). More recently, Van Dijke and Poppe (2006) have shown that the striving for power can be best understood as a striving for personal power. Thus, it appears the primary concern of humans is to decrease dependence, rather than to increase control over others per se (Van Dijke & Poppe, 2004, 2006). Since personal power refers to the ability to produce intended effects, the human power motive can be considered analogous to other theories about the human need for agency (Bandura, 2006), self-mastery (Ryan & Deci, 2000), or personal control (Rotter, 1966). Thus, although individuals also differ in the extent to which they are motivated to be superior to others (McClelland, 1976; Winter, 1973), the more basic concern appears to be the need to interact effectively with the environment (e.g., White, 1959), and to produce desired outcomes (e.g., Pittman & D'Agostino, 1985; Skinner, 1995; see also Dépret & Fiske, 1993).

Differentiating Power from Related Constructs

Everyday observations suggest that powerholders often have high status and leadership positions. To define power, one needs to distinguish power from these related constructs. This is the focus of the subsequent section.

Status. Power and status are distinct constructs. Status describes the possession of attributes that are considered valuable by others and thereby induce liking and respect (Fiske & Berdahl, 2007; Keltner et al., 2003). Thus, similar to power, status is socially situated. In natural contexts power and status are often overlapping, but this is not necessarily always the case. Low status individuals can occupy powerful positions (e.g., a nightclub bouncer), and vice versa (e.g., European aristocrats). The perception of powerholders varies as a function of their status: High status confers legitimacy and thereby a more positive view of powerholders (Fragale, Overbeck, & Neale, 2008).

Leadership. Leadership describes an influence process, whereby a group member persuades other group members to achieve a collective goal (Chemers, 2001). Thus, the main concern is the formation of cohesive and goal-oriented groups (Hogan, Curphy, & Hogan, 1994). Status (Conway, Pizzamiglio, & Mount, 1996) and prototypicality (Hogg, 2001) are antecedents of leadership. Leaders can use different strategies to influence a group, such as establishing exchange (transactional leadership style) or by acting as role models (transformational leadership style; e.g., Alimo-Metcalfe & Alban-Metcalfe, 2001; Carless, Wearing, & Mann, 2000). Depending on the influence strategy that leaders use, leadership and power can sometimes overlap. This is illustrated by earlier approaches to leadership that focused on the distinction

between democratic and autocratic leadership styles (e.g., Lewin & Lippitt, 1938). Autocratic (directive) leaders tend to act in more overpowering ways than democratic (participative) leaders, who involve subordinates in the decision process.

Social dominance orientation. Social dominance orientation is an individual difference variable that reflects a preference for group-based inequalities and for a hierarchically organised social structure (see Pratto, Sidanius, Stallworth, & Malle, 1994; Sidanius & Pratto, 1999). People high in social dominance orientation welcome the disparity between groups in a hierarchy. Social dominance orientation can be used to describe the relationships and behaviours of members of groups. It is also conceived as an ideological belief system (Brauer & Bourhis, 2006; Duckitt, Wagner, du Plessis, & Birum, 2002).

2.2.2. Antecedents of Power

Considering that power implies abundant resources and freedom from constraints, the question arises what factors are decisive for some individuals to attain powerful positions, whereas others do not. Early approaches emphasized the role of personality differences. In this view, personality traits predispose individuals to occupy dominant or submissive positions in the social structure. For instance Russell (1938) drew a distinction between an 'imperious' and a 'timid' orator. Using leadership as a proxy for power, there is some support for such a trait approach. A recent meta-analysis found that extraversion, openness and conscientiousness are positive predictors of leadership emergence (Judge, Ilies, Bono, & Gerhardt, 2002). Extraversion has also been shown to predict status differences in fraternity and sorority groups (Anderson, John, Keltner, & Kring, 2001). Others have linked

leadership emergence to individual differences in intelligence and cognitive abilities (Mann, 1959; Lord, DeVader, & Alliger, 1986; Kirkpatrick & Locke, 1991).

However, the literature on leadership needs to be treated with caution because, as mentioned above, leadership may or may not imply power. Clearer evidence for the role of individual differences comes from research on personality dominance, which is considered as one of the most potent individual differences variable that predicts power (see Anderson & Berdahl, 2002; Ellyson & Dovidio, 1985). Dominant individuals tend to behave in assertive and overpowering ways across situations (e.g., Buss & Craik, 1980; Gough, 1987; Mann, 1959), which ultimately leads them to attain high power roles (e.g., Harper, 1985; Lord et al., 1986; Megargee, 1969; Stogdill, 1948; Weisfeld & Linkey, 1985).

Assuming that individual differences in personality contribute to the emergence of power differentials, and considering that personality traits are heritable (e.g., Plomin, DeFries, McClearn & McGuffin, 2001), one might also suspect a genetic contribution to people's abilities to attain power. In fact, studies point out that extraversion in humans (e.g., Pincombe, Luciano, Martin, & Wright, 2007; Scarr, 1969) and characteristics related to dominance in animals (Horne & Ylonen, 1998) are partly genetically determined. Furthermore, studies with young children show that hierarchies are readily formed (Savin-Williams, 1979). Arguably, the evidence is speculative and further research is required to establish the role of heritability in the acquisition of power in humans.

Whilst the role of genetic contributions remains unclear, there is converging evidence for a biological basis for power striving in humans. In particular, baseline testosterone levels predict the extent to which individuals display dominant behaviours (e.g., Archer, 2006), preferences for high status occupations (Dabbs, La

Rue, & Williams, 1990), and future challenge responses to status competitions (e.g., Mazur & Booth, 1998). Josephs, Sellers, Newman, and Mehta (2006) demonstrated a match between testosterone levels and status. Josephs and colleagues showed that individuals with high levels of testosterone displayed increments in psychological and physiological functioning in high status positions, whereas individuals with low levels of testosterone performed best in low status positions. Conversely, a mismatch between status and testosterone level resulted in negative emotional reactions and impaired cognitive functioning. These results point to a physiological contribution in the acquisition and maintenance of high power positions.

As hinted by the above discussion of dominance and the role of testosterone, individuals can attain powerful positions through their interactions with others. Postural expansion (e.g., Aries, Gold, & Weigel, 1983; Mehrabian, 1972; see also Tiedens & Fragale, 2003), and eye gaze patterns (e.g., Dovidio, Ellyson, Keating, Heltman, & Brown, 1988; Ellyson & Dovidio, 1985) are behavioural signatures of power, and can assist individuals to attain control over others. Also verbal communication style is important. Individuals who speak assertively are more likely to acquire powerful positions (see Fragale, 2006). Likewise, teasing signals power relationships (Keltner, Young, Heerey, Oemig, & Monarch, 1998; Savin-Williams, 1977). Furthermore, content-free speech markers (e.g., hesitations; disclaimers) can determine as to whether individuals achieve powerful roles (e.g., Gallois, Callan, & Palmer, 1992; Parton, Siltanen, Hosman, & Langenderfer, 2002).

Not only people's own actions, but also the social context determines who yields power and who does not. People have schemas or expectations associated with characteristics that confer power (Berger, Cohen & Zelditch, 1972; Ridgeway, 2004). For instance, men are more likely to occupy dominant roles than women (e.g.,

Beckham & Aronson, 1978; see Schmid Mast, 2004), and they are preferred in powerful roles in male domains (Eagly, Makhijani, & Klonsky, 1992; Elias, 2004). This tendency for male dominance can already be observed at very early stages of perception (Maner, DeWall, & Gailliot, 2008). Height, age, and physical attractiveness are also indicators of status (Anderson et al., 2001; Berger et al., 1972; Wilson, 1968), thereby conferring the legitimacy to enact high power positions (see Fragale et al., 2008). For instance, research shows that taller parents are considered more powerful (Schwartz, Tesser, & Powell, 1982). Physical height also predicts income levels and occupational success after controlling for age, gender, and weight (see Judge & Cable, 2004). The fact that vertical size functions as a perceptual cue for power could contribute to these effects of physical height (see Giessner & Schubert, 2007; Schubert, 2005). Finally, the social context in terms of group affiliations can also be an antecedent of power. Members of majority groups (Nemeth, 1986) or high economic status groups (Domhoff, 1998) are more likely to yield power than members of minorities or members of low economic status groups.

Not only do many factors contribute to the acquisition of power, there is also abundant evidence that power affects those who lack or possess it in a multitude of ways. The following section reviews this literature. As will be seen, power affects human information processing in ways that should make individuals inclined to use subjective experiences as a source of information to guide judgments and behaviour.

2.2.3. Consequences of Power

Much of human cognition is linked to control. Perception aims at gaining control over the environment (Heider, 1958), and cognitive processes provide meaning and predictability of what is perceived (Moskowitz, Skurnik, & Galinsky,

1999). There is extensive evidence that humans alter their information processing strategies when attempts to control important outcomes fail (e.g., Weary, Marsh, Gleicher, & Edwards, 1993). Since power gives individuals a sense of safety and control (see Keltner et al., 2003), the relative power individuals have should have consequences for cognition and action. Earlier research on social perception, and more recent research on basic cognition, suggest this is indeed the case (for reviews see also Fiske & Berdahl, 2007; Keltner et al., 2003).

Social Perception. Research on power and social perception has traditionally attracted a great deal of attention (e.g., Chen, Lee-Chai, & Bargh, 2001; Chen, Ybarra, & Kiefer, 2004; Dépret & Fiske, 1999; Fiske, 1993; Goodwin, Gubin, Fiske, & Yzerbyt, 2000; Goodwin, Operario, & Fiske, 1998; Guinote, Judd, & Brauer, 2002; Overbeck & Park, 2001, 2005; Stevens & Fiske, 2000; Vescio, Gervais, Snyder, & Hoover, 2005; Vescio et al., 2003). It is widely assumed that power promotes stereotyping and reliance on prior knowledge (see Fiske, 1993; Fiske & Dépret, 1996; Goodwin et al., 2000; Keltner, et al. 2003; Keltner & Robinson, 1997; Rodriguez-Bailon, Moya, & Yzerbyt, 2000). For example, in an extensive line of research Susan Fiske and her colleagues (Fiske, 1993; Fiske & Dépret, 1996; Goodwin et al., 2000) found that powerful individuals attend more to stereotype consistent information of social targets compared to stereotype inconsistent information, whereas powerless individuals attend also to stereotype inconsistent information.

A stereotypical perception of others can be detrimental to judgmental accuracy. Keltner and colleagues (Ebenbach & Keltner, 1998; Keltner & Robinson, 1996, 1997; see also Keltner et al., 2003) operationalized power in terms of membership in minority and majority groups. The authors found that members of powerful majority groups (e.g., senior professors; majority partisans) were less

accurate judges of outgroup members' views, while members of less powerful minority groups (e.g., junior professors; minority partisans) judged the views of other groups more accurately. The less accurate social perception of powerholders could be linked to a lack of perspective taking (cf. Galinsky & Moskowitz, 2000). Power decreases the tendency to take other view-points into account, and leads to deficiencies in judging other individuals' emotions (Galinsky, Magee, Inesi, & Gruenfeld, 2006; see also Jenkins & Astington, 1996; Mannix & Neale, 1993).

A lack of perspective taking can also promote the tendency to project one's own traits onto others. This is consistent with a series of studies by Weick, Crisp, and Hogg (2008a), who observed that power *increased* perceptions of similarity between the self and others. This self-anchored bias in others' perceptions was not confined to a particular target group (i.e. it was observed for perceptions of friends, fellow students, employees), and it occurred in both pleasant and unpleasant interaction contexts. The studies also showed that while powerful individuals perceived themselves to be similar to others, the latter clearly did not share this view.

Although the above evidence would suggest that power promotes a more careless and less systematic approach in the perception of other individuals, recent research shows this is not necessarily always the case. Overbeck and Park (2001, 2006) demonstrated that powerful individuals can individuate others better than powerless individuals when they are motivated to do so. In their studies power led to more stereotyping, or more individuation depending on the goals that guided social perception at a given moment. Consequently, powerholders demonstrated greater flexibility in their social attention. This is consistent with studies that found power enhances information seeking and scrutiny when accurate impressions of others are being called for (Chen et al., 2004).

Extending the work on power and social perception, Weick, Crisp, and Hogg (2008b) recently showed that power not only affects perceptions of other individuals' characteristics, but also perceptions of the self. Weick and colleagues found that lack of power promoted self-stereotyping. That is, powerless individuals, more than powerful individuals, tended to ascribe to themselves traits and characteristics that are typical for their group. These findings mirror Simon and Hamilton (1994), who observed more prototypical self-perceptions in minority as compared to majority group members. These effects of power on self-perceptions can also be observed at the group level, where lack of power promotes a more categorical perception of the ingroup (e.g., Simon & Brown, 1987, see also Guinote et al., 2002).

Taken together, power often induces a more stereotypical and less systematic perception of others. However, when afforded by the circumstances, powerful individuals can individuate better, and they pay even more attention to individuating social information than powerless people. Finally, it appears that the tendency to stereotype powerless individuals is not confined to the perception of powerholders only – those who lack power are also inclined to view themselves and members of their own group in more stereotypic ways.

Prejudice and Discrimination. The stereotypic perception of powerholders can also translate into overt discrimination and social maltreatment. Studies of intergroup conflict show that members of powerful groups display higher levels of in-group favouritism and a greater tendency to derogate outgroups (e.g., Mullen, Brown, & Smith, 1992; Ng & Cram, 1988; Sachdev & Bourhis, 1991). At the individual level, Richeson and Ambady (2003) observed enhanced automatic racial prejudice in powerful white participants anticipating an interracial interaction, and Rind and

Kipnis (1999) found that individuals using authoritarian influence strategies were more likely to derogate their interaction partners. Together these studies corroborate the view that power corrupts (e.g., Kipnis, 1972; Kipnis, Castell, Gergen, & Mauch, 1976). This view still prevails in current research (e.g., Anderson & Berdahl, 2002, Tenbrunsel & Messick, 2001), the media (e.g., the cinema remake of Zimbardo's 'Experiment'; Conrad & Hirschbiegel, 2000), and the public sphere (e.g., giving rise to checks and balance practices).

However, power does not always lead to abuse. In fact, an increasing body of evidence shows that the negative consequences of power are determined by other factors. For instance, studies on negotiation show that power promotes competition in a competitive context, and cooperation in a cooperative context (Tjosvold, Johnson, & Johnson, 1984; see also Mannix, 1994). Similarly, powerful individuals take more from a common good, but they also contribute more to it depending on what the situation calls for (Galinsky, Gruenfeld, & Magee, 2003).

Moreover, powerful individuals tend to act in good or evil ways depending on their enduring personality characteristics. Research shows that relationship orientation – an individual difference variable (see Clark & Mills, 1979) – moderates the positive and negative consequences of power. Powerful individuals with a communal orientation act in more socially responsible ways, whereas exchange orientation increases selfishness in powerholders (Chen et al., 2001). Similarly, interdependent individuals in power tend to act more generously in dyadic conflicts than powerful individuals with independent self-construal (Howard, Gardner, & Thompson, 2007).

Finally, whether or not power leads to discrimination also depends on what individuals associate with power (see Chen et al., 2001). For instance, power is linked to sexual aggression, but only in men who possess a propensity to sexually harass (see

Bargh, Raymond, Pryor, & Strack, 1995; see also Zurbriggen, 2000). These individuals have mental association between the concept of power and sex. Thus, the consequences of power for discrimination and abuse depend on the social context and individual difference characteristics. Asymmetric power relationships provide the opportunity to 'corrupt', but power in itself does not foster discrimination and abuse.

Emotional Experiences. It is widely assumed that power alters individuals' emotional experiences (e.g., Anderson & Berdahl, 2002; Keltner et al., 2003; Kemper, 1991; Tiedens, Ellsworth, & Mesquita, 2000). People have differential *expectations* of the prevalence of particular emotions in powerful and powerless individuals. Approach related emotions such as anger, contempt, and pride are commonly associated with high power, whereas sadness, fear, and embarrassment are seen as linked to submissiveness and low power (e.g., Tiedens et al., 2000; Conway, Di Fazio, & Mayman, 1999). Certainty is an appraisal characteristic that is common for emotions expected in high power individuals, while appraisals of uncertainty are a shared feature of emotions expected in low power individuals (see Roseman, 1984, Scherer, 1984). Power has also been shown to affect the *display* of behavioural responses that are typically associated with positive affect (e.g., genuine smiling; see Cashdan, 1998; Deutsch, 1990; Hecht & LaFrance, 1998) and anger (Ellyson & Dovidio, 1985; see also Tiedens, 2001).

However, very little research has directly examined the consequences of power for actual emotional *experiences*.[2] Some authors have argued for an association between elevated power and generalized positive affect (e.g., Keltner et al., 2003; but

[2] Studies commonly cited as evidence for power differences in approach-related emotions are mostly unpublished (e.g., Conway, & Pizzamiglio, 1996; Tiedens, Ellsworth, & Moskowitz, 1998). One study by Berdahl and Martorana (2006) found power*lessness* increased anger experiences in a negotiation context.

see Winter, 1973, for a different perspective). Although there is some support for this hypothesis (Berdahl & Martorana, 2006; Keltner et al., 1998), the evidence appears largely mixed with some studies showing positive correlations while other studies do not (see Anderson & Berdahl, 2002; Smith & Trope, 2006). Taken together, there is some support for the notion that elevated power links to approach-related emotional responses such as happiness or anger. However, the empirical evidence is less conclusive, and the link between power and emotional experiences appears to be more complex than assumed thus far.

Action. Ample evidence suggests that power facilitates action. Powerful individuals speak more (Anderson et al., 2001; Guinote et al., 2002), interrupt more (DePaulo & Friedman, 1998), flirt more (Gonzaga, Keltner, Londahl, & Smith, 2001), eat more (Ward & Keltner, 1998), and they show a general propensity to act (Galinsky et al., 2003; Magee, Galinsky, & Gruenfeld, 2007; Guinote, 2007b), even if this involves taking risks (Anderson & Galinsky, 2006). These action facilitating effects are generally conceived as a signature of the behavioural approach system (BAS; see Carver & White, 1994; Gray, 1991), which power is thought to activate (e.g., Galinsky et al., 2003; Keltner et al., 2003; Smith & Bargh, 2008). According to this view, power should predominantly facilitate action that is directed at attaining rewards (Keltner et al., 2003; see also Brendl, Higgins, & Lemm, 1995). This is consistent with research showing that powerful individuals are faster during goal striving and initiate more readily goal-directed action (Guinote, 2007b). Some authors have also argued for a more general association between power and action that results from powerful individuals' greater focus on singular sources of action control (see Guinote, 2007a; Guinote, 2007c).

An intriguing finding in the power literature is the greater variability that can be observed in members of powerful (Brauer, 2001; Guinote et al., 2002) and high status groups (e.g., Lorenzi-Cioldi, 1998). This variability occurs in part because powerful individuals act objectively in more diverse ways compared to powerless individuals (Guinote et al., 2002). To demonstrate this phenomenon, Guinote and her colleagues assigned participants randomly to powerful and powerless groups, and videotaped them while working on different tasks. Subsequently, observers, who were unaware of the power relations between the groups, rated each group member along several personality traits. Observers rated the members of powerful groups as more variable from one another than the members of powerless groups. Therefore, power increased *inter*personal behavioral variability.

Power can also promote greater *intra*personal variability. For example, Guinote (2008b) assigned participants to the role of a judge or the role of a worker, and then asked them to plan a typical day in the week or during the weekend. Participants in the role of a judge anticipated more leisure activities during the weekend and more routine, work-related activities during the weekday. In contrast, workers demonstrated less clear priorities. These effects were replicated in a variety of contexts (Guinote, 2008b). These studies suggest that the greater variability observed in powerful individuals derives, in part, from a greater responsiveness to situational affordances.

Cognition. Most of the research on power and information processing has focused on social perception, where it is assumed that power fosters the use of heuristics and less complex social perception (e.g., Fiske, 1993; Keltner et al., 2003), while lack of control motivates individuals to engage in interpretative reasoning (e.g.,

Guinote, 2001; Guinote, Brown, & Fiske, 2006; Pittman & D'Agostino, 1985). There is, however, increasing evidence to suggest that these effects of power extend beyond the processing of social stimuli. For instance, in a study on U.S. Supreme Court justices the judgments of powerful justices were more single-minded and their argumentations were less complex than the ones written by members of less powerful factions (Gruenfeld, 1995; Gruenfeld & Preston, 2000). Similar results were obtained for public statements of powerful and powerless groups (Gruenfeld, Thomas-Hunt, & Kim, 1998). These findings are consistent with studies that show decision makers engage in more complex reasoning and rely less on single evaluative dimensions when individuals are held accountable for their decisions (see Tetlock, 1992; Lerner & Tetlock, 1999).[3]

There is reason to assume that processing focus, rather than lack of effort, underlies these effects of power. Using a minimal intergroup procedure Guinote and colleagues (2006) provided participants with information about dominant and subordinate group targets with whom participants expected to interact. Compared to dominant group members, subordinate group members displayed a more dispersed and less focused processing orientation. In contrast, members of the dominant group were more focused and did not engage in attribution processes beyond the face value of the actual information presented to them. However, processing effort did not vary as a function of group membership. Other studies have even found that power

[3] Research on accountability has often examined natural groups such as political parties (e.g., ruling party vs. opposition, see Tetlock, 1992). Accountability implies that the group that took decisions had to provide a satisfactory justification for their actions to avoid negative consequences (Lerner & Tetlock, 1999). This illustrates how in a natural context power can be associated with greater responsibilities and threat. Individuals who are powerful but accountable for their actions may, therefore, experience a low sense of control and consequently behave, think, and feel similar to individuals in low power roles (Anderson & Berdahl, 2002; Bugental & Lewis, 1999).

increased processing effort (Chen et al., 2004; Ebenbach & Keltner, 1998; see also Smith & Trope, 2006).

Overall, power appears to induce a more singular processing orientation whereby cognition is focused on the primary aspects in the situation. In contrast, lack of power results in a more circumspect processing orientation whereby primary and secondary aspects are integrated into a judgment (see also Woike, 1994). As Chapter 2.4. will argue, it is this very processing orientation of powerful individuals that should increase the tendency to rely on experiences as a singular source of information in judgments and decision making.

Attention. Research on power and attention has been largely oriented towards studying the *content* of individuals' attentional focus. For instance, in social perception powerful individuals attend more to stereotype consistent information and tend to ignore stereotype inconsistent information (e.g., Goodwin et al., 2000). Extending this, it has been shown that powerful individuals pay particular attention to information that is relevant to their current goals (Guinote, 2007b; Overbeck & Park, 2006).

However, power not only affects what type of information individuals attend to, but also the processes that underlie attention. In a recent series of studies Guinote (2007c) found that power fosters the ability to attend to information selectively. In these studies, powerful individuals paid more attention to the most central features and inhibited less accessible peripheral information, whereas powerless individuals attended indiscriminately to primary and secondary aspects. For example, in one study participants primed with power and powerlessness performed the framed-line test (Kitayama, Duffy, Kawamura, & Larsen, 2003), which requires participants to re-

draw a line into a blank square. The task assesses how sensitive individuals are to an object and its context. In line with the predictions, participants primed with power paid less attention to the context (here: the frame) when the task required them to focus on the central aspect (here: the length of a line). Importantly, if required by the task powerful and powerless participants were equally able to attend to peripheral information. That is, the two groups did not differ in their ability to re-produce a line in relation to its context (the frame, see Guinote, 2007c, Study 1). These findings lend support to the notion that power not only induces selective attention, but also greater attentional flexibility.

These findings were complemented by Wilkinson, Reese, and Guinote (2008) who examined the effects of power on visual search behaviour. Wilkinson and colleagues observed that power primed individuals were better able to identify a predefined target in the visual field compared to participants primed with powerlessness. These effects were particularly evident in difficult tasks that require top-down control of attention, and vanished when the task did not invoke focal attention. Thus, it appears the effects of power on attention are mediated through executive control functions (see also Smith, Jostmann, Galinsky, & van Dijk, in press).

A recent study by Weick (2007) probed the boundaries of the effects of power on visual attention. Participants primed with power or powerlessness performed a visual search task that required identification of a target stimulus (a circle) in a series of distractors (squares). In half of the trials target and distractors appeared in the same colour (green), whereas in half of the trials one of the distractors appeared in a salient colour (red). The presence of a salient distractor captures attention in an automatic, bottom-up fashion (see Bacon & Egeth, 1994; Theeuwes, 2004). The

author found that in the absence of a salient distractor power primed participants were faster to identify a target singleton in the visual field. These performance gains disappeared, however, when attention was captured in an automatic, bottom-up fashion by the presence of a salient distractor in the visual field. These findings lend support to the notion that the effects of power derive from higher order attentional control functions.

In combination, studies on power and attention show that the default processing orientation of powerful individuals is a greater attentional focus on the primary aspects in the situation. Yet, power also promotes flexibility and enables adjustment of focal attention to the demands of the situation (see Guinote, 2007c). The present research suggests that these effects of power on basic cognition promote greater reliance on subjective experiences. Before elaborating more on the theoretical rationale underlying this hypothesis, the next section examines the main theoretical perspectives that have been offered as accounts for the abovementioned effects of power on human action and cognition.[4]

2.2.4. Theoretical Accounts for the Effects of Power

The Power as Control Theory

Susan Fiske (1993) advanced the Power as Control (PAC) model to account for the effects of power on social judgements. The model builds on theories of impression formation (e.g., Fiske & Neuberg, 1990). It posits that power leads to a

[4] These theories are situated at the intraindiviual and the interpersonal level of analyses. Other theories have been put forward to account for the effects of power at an intergroup level (Three Process Theory of Power, Turner, 2005; Identity Model of Power, Simon & Oakes, 2006) and at an ideological level of analysis (Social Dominance Theory, Sidanius & Pratto, 1999). Because the present work is situated at the intraindividual level, these theories are not discussed any further.

more stereotypical perception of others because powerful individuals are less dependent and therefore less motivated than their powerless counterparts to attend to others. Moreover, by virtue of their position in the hierarchy powerful individuals tend to have less cognitive resources available to pay careful attention to others, which favours the use of stereotypes. The PAC model holds that stereotyping provides powerful individuals a means to justify the status quo. In this view, power motivates individuals to use stereotypes instrumentally to exert control over other individuals (Fiske, 1993; see also Jost & Banaji, 1994).

The PAC model has received considerable support by Fiske and colleagues who showed that power increases attention to stereotypic information and reduces attention to stereotype-inconsistent information – a process that occurs with and without intention (stereotyping by *default* and by *design*, see Goodwin et al., 2000). Yet, the link between power and stereotyping is not universal. Indeed, if required powerful individuals are even better able than powerless individuals to focus on individuating information of others (Overbeck & Park, 2001, 2006). Similarly, if motivated to form an accurate impression of others, power has been shown to increase the desire for additional information, in particular on dimensions that defy easy judgments (Chen et al., 2004).

To summarize, the PAC model has proved successful in predicting the effects of power on social judgments. However, it has also been shown that the predictions of the PAC model do not hold when the current goals favour individuation and powerful individuals are motivated to form an accurate impression of others. Designed to explain the effects of power on stereotyping, the PAC model does not make any explicit predictions outside the realm of social perception. Subsequent theories of power address this limitation.

The Approach/Inhibition Theory of Power

Keltner and colleagues (2003) recently advocated an approach/inhibition (A/I) theory of power. This theory has dominated most of the subsequent social cognitive research on power. It builds on Gray's (1982, 1987, 1991) work that posits a distinct neurological behavioural approach system (BAS) and a behavioural inhibition system (BIS), as well as on Higgin's concept of regulatory focus (promotion and prevention; see Higgins, 1997, 1999). Keltner and colleagues argued that power activates the behavioural approach system, which directs individuals towards seeking rewards and heightens sensitivity to positive outcomes. In contrast, lack of power is said to trigger avoidance-related tendencies and increased sensitivity to threats and negative outcomes.

According to the A/I theory, power fosters approach-related tendencies because powerful individuals live in reward-rich environments with little constraints on their behaviour. Conversely, inhibition-related tendencies of powerless individuals are thought to arise from restrictions in access to resources and from constraints imposed by other individuals. Keltner and colleagues suggested that the differential activation of the approach and the avoidance system underlies differences in cognition, attention, affective experience, and in the behaviour of powerful and powerless individuals.

In a narrative review, Keltner and colleagues (2003) synthesized the existing literature in support of their theoretical model. Subsequent empirical tests of the theory yielded results that were mostly consistent with the assumption that elevated power fosters approach-related tendencies (e.g, positive affect: Berdahl & Martorana, 2006; attention to rewards: Anderson & Berdahl, 2002; and action facilitation: Galinsky et al., 2003; Guinote, 2007b; Smith & Bargh, 2008). However, several

studies failed to find support for the assumption of a relationship between lack of power and inhibition (Berdahl & Martorana, 2006; Smith & Bargh, 2008), suggesting that there may be asymmetric effects of power on approach and inhibition (see Moskowitz, 2004).

The lack of empirical support for the inhibition hypothesis could be attributed to a neglect to distinguish between differences in people's deficit of control experiences. Research shows that individuals who lack control actively engage in more information seeking (e.g., Pittman & D'Agostino, 1985) and efforts to restore control (e.g., Brehm, 1966, 1993). Attempts to restore control can instigate approach-related tendencies, such as displays of anger, hostility, and aggression (e.g., Worchel, Arnold, & Harrison, 1978). It is only when attempts to gain control fail that individuals reach a state of impairment characterized by anxiety, passivity, and depression (Seligman, 1975). Thus, one could assume that lack of power elicits very different response patterns depending on the context and the amount of the lack of control experiences. The approach/inhibition model does not consider these distinctions. Because empirical work did not examine extreme states of powerlessness (e.g., passive acceptance, see Seligman, 1975), this could explain the lack of support for the inhibition hypothesis.

Notably, although consistent with the view that power activates the behavioural approach system, the empirical findings in this domain are nevertheless open to alternative explanations. For instance, the greater action-orientation observed in powerful individuals (see Galinsky et al., 2003) could be mediated by mechanisms other than the activation of the behavioural approach system (e.g., selective attention, see Guinote, 2007c). Taken together, the current state of research calls for neurological studies to test the core tenets of the A/I theory.

In summary, the A/I theory is the first comprehensive model to account for the effects of power beyond social perception. While the hypothesis that power activates the behavioural approach system has received some empirical support, there is less evidence to suggest that lack of power triggers inhibition tendencies. The approach/inhibition theory of power focuses on the content and the direction of individuals' judgments and behaviour (e.g., approaching rewards). It places little emphasis on the processes that underlie action and cognition, and how these processes are affected by power. The Situated Focus Theory of Power (Guinote, 2007a) focuses on these aspects.

The Situated Focus Theory of Power

Building upon the idea that cognition is situated and unfolds on a moment-to-moment basis (Barsalou, 1999; Prinz, 1997; Smith & Semin, 2004), Guinote (2007a) suggested that power fosters attunement to the situation, making individuals respond more in line with the primary factors that guide cognition in a given moment. These factors include goals, environmental affordances, chronically accessible constructs, expectancies, as well as subjective experiences. The theory posits that powerful individuals will respond more in line with the factors that dominate information processing in a given situation. For instance, during goal pursuit the Situated Focus Theory of Power (SFTP) holds that powerful individuals will respond more unequivocally to information that is goal-relevant and ignore information that is goal-irrelevant, whereas powerless individuals will show less clear priorities in their processing orientation. Similarly, when cognition is guided by expectations, powerful individuals will process information more in line with their expectations than powerless individuals (see Guinote, Domingos, & Weick, 2008).

According to the SFTP these effects of power derive from the greater selectivity and flexibility in information processing that result from the experience of control. Indeed, several studies have shown that power affects basic cognition in a way that increases processing focus and flexibility both at perceptual (attentional focus) and conceptual levels (focal reasoning; see Guinote et al., 2006; Guinote, 2007c; Smith et al., in press; Wilkinson et al., 2008). The SFTP is mainly concerned with the processes that underlie cognition and behaviour. It evolved as an attempt to account for the greater variability observed in powerful as compared to powerless individuals' judgments and behaviour (see Guinote et al., 2002).

A strength of the theory is its ability to explain a variety of seemingly contradictory findings in the literature. Unlike other theories, the SFTP can explain why power in some occasions increases, and in others reduces stereotypic perceptions of other individual or groups (e.g., Fiske, 1993; Overbeck & Park, 2001), and why powerful individuals act sometimes in selfish and discriminatory ways, and sometimes they are more socially oriented and contribute more to common goods (see Chen et al., 2001; Galinsky et al., 2003). Additionally, the SFTP is unique, because it considers the role of situational cues. This is illustrated in a study by Guinote and Weick (2008), which manipulated power through an imagined role-play scenario and then presented participants with an ambiguous target description. Participants were pre-selected based on whether they possessed chronically accessible traits that were applicable to the target description (*rude* or *honest*). Prior to the presentation of the target description, participants completed a priming task that either included neutral words, or words that were relevant to the target description. The target-relevant primes were always in opposition to participants' chronically accessible traits (i.e.

rude-chronics were primed with honesty; honest-chronics were primed with rudeness).

Consistent with the predictions of the SFTP, the results showed that the social perception of powerful individuals was guided by the concepts that were activated at the time of judgment. In the absence of situational cues powerful participants perceived the target more unambiguously in line with their chronically accessible traits compared to their powerless counterparts. In the presence of a situational cue, however, powerful individuals shifted and responded more in line with the concept that was temporarily activated at the time of judgment. Conversely, the perception of powerless participants was more circumspect and did not vary significantly across conditions. These results illustrate how power makes individuals more attuned to primary sources of information that are in the focus of attention. In contrast, powerless individuals tend to go beyond this information and tend to draw on additional sources of information.

As will be elaborated in more detail in Chapter 2.4, the current theories on power (PAC model, A/I theory, and SFTP) are consistent with the hypothesis that power increases, and powerlessness decreases reliance on subjective experiences. The subsequent section summarizes the main points of Chapter 2.2. The discussion then turns to subjective experiences and their role in the judgmental processes.

2.2.5. Summary and Outlook

The previous sections have defined power as the ability to control outcomes and resources. It has been noted that the human striving for power can be best understood as a striving for personal agency and independence from others. It was emphasized that from a psychological point of view having power equates with the

experience of control. Power was then differentiated from related concepts such as status, leadership, and social dominance orientation. Several factors can assist individuals in attaining powerful roles. Personality differences such as extraversion and dominance, as well as differences in physical appearance such as height and attractiveness are antecedents of power. Finally, the social context and associated schemas are also determinants of who attains power and who does not.

Power has a number of effects on the individual. Across a variety of domains, such as behaviour, cognition, and attention, power appears to induce a more simplified and focused processing orientation. This effect can be observed at lower levels of cognition such as visual attention, and at higher levels of information processing such as decision making. As later chapters will argue, this processing orientation should favour the use of subjective experiences as a source of information to guide judgments and behaviour. In contrast, the more circumspect processing orientation associated with a lack of power should favour the use of declarative sources of information in judgments and decision making.

Chapter 2.2.4. discussed the three main theoretical accounts for the effects of power: the PAC model, the A/I theory, and the SFTP. The PAC model was specifically designed to account for the effects of power on social perception. It posits that power bolsters categorical perceptions of others. The A/I theory focuses on the direction and the content of powerful and powerless individuals' cognition, actions, and feelings, which are thought to be oriented towards rewards or threats. In a strict sense, the A/I theory does not make predictions for behaviour that is not motivated by reward-attainment or threat-avoidance. In contrast, SFTP focuses on attentional, cognitive, and behavioural processes that are affected by power. The SFTP predicts

that power alters processes of response selection and prioritization, leading to greater situational variability.

The subsequent Chapter 2.3. elaborates on the role of subjective experiences as a source of information in the construction of judgments. This will be followed by a discussion of the ways power alters reliance on subjective experiences.

2.3. Subjective Experiences

The study of subjective experiences can be traced back to the origins of psychology in the 19th century where experiences were a central focus of structural psychologists such as Wundt (1897) and Külpe (1973). At the beginning of the 20th century, subjective experiences were the focus of phenomenologists such as Husserl (1931), Heidegger (1982), Sartre (1956), and Merleau-Ponty (1996), who studied the structures of consciousness as experienced from the first-person point of view (Smith, 2003). In modern psychology the study of subjective experiences has long been thwarted by the behaviourist tradition and - until the end of the 20th century - by the prevalence of the computer-metaphor as a meta-theoretical paradigm for the understanding of the human mind (Schwarz & Clore, 1996). Along with a shift towards a more dynamic and situated perspective of human cognition (e.g., Barsalou, 1999; Semin & Smith, 2002), the focus has moved to subjective experiences as a topic of scientific enquiry (e.g., Schwarz, 2006). This is particularly true in Social Psychology, where human cognition is no longer conceived in isolation, but in dynamic interaction with the environment (e.g., Smith & Semin, 2004). This paradigm shift has placed subjective experiences at the centre of the research agenda (see Wegner & Gilbert, 2000). The next section first defines subjective experiences, and then discusses the ways subjective experiences contribute to human action and judgments.

2.3.1 Definition

In lay terms subjective experiences often refer to affective feelings. Affect encompasses emotions as more discrete experiences with a concrete referent, and mood as a more diffuse feeling state (e.g., Averill, 1980; Clore & Schwarz, 1996;

Morris, 1989). Yet, subjective experiences also encompass bodily sensations (e.g., hunger, physical effort; see Loewenstein, 1996), and feelings that arise from mental thought processes (e.g., feeling of knowing, familiarity, tip of the tongue phenomenon; see Clore, 1992; Laird & Bresler, 1990; Schwarz & Clore, 1996).

Because not all subjective experiences involve changes to the viscera (e.g., fringe experiences, see Mangan, 1993), one could argue that a defining feature of subjective experiences is that they are grounded in perception (Pennebaker, Gonder-Frederick, Cox, & Hoover, 1985; Strack, 1992). Recent advances in cognitive sciences, however, suggest that declarative knowledge also engages neurological pathways associated with perception (e.g., Barsalou, 1999; Goldstone 1994; Johnson, 1987; Miller & Johnson-Laird; 1976; Prinz & Barsalou, 2000). It follows that the mere involvement of perceptual systems may not be sufficient to distinguish subjective experiences from declarative thought contents. Rather, subjective experiences *arise* from the processing of sensory information. This occurs either through interoception (i.e. perception of internal states or processes), or through exteroception (i.e. perception of external stimuli). Subjective experiences refer to the phenomenological correlate of these perceptual processes (see also Wurtz, Reber, & Zimmerman, 2007). Subjective experiences are consciously perceived, but the representations underlying experiences may remain unconscious (see Price & Norman, 2008; Winkielman & Berridge, 2004). As will be discussed next, subjective experiences importantly contribute to human judgments and action.[5]

[5] The subsequent discussion is not exhaustive (see Peters, 2006; Pfister & Boehm, 2007; Schwarz & Clore, 1996, for more detailed discussions) and focuses on the informational function of subjective experiences. Subjective experiences have also important motivational and regulatory functions. They can alter individuals' processing orientation (e.g., Bless & Schwarz, 1999), induce action tendencies and goal pursuit (Frijda, 1986; Zeelenberg & Pieters, 2006), and provide a feedback system to monitor goal attainment (see Martin & Tesser, 1995). Moreover, subjective experiences are also thought to afford conscious thinking

2.3.2. Declarative and Experiential Information

Effective interaction with the environment requires individuals to constantly interpret incoming information, to form preferences, and to decide on courses of action. To account for these processes, traditional models of information processing focused on the role of declarative information that pertains to features of a judgmental target (e.g., Wyer & Srull, 1989). According to these models, human judgment can be predicted based on the declarative information that comes to mind at the time of judgment (see Higgins, 1996, for a review). More recently, however, it has become clear that individuals can also draw on subjective experiences that enter the judgmental process through internal feedback mechanisms (e.g., Mazzoni & Nelson, 1998; Strack, 1992). A full account of human judgments, therefore, requires a consideration of both declarative and experiential sources of information (e.g., Bless & Forgas, 2000; Clore, Schwarz, & Conway, 1994; Forgas, 1995; Schwarz & Clore, 1996; Schwarz, 1998).

To explain the role of subjective experiences in the judgmental process, earlier approaches focused on the role of experience-congruent memory-retrieval (e.g., Isen, Shalker, Clark, & Karp, 1978). In this view, individuals are more likely to recall declarative information that is congruent with their current feelings. For instance, Bower (1981; Bower & Cohen, 1982) conceptualized affective feelings as nodes in an associative network model (Anderson & Bower, 1973) that activate through spreading activation other (declarative) contents stored in the network.

More recently, research confirmed that subjective experiences can also have a direct informational function, independent from biased information retrieval. For example, Schwarz and Clore (1983, 2003) observed a correspondence between

---

(e.g., Damasio, 2000) and higher order reasoning processes (e.g., Lakoff & Johnson, 1999). Some of these aspects will be taken up in Chapter 2.3.3.

individuals' affective experiences and their general life satisfaction. This association disappeared when participants were induced to attribute their current feelings to an irrelevant source (e.g., weather).[6] Supposedly this happened because attributing one's current feelings to an extraneous source (e.g., the current weather) renders them irrelevant for the judgment of one's life satisfaction. Because this misattribution effect is difficult to reconcile with spreading activation models, these findings support the idea that subjective experiences can serve as a source of information in their own right (see also Schwarz, 1990).[7]

Perhaps the most compelling evidence for the interplay between experiential and declarative information derives from research into the ease of retrieval. The ease of retrieval denotes the experiences of ease or difficulty associated with the retrieval of mental contents (see Higgins, 1996; Schwarz et al., 1991). When retrieving information about an object is easy individuals tend to perceive the target object in line with the implications of their thought contents. However, when retrieving information is difficult individuals interpret this experience as a limitation or restriction, and their judgments tend to contradict the content of their thoughts. For example, a person may conclude from the difficulty in thinking of reasons to accept an offer for a new post that it is better to stay in the current job. Ease of retrieval thus provides experiential information that qualifies and may even reverse the implications of declarative thought contents (e.g., in spite of having good reasons to aim for the

[6] This effect was only observed in a negative affective state. The authors explained the differential effects of their misattribution manipulation through more general effects of mood on information search.

[7] While in the study by Schwarz and Clore *incidental* experiences produced a spill-over effect on people's judgments, more recently the same principle has been confirmed for experiences that are elicited by the judgmental target itself (see Mellers, 2000; Slovic, Finucane, Peters, & MacGregor, 2002).

new post the person may conclude 'If it's so difficult to think of reasons to accept the new post it may not be worth accepting it'; see Schwarz, 1998).

Tversky and Kahneman (1973) were the first to point out the role of ease-of-retrieval experiences in the judgmental domain. The authors proposed that individuals derive frequency judgments from the experienced ease or difficulty associated with the retrieval of exemplars. More recently, Schwarz and colleagues (1991) created a research design that allows a separation of the effects of experienced ease and declarative thought contents. The authors asked participants to list either a few (an easy task) or many (a difficult task) past instances indicative of assertiveness. Participants subsequently rated themselves as more assertive when they had experienced ease rather than difficulty in the retrieval process. Since judgments based on the mere declarative content are likely to result in the opposite pattern, with higher ratings of assertiveness after retrieving many rather than few behavioural examples, these results suggest that participants used the experienced ease as a source of information to guide their judgments about their own assertiveness.

The ease-of-retrieval paradigm has the unique feature of being able to elicit experiential information that is at odds with declarative thought contents. This way subsequent research confirmed that experiential information contributes to a wide range of judgmental processes, such as social perception (Aarts & Dijksterhuis, 1999; Gawronski & Bodenhausen, 2005; Raghubir & Menon, 2005), attitudes (Menon & Raghubir, 2003; Wänke & Bless, 2000; Wänke, Bohner & Jurkowitsch, 1997), or autobiographic knowledge (Winkielman & Schwarz, 2001; see also Winkielman, Schwarz, & Belli, 1998).

Taken together, subjective experiences can function as a source of information in their own right, similar to declarative information (see also Clore, Gasper, &

Garvin, 2001; Mellers, 2000; Winkielman, Schwarz, Fazendeiro, & Reber, 2003). The next section compares the processes that underlie the construction of judgments based on subjective experiences and declarative sources of information.

2.3.3. Principles of Experience-based and Content-based Routes to Judgments

In many circumstances individuals can follow both an experiential and a content-based route to judgments (e.g., Eppstein, 1994; Kahneman, 2003; Kahneman & Frederick, 2002; Strack, 1992). For instance, the decision to eat can either be based on one's knowledge of the time elapsed since the last meal, or based on one's hunger experiences. Likewise, the decision to get engaged in a romantic relationship can be based on experiences of affection, or on utilitarian beliefs. Whilst the decision outcome can be the same (e.g., Schwarz & Clore, 1996; Strack, 1992), the two routes are governed by somewhat different principles.

Experiential information can derive from associative processes, whereby experiences provide the perceiver with an assessment of a target object or features of a target (e.g., Bechara, Damasio, Tranel, & Damasio, 1997; see also Shah & Oppenheimer, 2007). Subjective experiences become associated with a target following the principle of temporal contiguity (see Sloman, 1996; Higgins, 1998). Accordingly, experiences that are elicited by a target object, as well as experiences that derive from extraneous sources can become associated with a judgmental target (see Winkielman et al., 2003). Experiential information that originates from associative processes typically falls on single evaluative dimension such as good/bad, or easy/difficult. However, also more complex associations can be acquired through learning experiences (e.g., feelings of 'ease' can become associated with 'truth'; see

Unkelbach, 2006, 2007; see also see Kruglanski, Erb, Pierro, Mannetti, & Chun, 2006).

Notably, subjective experiences not only affect judgmental outcomes through mere associations. Subjective experiences can also provide input to propositional thought (i.e. rules and logic). Lay-beliefs typically guide the inferences that are drawn from one's subjective experiences (see Schwarz, 2004). Because any kind of belief can be brought to bear on one's experiences, there is almost no limitation to the informational function of experiences. For instance, difficulties in bringing up childhood memories can be seen as an indicator for a pleasant, or an unpleasant childhood depending on the beliefs people hold about memory functions (Winkielman & Schwarz, 2001). Although inferences can be learned and become automatic (e.g., Unkelbach, 2007), they are nevertheless often subject to conscious thought and can be altered if required. For instance, there is ample evidence that experiences that are attributed to an extraneous source cease to exert an influence on a judgmental target (Schwarz, 2004; Schwarz & Clore, 1996).[8]

Taken together, subjective experiences may operate through both associative as well as propositional processes, just as declarative thought contents (see Gawronski & Bodenhausen, 2006; Kahneman & Frederick, 2002; Strack & Deutsch, 2004). Nevertheless, experience-based and content-based routes to judgments are not equivalent. There are qualitative differences between subjective experiences and declarative sources of information. Experiences are often considered as more immediate and directly accessible to be brought to bear on a judgmental target (Strack, 1992; see also Schwarz & Clore, 1996). Unlike declarative thought contents, subjective experiences focus people's attention on particular aspects of an event or an

[8] Some experiences may only operate automatically and consequently be immune to misattribution effects (see Winkielman, Zajonc, & Schwarz, 1997).

object that are relevant to the organism (see Peters, 2006; Pfister & Boehm, 2008; Ortony, Clore, & Collins, 1998). Because experiences act as monitoring systems (e.g., Clore, 1994) they also have the ability to disrupt other processes and goals (e.g., Easterbrook, 1959; Simon, 1967; Zeelenberg, Nelissen, Breugelmans, & Pieters, 2008). Moreover, subjective experiences can simplify judgmental processes because they carry summary-information and because they can provide a common denominator for complex comparative judgments (e.g., comparing a new piece of clothes with a weekend holiday; Cabanac, 1992; see also Strack, 1992). Together, these features contribute to the primacy of experience-based routes to judgments, which in many circumstances constitutes the default process (e.g., Epstein, 1994; Kahneman, 2003; Pam, Cohen, Pracejus, & Hughes, 2001; Menon & Raghubir, 2003; Whittlesea & Williams, 1998; see also Albarracín & Wyer, 2001; LeDoux, 1996).[9]

Despite of the prevalence of experience-based routes to judgments, there is also some flexibility in people's use of subjective experiences and declarative information. The relative use of these two sources of information tends to vary depending on a number of factors, such as a person's processing motivation and capacity (Aarts & Dijksterhuis, 1999; Greifeneder & Bless, 2007; Menon & Raghubir, 2003), or aspects of the judgemental target (e.g., Rothman & Hardin, 1997). Moreover, experiential information can also be discounted, in particular when experiences are deemed non-diagnostic and hence not informative for a judgment at hand (e.g., Schwarz & Clore, 1996). As will be elaborated in Chapter 2.4., the present

[9] The present work uses the term *primacy* to denote differences in the activation level of constructs without invoking differences in the speed of activation. Contrary to common beliefs, experiential information is not always quicker to access than declarative thought contents (see Giner-Sorolla, 2004, Schmidt-Atzert, 1988). Some experiences may also only arise through more complex reasoning and situational appraisals (Ortony, Clore, & Collins, 1988; Smith & Lazarus, 1993; see also Berkowitz, 1993). The present thesis argues that the primacy of experiences derives from factors other than speed of activation, such as the ability to attract attention and to inhibit other processes.

thesis argues that social power is another determinant of the extent to which individuals resort to experiential or to declarative information to guide their judgments and decisions.

2.3.4. Summary and Outlook

The previous sections examined the role of subjective experiences and declarative thought contents in judgments and decision processes. Subjective experiences were defined as phenomenological correlates of perceptual processes. Chapter 2.3.1. placed an emphasis on the informational function of subjective experiences. It was noted that subjective experiences affect judgments and decisions not only through the activation of declarative knowledge, but also through serving as a source of information in their own right. Similar judgmental processes can underlie experience-based and content-based routes to judgments, as both operate through associative and propositional systems. However, unlike declarative thought contents, experiences are more immediate and come with a 'guarantee' of relevance. Moreover, in contrast to declarative information, subjective experiences have the ability to focus attention on experience-relevant information, while at the same time inhibiting other processing goals. Together, these features contribute to the primacy of experiences.

As Chapter 2.2. has highlighted, power induces a processing orientation that is focused more selectively on primary sources of information. Because subjective experiences provide such a primary source of information, power should increase reliance on subjective experiences. The next sections elaborates on this conjecture.

2.4. Power and Subjective Experiences

Previous research is consistent with the interpretation that individuals who experience certainty and control tend to draw on subjective experiences. In contrast, uncertainty and a lack of control foster a preference for content-based routes to judgments and decisions.[10] For instance, research on mood shows that individuals in a positive mood are inclined to rely on their feelings, whereas sad mood induces a processing style that increases reliance on declarative sources of information (see De Vries, Holland, & Witteman, 2008; Luce, Bettman, & Payne, 1997; Ruder & Bless, 2003). These effects of mood are thought to occur because positive mood signals a state of safety, whereas negative mood signals an uncertain and problematic situation (Schwarz, 1990; see also Bless et al., 1996). The interpretation of the effects of mood in terms of signalling certainty is consistent with the finding that anger also increases reliance on subjective experiences, while sadness and fear reduce the impact of experiences on judgments and decisions (Bodenhausen, Sheppard, & Kramer, 1994; Lerner & Gonzales, 2005). Whilst both negative mood and anger are negatively valenced, only anger links to appraisals of certainty (e.g., Lerner & Keltner, 2001; see also Tiedens, & Linton, 2001). The notion that certainty increases, and uncertainty decreases reliance on subjective experiences is also consistent with the finding that individuals tend to turn to declarative sources of information when they are held accountable for their decisions (e.g., Lerner & Gonzales, 2005; see also Bodenhausen, Kramer, & Süsser, 1994), and when their expertise is called into question (e.g., Biller, Bless, & Schwarz, 1992; Sanna & Schwarz, 2003).

[10] Certainty and control are similar, albeit distinct concepts. While certainty describes an individuals' sense of predictability, control refers to the extent to which individuals perceive themselves as agents and able to determine their outcomes (e.g., Lerner & Keltner, 2001).

Support for the role of control derives from studies on depression. Chronically depressed individuals are inclined to turn to declarative thought contents to inform their judgments (e.g., Greifender & Bless, 2008). These individuals are motivated to augment their sense of personal control through a more circumspect processing orientation (e.g., Weary et al., 1993). Declarative information also becomes the focus when individuals are processing personally threatening information that undermines their sense of control (see Rothman & Schwarz, 1998). Taken together, converging evidence suggests that the experience of certainty and control induces a processing orientation that favours an experiential route to judgments and decisions. Conversely, individuals who experience uncertainty and a lack of control tend to draw on declarative sources of information to guide their judgments and decisions.

Because being in power affords certainty and control, by induction power should increase reliance on subjective experiences. Powerful individuals control their own and other individuals' outcomes and are less dependant on external circumstances (e.g., Galinsky et al., 2003; Hollander, 1958; Lewin, 1941). Moreover, having access to resources and living in reward-rich environments gives powerful individuals a sense of predictability and more certainty in their outcomes (e.g., Keltner et al., 2003). The greater certainty and control allows powerful individuals to process information more selectively, focusing on primary sources of information (Guinote, 2007a, 2007c, in press) and ignoring additional perspectives (e.g., Galinsky et al., 2006; Mannix & Neale, 1993). Because, as discussed in the previous section, subjective experiences provide such a primary source of information, power should increase reliance on subjective experiences. Additionally, due to the prevalent western-cultural belief that people gain power because they earn it and because they have 'requisite skills or expertise' (Goodwin et al. 2000, p. 229), powerful individuals

can be more confident in their views and rely on default processes that underlie cognition and behaviour. This in turn frees processing resources and allows powerful individuals to display greater flexibility in their processing orientation (see also Guinote, 2007a). Because reliance on subjective experiences often constitutes the default process, elevated power should foster reliance on experiential information.

A different picture emerges for powerless individuals. Lack of power implies states of uncertainty and reduced predictability. Powerless individuals lack control and are dependent on their circumstances (e.g., Keltner et al., 2003). These individuals need to pay attention to multiple sources of information and interpret information beyond its face value to increase their predictability and control (see also Fiske & Dépret, 1996; Goodwin et al., 2000; Guinote et al., 2006; Keltner et al., 2003). For instance, studies on persuasion show that control-deprived individuals turn to the message content for additional information (Pittman, 1993; see also Guinote et al., 2006). Furthermore, by virtue of their more difficult circumstances, powerless individuals cannot show a great deal of trust in their beliefs and impressions to guide judgments and behaviour (e.g., Keltner et al., 2003). Consequently, they tend to engage in compensatory processing strategies and are less inclined to rely on default processes (Guinote, 2007a; Keltner et al., 2003). Taken together, the greater tendency of powerless individuals to engage in interpretive reasoning and to draw on multiple sources of information should reduce the impact of subjective experiences and strengthen a content-based processing orientation. One would, therefore, expect powerless individuals to rely more on activated declarative information.

The hypothesis that power increases, and powerlessness decreases reliance on experiential information is consistent with theoretical models of power. According to the Power as Control (PAC) model, power increases the use of heuristics and

automatic social cognition. Reliance on subjective experiences is often associated with automatic cognition and heuristic processing (e.g., Schwarz & Clore, 1996). Thus, if one extends the PAC model beyond social perception, the model would predict that power fosters experiential routes to judgments and decision making. Similar predictions arise from the perspective of the Approach/Inhibition theory (Keltner et al., 2003), which also posits that power promotes more automatic cognition. Yet, the A/I theory also holds that power increases, and lack of power decreases the correspondence between people's inner states and behaviours. Thus, from the perspective of the A/I theory one would expect that power increases reliance on experiences that are specifically associated with inner states and dispositions of the person.

The most direct prediction of an association between power and reliance on experiences derives from the Situated Focus Theory of Power (Guinote, 2007a). The theory explicitly states that power should increase reliance on subjective experiences. This is thought to be the case because power promotes a processing orientation that focuses more unequivocally on primary constructs activated in the situation. Conversely, because lack of power reduces selective attention and fosters a more circumspect processing orientation, powerless individuals are assumed to draw on additional sources of information to guide their judgments and decisions. In contrast to the A/I theory, the predictions of the SFTP are more general and apply equally to subjective experiences that derive from person constructs and from situational cues. Taken together, the main socio-cognitive theories of power are overall consistent with the hypothesis that elevated power increases reliance on subjective experiences, while lack of power promotes a focus on declarative thought contents.

Previous research provides some limited support for the claim that powerful individuals respond more in line with their feelings. For example, Guinote (2007d) found that powerful individuals were more prone than powerless individuals to magnify the expression of unwanted thoughts after having suppressed these thoughts. This increased rebound of unwanted thoughts after suppression was suggested to occur because powerful individuals, more than powerless individuals, used the experienced difficulties in suppressing unwanted thoughts as a source of information (see Förster & Liberman, 2001, 2004). The interpretation that power increases reliance on experiences is also consistent with a study by Hecht and LaFrance (1998), which observed a greater correspondence between feelings towards interaction partners and overt behaviour (smiling) for powerful as compared to powerless individuals. Similarly, Guinote (2008a) observed that power strengthens the correspondence between people's gustatory experiences and their eating behaviour.

Although these studies are suggestive, the role of subjective experiences remains largely unexplored. In particular, prior research did not separate experiential information from declarative thought contents. For example, power might have affected people's thoughts about their interaction partners (Hecht & LaFrance, 1998) or their food (Guinote, 2008a), and this might have contributed to the observed differences between powerful and powerless individuals. Previous studies are, therefore, not fully conclusive and the exact role of subjective experiences remains unclear.

Notably, most previous studies on power have completely neglected the role of subjective experiences for judgmental or behavioural outcomes. For instance, ease of processing stereotype-consistent information, rather than the content of this information per se, could have contributed to greater stereotyping in the social

perception of powerful as compared to powerless individuals (see Fiske, 1993; Fiske & Dépret, 1996). Through separating experience-based and content-based routes to judgments, the present thesis provides an important extension to previous research, testing the hypothesis that elevated power increases reliance on subjective experiences, whereas lack of power fosters a focus on declarative thought contents. Before turning to the empirical evidence, the next section outlines the main goals of the current work.

2.5. The Present Research

2.5.1. Power and Reliance on Subjective Experiences

The primary goal of the present research is to test the hypothesis that power increases reliance on experiences as a source of information to guide judgments and decisions. This proposal derives from the observation that power induces a processing orientation that is focused more selectively on primary sources of information. Because subjective experiences provide such a primary source of information (see Section 2.3.3.), power should increase reliance on subjective experiences. The hypothesis that power promotes experience-based judgments is also consistent with previous research, which suggests that individuals who are in a state of certainty and control tend to draw on subjective experiences, while uncertainty and lack of control fosters an orientation towards declarative sources of information.

To demonstrate that powerful individuals tend to rely on subjective experiences, the present work places an emphasis on the consequences of power for reliance on cognitive experiences. As noted earlier, cognitive experiences have played an important role in determining the informational function of subjective experiences. In particular, the ease-of-retrieval paradigm has allowed previous research to explore the contributions of declarative and experiential information to individuals' judgments in a variety of domains (e.g., Gawronski & Bodenhausen, 2005; Sanna & Schwarz, 2003; see also Schwarz, 1998, 2000). The present research follows the same strategy and places an emphasis on the consequences of power for reliance on the ease of retrieval, thereby separating the contributions of experiential and declarative information in powerful and powerless individuals' judgments.

Moreover, to examine whether power increases reliance on experiences as a source of information it is necessary to control for baseline differences in people's

experiences. Powerful and powerless individuals may differ in their affective experiences (e.g., Anderson & Berdahl, 2002; Keltner et al., 2003; Kemper, 1991; Tiedens et al., 2000). Consequently, in the domain of affective experiences, differences in judgmental outcomes could not only result from the differential use of subjective experiences, but also from differences in baseline experiences. In contrast, there is no a-priori reason to assume that power alters individuals' ease-of-retrieval experiences.[11] Taken together, focusing on the ease of retrieval is a viable approach to test the hypothesis that power increases reliance on experiences as a source of information.

2.5.2. Implications

A second goal of the present research is to examine implications of the effects of power on reliance on subjective experiences. The present work focuses on the implications for stability in the judgments of powerful and powerless individuals, and the consequences for the ways experiential and declarative information provide powerful and powerless individuals with a sense of certainty in their judgments.

Judgmental Stability. A corollary of the present research is that the judgments of powerful individuals are malleable and subject to the influence of momentary experiences. This contrasts with previous perspectives, which have emphasized the greater stability and idiosyncrasy that result from the experience of

[11] There may be a few exceptions to this. Paralleling the observation that mood facilitates the retrieval of mood-congruent information from memory (e.g., Fiedler, Nickel, Muehlfriedel, & Unkelbach, 2001), it is conceivable that power may alter the ease with which power-related concepts can be retrieved. For example, Bargh and colleagues (1995) observed that priming power facilitated the retrieval of sexual thoughts in men who were prone to sexually harass women. More generally, power may facilitate the retrieval of concepts or episodes that individuals associate with power. To control for any potential effects of power on information retrieval, the present research includes measures of powerful and powerless individuals' ease-of-retrieval experiences.

power (e.g., Anderson & Berdahl, 2002; Chen et al., 2001; Galinsky, Magee, Gruenfeld, Whitson, & Liljenquist, in press). However, greater reliance on subjective experiences does not necessarily preclude temporal stability in attitudes and judgments. When individuals make judgments based on subjective experiences these judgments are stored in memory, perhaps together with perceptual information (see Barsalou, 1999). Subsequent judgments can be based in part on these sources of information, thereby contributing to some temporal stability (see Judd & Brauer, 1995). The present research tests the hypothesis that reliance on subjective experiences can have long-term effects, thereby illustrating how momentary influences can transpire over time and promote some stability in the judgments of powerful individuals.

Judgmental Certainty. The present research also has implications for how powerful and powerless individuals derive a sense of certainty in their judgments and decisions. The present perspective suggests that power promotes reliance on subjective experiences because powerful individuals have greater predictability and control, and focusing on subjective experiences is sufficient to inform their judgments and decisions. In contrast, powerless individuals lack control and therefore turn to additional sources of information to increase their levels of certainty. It follows that powerful individuals derive a sense of certainty from relying on subjective experiences. In contrast, one would expect that powerless individuals need to resort to declarative sources of information in order to become confident in their judgments. The present work examines these corollaries, testing the prediction that experiential and declarative sources of information contribute differentially to powerful and powerless individuals' levels of certainty in their judgments.

2.5.3. Boundary Conditions

As noted earlier, individuals do not always draw on their experiences as a source of information. For example, people are more likely to rely on experiences in some contexts, whereas other situations favour the use of declarative information (e.g., Rothman & Hardin, 1997). Moreover, the influence of subjective experiences also depends on their informational value. Experiences tend to be disregarded if they are considered uninformative for the judgment at hand (see Schwarz, 1998; Schwarz & Clore, 1996). In particular, people tend to discount experiences if they become aware that these experiences derive from irrelevant sources (e.g., Fazendeiro, Winkielman, Luo, & Lorah, 2005; Schwarz et al., 1991; Winkielman, Schwarz, & Belli, 1998). Similarly, experiences that are unexpected are more informative and hence more influential in judgments than experiences that match people's expectations (e.g., Whittlesea & Williams, 1998; see also Hansen, Dechêne, & Wänke, 2008). Because power induces greater flexibility in people's information processing (see also Guinote, 2007a), it is justified to assume that powerful individuals are equally able as powerless individuals to resort to declarative information if required.

A final goal of the present research is to explore boundary conditions of the effects of power. To this end, the present work examines the role of the informational value of experiential and declarative information, and the role of different types of subjective experiences as determinants of the extent to which power increases reliance on subjective experiences.

CHAPTER 3: EMPIRICAL STUDIES

3.1. Overview

The present research tests the hypothesis that powerful individuals tend to rely on experiences as a source of information, whereas powerless individuals draw their judgments and decisions on declarative thought contents. Chapter 3.2. presents empirical evidence in support of this proposal. Study 1 examines the relationship between dominance, sense of power, and self-reported reliance on experiences in judgments and decision making. Studies 2 to 4 focus on the contributions of experiential and declarative information to powerful and powerless individuals' judgments and decisions using the ease-of-retrieval paradigm.

Chapter 3.3. addresses the implications of these findings for judgmental stability and certainty. Specifically, Study 5 employs a longitudinal design to test the prediction that reliance on subjective experiences can be conducive of stability in judgments and have long-term effects. Study 6 examines the implications for the ways powerful and powerless individuals derive a sense of confidence in their judgments. The study tests the prediction that powerful individuals derive a sense of certainty from relying on subjective experiences, whereas powerless individuals need to resort to declarative sources of information in order to be confident in their judgments and decisions.

Finally, Chapter 3.4. explores boundary conditions of the effects of power. Study 7 focuses on the informational value of subjective experiences. The study tests the prediction that the association between power and reliance on subjective experiences depends on the informational value of the experiences. Specifically, the study addresses the hypothesis that powerful and powerless individuals are equally inclined to resort to declarative information when subjective experiences are less

informative and judgments can be more readily made on the basis of declarative information. Studies 8 and 9 are designed to explore the role of different types of subjective experiences as boundary conditions for the effects of power. Specifically, the studies examine whether power increases reliance on experiences that derive from the processing of visual information. The studies point out that there are boundaries to the effects of power, indicating that power does not necessarily always increase reliance on subjective experiences.

Throughout the studies alternative explanations for the effects of power are addressed. In particular, the present research examines whether the effects of power on reliance on experiences can be explained by other factors such as mood, quality of the retrieved information, number of counter-attitudinal thoughts, or differences in the subjective experience itself. Finally, through examining the extent to which experiential and declarative information provide powerful and powerless individuals with a sense of certainty in their judgments, the present research also explores the underlying theoretical rationale, which posits that the effects of power derive from idiosyncratic control needs of powerful and powerless individuals.

3. 2. Power and Reliance on Subjective Experiences

The purpose of the present section is to establish the basic relationship between power and reliance on subjective experiences. Study 1 examines the extent to which powerful and powerless individuals assert relying on their experiences and feelings in everyday life decisions. Studies 2 to 4 focus on the consequences of power for reliance on the ease of retrieval. These studies experimentally test the prediction that powerful individuals tend to draw on experiential information, whereas powerless individuals tend to resort to declarative sources of information to inform their judgements and decisions.

Contributing to the generalizability of the claim that power increases reliance on subjective experiences, the present section examines a variety of domains (attitude judgments, self-related judgments, social perception), and uses different operationalizations of power (trait dominance, priming, and professional roles).

3.2.1. Study 1: Self-Reported Preference for Experiences

The present study was designed to provide initial evidence for the hypothesis that power promotes reliance on feelings and experiences in judgments and decisions. The study was correlational and examined power from an individual difference perspective. Following previous research (Anderson & Berdahl, 2002; Goodwin et al., 1998; Operario & Fiske, 2001), the study measured trait dominance as a proxy for power. As pointed out in the previous chapter, dominant individuals tend to behave in assertive and overpowering ways, which leads them to attain powerful positions (e.g., Buss & Craik, 1980; Gough, 1987; Lord et al., 1986; Megargee, 1969; Weisfeld & Linkey, 1985).

To investigate reliance on experiences, the study employed a self-report measure of people's tendency to resort to experiences to inform judgments and decision making. Specifically, participants completed the Preference for Intuition (PID-I) scale devised by Betsch (2004). The scale measures the extent to which people assert relying on their experiences in everyday judgments and decisions.[12] The study hypothesized a positive association between trait dominance and people's preference for experience-based judgments and decisions.

The study also included a measure of sense of power (Anderson, John, & Keltner, 2005; cited in Anderson & Galinsky, 2006) and mood (Forgas, 1994) to see if the effects of dominance could be explained by any of these variables. Sense of power refers to people's generalized representations of their everyday power relationships with others (Anderson & Galinsky, 2006). Because the effects of dominance are

---

[12] In contrast to other measures (REI: Epstein, Pacini, Denes-Raj & Heier, 1996; Pacini & Epstein, 1999; MBTI: Myers & McCaulley), the PID-I focuses specifically on the informational *content* that forms the basis of individuals' judgments. It is therefore most suitable for the present research question. The PID-I intends to measures primarily reliance on affective experiences (see Betsch, 2004), but most of the items also apply to other classes of experiences (e.g., cognitive experiences).

assumed to result from the greater power that dominant individuals tend to have in their everyday lives (see also Chapter 2.2.2.), the present study hypothesized that sense of power mediates the association between dominance and reliance on experiences.

Method

Participants

Eighty-three students (58 females and 25 males) participated on a voluntary basis and in exchange for a lottery ticket. Data were gathered online and participants were University of Kent students, aged 18 and above.

Procedure and Materials

Participants were invited to participate in a study focusing on individual differences and decision making. The study was posted on University online forums and invitations were distributed through Departmental Email lists. Participants were informed that the study investigated people's preferences for different decision making strategies.

To assess trait dominance, participants completed the dominance and the submissiveness subscales of the Revised Interpersonal Adjective Scale (IAS-R; Wiggins, Trapnell, & Philipps, 1988). The scale is shown in Appendix 1. It comprises a series of traits, some pertaining to dominance (e.g., *firm, assertive*), some to submissiveness (e.g., *shy, bashful*), as well as several fillers (e.g., *neighbourly, crafty*). Participants rated how accurately each of the adjectives described them on an 8-point scale ranging from 1 (*extremely inaccurate*) to 8 (*extremely accurate*). The questionnaire also included a measure of individuals' generalized sense of power (see Anderson & Galinsky, 2006), shown in Appendix 2. Participants rated their degree of agreement or disagreement to eight items (e.g., '*I can get people to listen to what I*

say; *I can get others to do what I want*) using a 7-point scale (*disagree strongly* to *agree strongly*). To assess people's preference for relying on experiences, an English version of the preference for intuition scale was administered (PID-I; see Richetin, Perugini, Adjali, & Hurling, 2007). Participants rated their degree of agreement to items such as '*my feelings play an important role in my decisions*' on a 7-point scale (see Appendix 3 for a list of all items). Finally, four items also assessed people's mood on 7-point scales, ranging from –3 (*very bad; very sad; very discontent; very tense)* to +3 *(very good; very happy, very content; very relaxed).* Following participation, participants were debriefed and they received additional background information on the study via Email.

Results

Data Preparation

At first, single indexes for all variables of interest were created. The eight items assessing dominance (α = .84, M = 4.96, SD = 1.07) and the eight items measuring submissiveness (α = .79, M = 4.01, SD = 1.07) were averaged into single scores. Albeit correlated ($r(81)$ = -.38, $p < .001$), the two subscales capture distinct dimensions.[13] Likewise, the eight items of the sense of power scale were averaged into a single index for sense of power (α = .82, M = 4.82, SD = .87), [14] and the four items measuring mood were collapsed into a mood index (α = .86, M = .80, SD =

[13] A principal component analysis on the 16 items confirms this. Using the parallel analysis (PA) method (Lautenschlager, 1989) to determine the number of components to retain (see Enzmann, 1997), a principal component analysis with oblimin rotation yields a two-factorial solution.

[14] Inverse coded items were re-coded such that high values reflect a greater sense of power.

1.15). Finally, the nine items of the PID-I scale were averaged into a single score (α = .71, M = 4.78, SD = .77).[15]

Preference for Experiences

Table 1 displays the zero-order correlations between the indexes derived from the present study. As predicted, both dominance and sense of power correlated positively with participants' preference for experience-based judgments, rs(81) = .26 and .42, respectively, ps $\leq$ .019. No such association was evident for submissiveness, r(81) = -.01, p = .925. Mood was positively associated with power (dominance: r(81) = .24, p = .032; sense of power: r(81) = .29, p = .009), but did not correlate with participants' preference for experience-based judgements, r(81) = .08, p = .497. The association between dominance, sense of power, and preference for experiences is, therefore, independent from mood (cf. Kenny, Kashy, & Bolger, 1998). These results confirm the hypothesized relationship between elevated dominance and increased reliance on experiences.

Table 1. Zero-order Correlations between Measures Employed in Study 1

	1	2	3	4	5	6
1. Dominance	1	—	—	—	—	—
2. Submissiveness	-.38**	1	—	—	—	—
3. Sense of Power	.66**	-41**	1	—	—	—
4. Mood	.24*	-.19	.29**	1	—	—
5. Preference for Experiences (PID-I)	.26*	-.01	42**	.08		

Note: † = $p < .10$; * = $p < .05$; ** = $p < .01$; N = 83.

[15] Identical results are obtained using factor scores in order to derive aggregates of the scales.

A subsequent multiple regression analysis was conducted to see if the association between dominance and participants' preference for experiences could be explained by the greater sense of power dominant individuals tend to experience in their everyday life. As expected, dominance was a reliable predictor of participants' preference for experiences ($\beta = .26$, $p = .019$), and positively associated with sense of power ($\beta = .66$, $p < .001$). However, when controlling for the effects of sense of power, the effects of dominance were no longer significant ($\beta = -.04$, $p = .789$), and sense of power emerged as the sole predictor of reliance on experiences ($\beta = .45$, $p < .001$). A Sobel test confirmed that sense of power fully mediated the effects of dominance on people's preference for experiences-based judgments, $Z_{Sobel} = 3.08$, $p = .002$. Figure 1 illustrates this relationship. Taken together, these results suggest that the more individuals are dominant, the more they are inclined to draw on subjective experiences to inform their judgments and decisions. Moreover, this preference for relying on experiences appears to derive from the greater power dominant individuals tend to have in their everyday life relationships.[16]

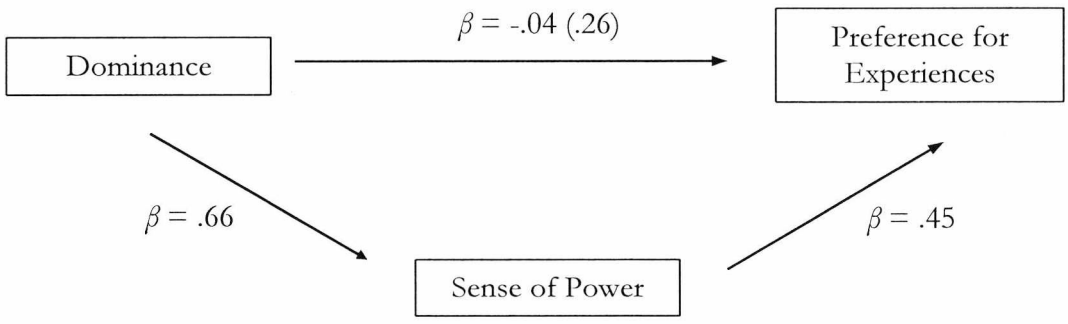


Figure 1: Mediating effects of sense of power observed in Study 1

[16] An inverse model, whereby dominance mediates the association between sense of power and preference for experiences, is not significant, $Z_{Sobel} = -.25$, $p = .800$.

Discussion

Study 1 provides initial evidence for the hypothesis that power increases reliance on subjective experiences. Trait dominance was found to be positively associated with the extent to which individuals endorsed relying on experiences to inform their everyday decisions and judgments. That is, the more individuals are dominant, the more they assert drawing on feelings and subjective experiences to guide their judgments and decisions. Crucially, these effects of dominance derived from the greater power dominant individuals tend to experience in their everyday relationships.

Although these results are promising, a number of limitations need to be addressed. First, the study fully relied on self-reports. Hence, it is unclear to which extent the observed relationships reflect associations that can be observed in real-life. Additionally, it is uncertain to which extent individuals are actually aware of the fact that their judgments are guided by subjective experiences. For instance, research on incidental affect shows that subjective experiences can cease to impact judgments when individuals become aware of their influence (e.g., Schwarz, 1990).

However, in response to these reservations, there is reason to believe that the PID-I scale indeed captures reliable differences in people's actual preference for experience-based judgments and behaviours. For instance, the scale predicts the influence of hedonic experiences to purchasing behaviour (Richetin, Perugini, & Adjali, 2007), and the extent to which people draw on their subjective experiences in their perceptions of risk (Betsch, 2004) and utility (Schunk & Betsch, 2006). This indicates that the present findings may translate into differences that occur between powerful and powerless individuals in real life.

Another concern relates to the discriminant validity of the dominance and sense-of-power measures. Power tends to induce more unequivocal responses (Guinote, 2007a, in press). Accordingly, participants high on dominance and sense of power might have simply volunteered somewhat more extreme responses, and this response bias could have resulted in an artificial correlation with other measures. The present study cannot rule out such a general response-bias as an alternative explanation. However, other large-scale surveys have not found an association between dominance and sense of power with other constructs (e.g., need to belong, see Weick et al., 2008a, Study 1). Accordingly, a general response bias seems an unlikely account for the effects obtained in the present study.

Taken together, Study 1 supports the hypothesis that power induces reliance on experiences as a source of information. However, the study is limited because it relies on self-reports and employs a correlational design. Study 2 was designed to overcome these limitations by examining the contributions of subjective experiences and declarative thought contents in the judgments of powerful and powerless individuals in an experimental design.

3.2.2. Study 2: Ease of Retrieval and Evaluative Judgments

The purpose of Study 2 was to examine the consequences of power for reliance on experiences using the ease-of-retrieval paradigm. As pointed out earlier in Chapters 2.3.1. and 2.5.1., this research paradigm separates the contributions of experiences and declarative thought contents in the judgments of powerful and powerless individuals.

The present research builds on a previous study by Weick (2004; see also Weick & Guinote, 2008a), which found initial support for the hypothesis that power increases reliance on ease-of-retrieval experiences. In this study, participants primed with power and powerlessness were asked to recall few (an easy task) or many (a difficult task) arguments in favour of sending humans to Mars. If powerful individuals rely more on subjective experiences, then they should use the ease or difficulty in generating arguments as a source of information to guide their attitude judgments. Accordingly, one would expect participants primed with power to be more in favour of sending humans to Mars after generating few as opposed to many arguments. In contrast, the more complex processing orientation of powerless individuals should incline them to focus more on the content of their thoughts. Thus, in line with previous theorizing (e.g., Schwarz et al., 1991), participants primed with powerlessness should either be equally favourable across conditions, or they may express more favourability after the generation of many rather than few arguments.[17]

[17] It is often assumed that a large number of arguments is more favourable towards the attitude object compared to a small number of arguments (e.g., Ruder & Bless, 2003). However, empirical evidence indicates that this is not necessarily always the case (see Haddock, 2000; Tormala, Pretty, & Briñol, 2002). Theoretically, the overall favourability depends on the strategy individuals apply to integrate the retrieved information into a single overall attitude judgment. For instance, individuals might weight all arguments equally, or they might give more weight to arguments that were retrieved first (primacy), or last (recency). The ways individuals combine declarative information into a single judgment has been commonly neglected in previous research on the ease of retrieval. Past research has

As can be seen in Figure 2, this was the pattern of results that emerged from the study. Participants primed with power expressed a more favourable attitude after having retrieved a few as opposed to many arguments. Conversely, ease-of-retrieval experiences did not affect participants primed with powerlessness.

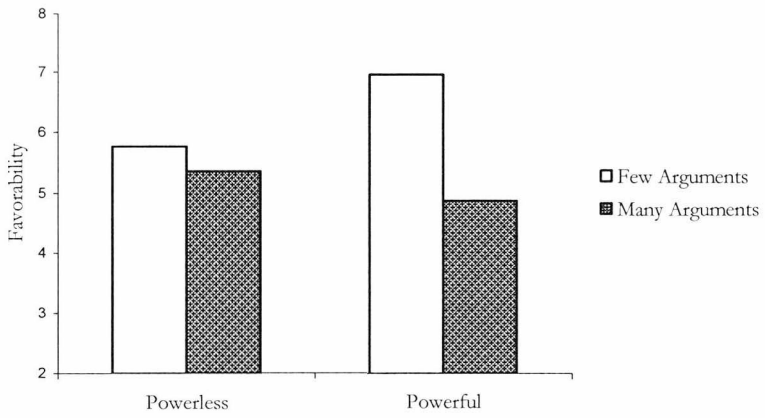


Figure 2: Attitude toward the position of the generated arguments as a function of power and number of arguments (from Weick, 2004, Study 1). *Note:* higher values indicate a more favourable attitude.

The results obtained by Weick (2004) support the assumption that ease of retrieval affected powerful but not powerless individuals' attitudes. However, the results do not rule out that differences in the content of the information retrieved, rather than the use of experiential information, underlie the effects of power. It is possible that powerful individuals, unlike powerless individuals, generated more persuasive arguments when asked to generate few compared to many arguments. This in turn could have produced the outcome that was obtained in Weick's study. The

---

implicitly built on the premise that there is a linear increase in overall favourability as a function of the number of arguments people retrieve.

original paradigm developed by Schwarz and colleagues does not rule out this alternative explanation (see Ruder & Bless, 2003; Wänke, Bless, & Biller, 1996).

The purpose of Study 2 was to follow up on these findings, and to rule out that differences in the content of the information retrieved can account for the results found by Weick (2004). To achieve this, a yoked research design was employed (see Ruder & Bless, 2003; Wänke et al., 1996). In particular, the arguments generated by participants in Weick's study were presented to another sample of participants. Specifically, each 'writer' was matched with one 'reader' of the same sex. After reading the arguments of a writer, participants in the present study expressed their own attitudes regarding the dispatch of humans to Mars. They also evaluated the quality of the arguments.

This research design allows a more stringent test of the hypothesis that power induces greater reliance on the ease of retrieval. Since readers have only access to the content and not to the subjective experiences associated with the generation of the arguments, their attitudes should reflect the arguments' persuasive content. Assuming that power-primed writers relied on the experienced ease of generating arguments, then only writers, but not readers, should have more favorable attitudes in the few- compared to the many-arguments condition. Conversely, assuming that powerlessness-primed writers based their judgments on the content of the retrieved information, then powerlessness writers and their readers should not differ in their attitudes.

Method

Participants and Design

One hundred and thirty-six students from the University of Kent (79 females and 57 males) participated on a voluntary basis. Participants were presented with the

arguments of a same-sex writer of Weick's (2004) study. Writers had been primed with power or powerlessness, and they had generated either a few or many arguments. Consequently, the present study used a 2 (power: powerful vs. powerless) x 2 (number of arguments: few vs. many arguments) yoked design, with power and number of arguments as between-subjects factors.

Procedure and Materials

Participants took part in groups of up to five people. First, participants read the same background information presented to the writers in Weick's study. This background information consisted of a news report that dealt with plans of the National Aeronautics and Space Administration (NASA) to send humans to Mars. The news report read as follows:

> On January 14, 2004, a new course of human exploration of the solar system was charted. A "Commission on Implementation of Space Exploration" was created. The Commission will generate a report for NASA this summer, and it is expected that the endeavor of sending humans to Mars will play a prominent role in this report.

After reading this background information each participant read the arguments generated by a writer in Weick's study. Participants were instructed to read the arguments carefully to provide an objective interpretation of this information. After reading the arguments, participants rated their attitudes towards sending humans to Mars on a 10-point scale ranging from *negative* (1) to *positive* (10), and they indicated how much they would welcome such an enterprise on a scale ranging from *not at all* (1) to *very much* (10). The writers in Weick's (2004) study had indicated their attitudes using exactly the same measures.

Finally, readers also rated the overall quality and the persuasiveness of the arguments generated by their respective writer on two 10-point scales ranging from 1

(*not at all persuasive; very bad*) to 10 (*very persuasive; very good*). Participants were then thanked and debriefed.

Results

Attitudes

The readers' scores on the two attitude measures were averaged into a single index ($\alpha = .89$, $M = 6.31$, $SD = 2.19$). The study hypothesized that readers' attitudes differ from the attitudes of writers primed with power but not from the attitudes of writers primed with powerlessness. To test this prediction, attitude scores from the readers and from the writers were submitted to a 2 (power: powerful vs. powerless) x 2 (number of arguments: few vs. many arguments) x 2 (source: writer vs. reader) mixed analysis of variance. Status as a writer or as a reader was treated as a within-pairs factor. The analysis revealed that readers had a more favourable attitude towards sending humans to Mars than writers (*M*s = 6.31 vs. 5.75), resulting in a main effect of source, $F(1, 132) = 4.20$, $p = .043$. Since all writers had generated unequivocally supportive arguments in favour of sending humans to Mars, the positive opinion expressed by a fellow student might have influenced readers' attitudes. There was also an interaction between source and number of arguments, $F(1, 132) = 5.33$, $p = .023$. While there was an overall tendency for writers to have a more favourable attitude after generating a few rather than many arguments (*M*s = 6.34 vs. 5.15), $F(1,132) = 8.91$, $p = .003$, no such difference was evident for the readers (*M*s = 6.30 vs. 6.32), $F < 1$ (see Table 2). Importantly, this relationship was further qualified by a marginally significant interaction between power, number of arguments and source, $F(1, 132) = 2.87$, $p = .093$.[18] As predicted, only power primed

[18] Across studies, tests of simple effects were conducted using Fisher's least significant difference test, which requires a significant higher order interaction (see Howell, 1995). In

writers were more favourable towards sending humans to Mars after generating few as opposed to many arguments (Ms = 6.97 vs. 4.88), $F(1, 132) = 11.47$, $p < .001$. No such difference was evident for their readers (Ms = 6.27 vs. 6.38), $F < 1$. This pattern is reflected in a significant interaction between source and number of arguments for powerful writers and their readers, $F(1, 132) = 7.34$, $p = .008$. In contrast, the attitudes of powerless writers and their readers did not vary as a function of the number of arguments retrieved, ($Ms_{writers}$ = 5.77 vs. 5.36 for few and many arguments respectively; $Ms_{readers}$ = 6.32 vs. 6.26, respectively; Fs < 1). These results lend support to the hypothesis that powerful writers in Weick's study based their attitudes on ease-of-retrieval experiences, whereas powerless writers based their attitudes on the content of the information that they retrieved. No other reliable effects emerged (Fs < 1).

Table 2. Attitudes as a Function of Power and Number of Arguments Retrieved (Writers) or Arguments Studied (Readers).

		Writers		Readers	
No. of arguments:		M	SD	M	SD
		Powerful			
	Few	6.97	2.29	6.27	2.18
	Many	4.88	2.70	6.38	2.00
		Powerless			
	Few	5.77	2.31	6.32	2.29
	Many	5.36	2.41	6.26	2.31

Study 2 simple effects were still significant after applying Bonferroni corrections to adjust the familywise error rate for the number of comparisons made ($\alpha' = .05/4 = .0125$)

Argument Persuasiveness

Readers' ratings of argument-persuasiveness and quality were averaged into a single score (α = .87, M = 5.51, SD = 1.94) and submitted to a 2 (power: powerful vs. powerless) x 2 (number of arguments: few vs. many arguments) between subjects analysis of variance. The analysis revealed a main effect of power, $F(1, 132) = 5.17$, $p = 025$. The arguments of powerful writers were rated higher in persuasiveness than the arguments of powerless writers (Ms = 5.56 vs. 4.82). However, this main effect did not vary as a function of the number of arguments. Specifically, the interaction between power and number of arguments was not significant ($F < 1$). This result provides additional support for the hypothesis that powerful individuals were primarily influenced by ease-of-retrieval experiences, rather than by differences in the persuasiveness of the retrieved information. Finally, there was also no main effect of number of arguments on perceived persuasiveness (p = .164). Overall, many arguments were not more persuasive than listing few arguments. This result is consistent with the interpretation that powerless writers, who did not vary their attitudes as a function of the number of arguments they retrieved, based their judgments on the content of the information they retrieved.

Discussion

Taken together the results of Study 2 are consistent with the hypothesis that power induces reliance on ease-of-retrieval experiences. Using a yoked design, the study re-examined the findings obtained by Weick (2004). The author showed that participants primed with power, but not participants primed with powerlessness, expressed more favourable opinions after generating few rather than many arguments. Although this is consistent with the interpretation that power increases reliance on

ease-of-retrieval experiences, the study could not rule out that these effects derived from variations in the content of the generated information.

In Study 2 participants read the arguments of the writers in Weick's study. Importantly, readers had only access to the informational content of the arguments but not to the experienced ease of retrieval. The results showed that the attitudes of powerful writers and their readers differed across the number of arguments conditions. The direction of this effect supports the hypothesis that powerful writers were affected by the ease of retrieval. In contrast, powerless writers and their readers did not differ in their attitudes. This suggests powerless writers drew on the content of the retrieved information when they formed their attitudes.

Participants in Study 2 showed the same level of favourability regardless of whether they read many or few arguments on the topic. This could be interpreted as evidence that participants did not engage much in the task. However, a sloppy approach should have resulted in more favourable attitudes following the presentation of many rather than few arguments (e.g., Chaiken, Wood, & Eagly, 1996). The finding that participants did not vary in their attitudes is more consistent with the interpretation that participants followed the instructions and processed the information presented to them carefully.

Study 2 supports the hypothesis that power induces reliance on ease-of-retrieval experiences. However, it is unclear if these findings generalize to different domains. In particular, the study was concerned with a judgmental target that implied little involvement for participants. It is conceivable that the effects of power do not hold in more self-relevant and involving domains (see also Haddock, 2000). If true, this would constitute a serious limitation to the present findings. Accordingly, Study 3

was designed with the aim of replicating the present findings in a more familiar and involving domain: judgments related to the self.

3.2.3. Study 3: Ease of Retrieval and Self-related Judgments

Past research has argued that power magnifies the expression of self-related attributes (Chen et al., 2001; Smith & Trope, 2006). For example, power increases cooperative behaviour for communal oriented participants and selfish behaviour for exchange oriented participants (Chen et al., 2001). Thus, one would expect that judgments and behaviours related to the self are more stable and less subject to momentary influences for powerful than for powerless individuals. Therefore, if it can be shown that the self-related judgments of powerful individuals are subject to the influence of momentary experiences, then this would give considerable support to the generalizability of the claim that power increases reliance on subjective experiences. Accordingly, Study 3 aimed at extending the previous findings by examining the consequences of power for reliance on ease-of-retrieval experiences in a self-relevant domain (see also Weick & Guinote, 2008a).

Another important contribution of Study 3 is to examine the ecological validity of the present findings. This was done using a quasi-experimental design with a sample of managers and subordinates. These two groups naturally differ in their levels of power they experience in real-life. Using natural groups is important considering that socio-cognitive research on power has almost exclusively built on findings obtained with undergraduate students, who tend to have limited experience with enacting powerful roles. Accordingly, there is surprisingly little evidence that the effects obtained in the laboratory coincide with effects of power that take place in real-life.

In the present study managers and subordinates retrieved episodic information that pertained to recent leisure time activities. Specifically, they were asked to list either many or few episodic instances that had occurred during their leisure time in

the two weeks preceding the assessment. Following this task, participants indicated how satisfied they were with the amount of leisure time at their disposal, as well as with their general work-life balance. Consistent with the hypothesis that managers' perceptions are guided by the ease of retrieval, managers were expected to be more satisfied with their leisure time after generating a few (a task that is perceived as easy) compared to many (a task that is perceived as difficult) past instances of leisure time. Subordinates, on the other hand, should have been unaffected by the ease of retrieval and should have based their judgments on the content of the retrieved information instead.

Method

Participants and Design

Eighty-three full-time employees (44 managers and 39 subordinates) were approached at an international business airport. Managers (9 females and 35 males) worked in a variety of businesses (e.g., IT, Banking, Automotive). All managers had subordinates under their supervision. Nineteen managers (43.2%) occupied middle management and seventeen (38.7%) top management positions.[19] Twenty-three percent had 5 or fewer subordinates, 43% had 6 to 20 subordinates, and 29% were in charge of more than 20 subordinates. The managers were aged between 21 and 60 years ($M = 40.14$, $SD = 9.08$). Care was taken to obtain a comparable sample of employees in subordinate positions (13 females and 26 males) working under the supervision of one or more managers. Most subordinates (87.2%) were office-workers in clerical positions (e.g., Sales Executives, Advisors, Software Programmers). Fourteen subordinates (43.6%) occupied senior positions and eleven subordinates (28.2%) occupied junior positions. The subordinates were between 20

[19] Eight managers (18.2%) and 11 subordiantes (28.2%) did not indicate their current job level.

and 53 years old ($M = 32.74$, $SD = 8.31$) and none of them had personnel responsibilities.

Participants were run individually and were randomly assigned to one of the two ease of retrieval conditions, thus creating a 2 (power: managers vs. subordinates) x 2 (number of instances: few vs. many) factorial between subjects design.

Procedure and Materials

Participants were informed that the study dealt with the perception of work-life balance. They received a short questionnaire that consisted of two pages. On the first page participants were asked to indicate their current function and job-level. Managers also indicated the number of subordinates working under their supervision. This procedure was intended to activate the representation of power or powerlessness participants experienced in their everyday working life. It then followed the experimental manipulation of ease of retrieval. Specifically, participants were asked to indicate two (easy) or ten (difficult) activities or events that they had experienced during the last two weeks in their leisure time. Participants also indicated the time they spent on each activity. The number of instances in each condition was based on a pre-test conducted with ten full-time employees, who were asked to list as many episodes of leisure time as they could think of ($M = 7.40$; $SD = 3.13$). The definition of leisure time was included in the instructions, which read as follows:

> Balancing professional and private life plays a prominent role in well-being and in our general quality of life. It is evident that work-life balance involves not only factors occurring at work, but also all activities/events outside work. Time outside employment or education can be divided into necessary time (e.g., personal care activities, sleeping, eating), committed time (pursuing social or other responsibilities – housework and domestic activities, child care, shopping, voluntary work, social commitments) and leisure time (time for yourself, not falling into the other categories). In the following please list two (ten) distinct situations or events that you experienced within the last two weeks in your leisure time. This means time for 'yourself' outside work that was not committed to any responsibilities. Please describe the situation or event briefly. In the right column

please indicate how much time the situation or event took approximately (in hours).

Participants completed the questionnaire at their own pace. Following the manipulation of ease of retrieval they indicated on three 9-point scales how much they were happy with the amount of leisure time they had, whether their leisure time allowed them to self-realize, and how much they were content with their current work-life balance. Participants' mood was assessed using four 7-point scales ranging from –3 *(very bad; very sad; very discontent; very tense)* to +3 *(very good; very happy, very content; very relaxed).* Finally, participants also indicated their gender, age, weekly hours spent at work, and how many days they had been on holidays during the two weeks prior to completion of the questionnaire. On completion participants were thanked and debriefed.

Results

Manipulation Check

Participants indicated how easy it was for them to recall the leisure activities on a 9-point scale. This measure of experienced ease was subjected to a 2 (power: managers vs. subordinates) x 2 (number of instances: few vs. many instances) between subjects analysis of variance. The results indicated that generating few instances was easier than generating many instances (Ms = 5.89 vs. 4.33), $F(1, 78) = 8.24$, $p = .005$, confirming the effectiveness of the experimental manipulation. No other reliable effect emerged (Fs < 1), which suggests that managers and subordinates did not differ in the experienced ease of retrieval within the experimental conditions.

Leisure Time Satisfaction

The three measures of leisure time satisfaction were first collapsed into a single index ($\alpha = .84$, $M = 4.41$, $SD = 1.87$) and then submitted to a 2 (power:

managers vs. subordinates) x 2 (number of instances: few vs. many) between subjects analysis of variance. As shown in Table 3, the analysis yielded the expected significant interaction between position and number of recalled instances, $F(1, 79) = 7.48$, $p = .008$. Managers reported greater satisfaction after indicating a few rather than many leisure time activities (Ms = 4.95 vs. 3.82), $F(1, 79) = 4.19$, $p = .044$. The opposite tendency was evident for subordinates, who showed a marginally significant trend to be more satisfied after having listed many as opposed to a few activities (Ms = 4.92 vs. 3.85), $F(1, 79) = 3.34$, $p = .071$. No other reliable effect emerged, Fs < 1. In line with the hypothesis, these results suggest that managers, but not subordinates, based their judgments of leisure time satisfaction on ease-of-retrieval experiences.

Table 3. Satisfaction with Leisure Time as a Function of Organizational Power and Number of Instances Retrieved (Study 3).

	Position			
	Manager		Subordinate	
No. instances:	*M*	*SD*	*M*	*SD*
Few	4.95	1.77	3.85	1.99
Many	3.82	1.88	4.92	1.64

Additional Analyses

Correlational analyses were carried out to further investigate the relationship between experienced ease and leisure time satisfaction. As expected, managers' ease-of-retrieval experiences were significantly associated with leisure time satisfaction,

$r(41) = .44$, $p = .003$. In contrast, the association between experienced ease and leisure time satisfaction was not significant for subordinates, $r(37) = .26$, $p = .112$.[20]

Mood

The four mood-items were averaged into a single score ($\alpha = .86$, $M = .71$, $SD = 1.17$), and then subjected to a 2 (power: managers vs. subordinates) x 2 (number of instances: few vs. many instances) between subjects analysis of variance. No reliable effects emerged ($ps \geq .196$). This suggests that mood does not underlie the effects reported in the present study.

Actual Leisure Time

Additional analyses examined whether leisure time, indexed by the total number of hours participants spent in the activities reported, varied as a function of power (managers vs. subordinates) and number of instances recalled (few vs. many). As expected, participants retrieved more hours of leisure time when being asked to indicate many as opposed to few past instances ($Ms = 34.82$ vs. 13.65), $F(1, 79) = 19.93$, $p < .001$. No other effects emerged ($Fs < 1$), which indicates that managers and subordinates did not differ in terms of actual amount of leisure time they reported. Differences in actual leisure are, therefore, unlikely to underlie the effects observed in the present study.[21]

---

[20] The difference between the two correlation coefficients did not reach significance, $Z_{diff} = .89$, $p = .373$

[21] Additional analyses examined the role of age and gender. There was a tendency for age to be positively related to leisure-time satisfaction, $r(79) = .21$, $p = .066$. Moreover, women reported lower levels of satisfaction than did men ($Ms = 3.91$ vs. 4.66), $F(1, 81) = 4.27$, $p = .042$. However, participant age and gender did not have other effects (all $ps \geq .156$) and were, therefore, not discussed further.

Discussion

The findings of Study 3 contribute to the generalizability of the claim that power induces reliance on subjective experiences. Previous research on power has argued that power magnifies the expression of self-related concepts (Chen et al., 2001; Smith & Trope, 2006). In this view, powerful individuals' judgments related to the self should be particularly unlikely to be subject to momentary influences of subjective experiences. Nevertheless, the present study showed that power increased reliance on ease-of-retrieval experiences in the construction of judgments related to the self.

The present study replicated effects that were obtained in the laboratory in a sample of managers and subordinates, who naturally differ in the levels of power they experience in their working environment. This provides the first supportive evidence that standard manipulations of power employed in the laboratory and using student samples coincide with effects of power that occur in real life.

Overall these findings point out that power increases reliance on subjective experiences in unfamiliar (Study 2) and familiar, self-relevant domains (Study 3). The next study examines judgments related to social targets.

3.2.4. Study 4: Ease of Retrieval and Social Perception

Study 4 was designed to extend the previous findings of the relationship between power and subjective experiences to social perception and stereotyping. The consequences of power for social perception have been studied widely (e.g., Chen et al., 2001; Chen et al., 2004; Dépret & Fiske, 1999; Fiske, 1993; Goodwin et al., 2000; Goodwin et al., 1998; Guinote et al., 2002; Overbeck & Park, 2001; Overbeck & Park, 2006; Richeson & Ambady, 2002; Stevens & Fiske, 2000; Vescio et al., 2003; Vescio et al., 2005), and it has generally been assumed that power increases stereotyping and reliance on prior knowledge (see Fiske, 1993; Fiske & Dépret, 1996; Goodwin et al., 2000; Keltner et al. 2003; Keltner & Robinson, 1997; Rodriguez-Bailon et al., 2000). For example, Fiske and her colleagues (Fiske, 1993; Fiske & Dépret, 1996; Goodwin et al., 2000) observed that individuals in power are particularly inclined to attend to stereotype-consistent information, and to ignore stereotype-inconsistent information of social targets.

However, power does not always lead to stereotyping. Recent findings indicate that powerful individuals are capable of individuating their subordinates. Overbeck and Park (2001) found that powerful individuals, compared to powerless individuals, better remembered individuating information of their subordinate interaction partners. Similar results were obtained by Vescio and her colleagues (2003), who observed that powerful individuals only used stereotypes about their subordinates when stereotypes were relevant to the context (e.g., women in masculine domains) and informative for their influence strategies. Thus, it appears that powerful individuals are flexible social perceivers. They may individuate others depending on their current goals (Overbeck & Park, 2006) and social influence strategies (Vescio et al., 2003).

Previous research has examined contexts in which social perception was instrumental to the exercise of power. Specifically, stereotyping or individuation contributed to achieving powerful individuals' goals. One question that arises is whether the social judgments of powerful individuals can also be affected by momentary experiences that are unrelated to the exercise of power. Study 4 was conducted to address this question and to see how momentary influences that derive from subjective experiences affect the social perception of powerful and powerless individuals (see also Weick & Guinote, 2008a).

Social judgments are subject to contextual influences (see Kurzban, Tooby, & Cosmides, 2001; Wittenbrink, Judd, & Park, 2001), including effects of momentary experiences (Dijksterhuis, Macrae, & Haddock, 1999). Accordingly, the present study hypothesized that powerful individuals will rely more on stereotypes when experiential information is consistent with stereotypes, but that they would rely less on stereotypes when subjective experiences contradict stereotypes. In contrast, the perception of powerless individuals should be unaffected by momentary experiences and be based on the knowledge about a social target that they retrieve.

To test these hypotheses, Study 4 used gender groups as target categories. Gender is a basic social category, and the representation of gender groups is well-established and develops at a very young age (e.g., Powlishta, 1995; Yee & Brown, 1994; see also Jost & Kay, 2005). The claim that powerful individuals rely more on subjective experiences is particularly supported if it can be shown that these effects occur for well-established stereotypes.

In the present study participants generated many or few characteristics on which they felt men and women are, on average, different (see Dijksterhuis et al., 1999). This task requires participants to retrieve gender stereotypes. It was

hypothesized that powerful participants, more than powerless participants, would perceive the two gender groups in stereotypic ways when it was easy to retrieve gender stereotypes. However, when it was difficult to retrieve differences between men and women, powerful participants were expected to perceive the gender groups in less stereotypic ways compared to powerless participants.

In Study 4 power was operationalized using a well established priming manipulation (see Galinsky et al., 2003). Although power is conceived as a relational concept (e.g., Ng, 1980), previous research indicates that the effects of power are not restricted to the context of the actual power relationship (e.g., Anderson & Galinsky, 2006; Galinsky et al., 2003; Guinote, 2008b; Smith & Trope, 2006). This is consistent with the assumption that individuals possess representations of response tendencies associated with previous experiences of power or powerlessness (see also Anderson & Galinsky, 2006). Priming power provides a means of activating these representations.

Method

Participants and Design

One-hundred and thirty-two students (84 females and 48 males) from the University of Kent participated in this study. A draw with four prizes was offered in return for participation. Participants were randomly assigned to the 2 (power: powerful vs. powerless) x 2 (number of differences: few vs. many) experimental conditions.

Procedure and Materials

Up to six participants took part in one session. Upon arrival participants were informed that they would participate in three separate studies, the first study allegedly being concerned with situational perception and the remaining two studies investigating group perception. Separate questionnaires numbered from one to three,

with coversheets that differed in colour, were used to bolster this cover story. Participants were instructed to work through the questionnaires in the order presented to them. The power-manipulation was included in the first questionnaire. Following Galinsky et al. (2003) participants were asked to provide a vivid written report of either a past event where they had power over another individual, or a past event where someone else had power over them (see also Appendix 4). Participants were given an answer-sheet with 35 lines to complete this task. Ease of retrieval was then manipulated. Participants were asked to list either two or twelve attributes on which they thought women and men are, on average, different. The manipulation was adopted from Dijksterhuis and colleagues (1999). The instruction read as follows:

> In this study we are interested in your perception of characteristics that members of different groups possess. In particular, we are interested in gender groups and attributes that differentiate men and women. We would like you to think about differences between men and women. In the space below please list two (twelve) traits/personality-characteristics on which you think women and men are, on average, different.

The final questionnaire assessed the dependent variables. First, a measure of typicality asked participants to indicate how well twelve gender-typed attributes describe men and women on a scale ranging from *not at all* (1) to *very well* (9). The attributes were chosen based on previous research (Bem, 1976; Spence, Helmreich & Holohan, 1979; Williams & Best, 1982). Masculine attributes were *courageous*, *assertive*, *self-confident*, *rude*, *boastful*, and *autocratic*; female attributes were *warm*, *sympathetic*, *gentle*, *nagging*, *whiny*, and *fussy*. Participants indicated how well each of the attributes described the two target-groups (see also Appendix 5). They also estimated the percentage of women and men possessing each of the twelve attributes (see Park & Judd, 1990). The order of the two target groups was counterbalanced. Finally, mood was measured using the same four-item scale employed in Study 3.

Results

Manipulation Checks

Participants in the high-power condition reported that they felt more in charge than participants in the low-power condition (*M*s = 6.98 vs. 2.70), $t(129) = 15.09$, $p < .001$, indicating that the manipulation of power was effective. Participants also described their experienced ease or difficulty in generating the requested number of gender attributes on a 9-point scale. The scores were subjected to a 2 (power: powerful vs. powerless) x 2 (number of traits: few vs. many traits) between subjects analysis of variance. As expected, generating a few differences between men and women was perceived easier than generating many differences (*M*s = 4.84 vs. 3.30), $F(1, 128) = 14.98$, $p < .001$. No other effects were significant, Fs < 1.

Stereotyping

An index of stereotypicality was computed by subtracting ratings given on counterstereotypic traits from ratings given on stereotypic traits for each target group separately. The same was done for participants' percentage estimates. Initial inspection of the data revealed that the two outcome measures (trait ratings and percentage estimates) were highly correlated (male target group: $r(130) = .85$, $p < .001$; female target group: $r(130) = .77$, $p < .001$). Consequently, scores were standardized and then averaged into a single index for stereotypicality. This was done for each target group separately (men: $\alpha = .92$; women: $\alpha = 87$). This index was then submitted to a 2 (power: powerful vs. powerless) x 2 (number of traits: few vs. many traits) x 2 (participant gender: male vs. female) x 2 (target gender: men vs. women) mixed analysis of variance with target gender as within-subjects factor. The analysis revealed the expected significant interaction between power and number of stereotypic traits participants generated, $F(1, 124) = 7.78$, $p = .006$. As shown in

Table 4, powerful participants stereotyped both target groups more after having retrieved a few as opposed to many stereotypic traits (*Ms* = .26 vs. -.10), $F(1, 124) = 4.22$, $p = .042$. Conversely, powerless participants tended to stereotype more after retrieving many rather than a few stereotypic traits (*Ms* = -.26 vs. .09), $F(1, 124) = 3.57$, $p = .061$. The analysis also yielded a number of unpredicted effects. There was an interaction between number of arguments and target gender, $F(1, 124) = 3.31$, $p = .071$; as well as an interaction between power, number of arguments, and target gender, indicating that the effects of power and ease of retrieval were somewhat stronger for male compared to female gender stereotypes, $F(1, 124) = 2.75$, $p = .100$. Finally, an interaction between power and participant gender suggests that males had more stereotypic perceptions than females when primed with powerlessness (*Ms* = .29 vs. -.26), but not when primed with power (*Ms* = -.01 vs. .14), $F(1, 124) = 6.48$, $p = .012$. No other effects were significant ($ps \geq .152$). In particular powerful participants did not rely more on stereotypes than powerless participants ($F < 1$).

Table 4. Gender Stereotyping as a Function of Power and Number of Stereotypic Attributes Retrieved (Study 4).

	Powerful		Powerless	
No. of arguments:	*M*	*SD*	*M*	*SD*
Few	.26	.83	-.26	.64
Many	-.10	.66	.09	.87

Note: Standardized difference scores between stereotypic and counter-stereotypic ratings are shown. Higher values indicate more stereotyping.

Additional Analyses

Additional correlational analyses revealed that participants' ratings of experienced ease were unrelated to their stereotyping of men ($r(130) = -.06$, $p = .529$) and women ($r(130) = .07$, $p = .428$). The association between participants' ease-of-retrieval experiences and gender stereotyping did also not vary as a function of power (powerful: $r(63) = .064$, $p = .613$; powerless: $r(65) = -.031$, $p = .803$). Self-presentational concerns could explain these null-findings. Specifically, participants might have been reluctant to admit their true experiences in a task that required them to stereotype genders.[22]

Mood. Answers to the four items were collapsed into a single index ($\alpha = .79$, $M = .65$, $SD = 1.20$) and entered into a 2 (power: powerful vs. powerless) x 2 (number of attributes: few vs. many attributes) between subjects analysis of variance, which revealed no significant effects (Fs < 1). This suggests that differences in mood do not underlie the effects of power reported in the present study.

Discussion

Study 4 examined the role of subjective experiences in the social perception of powerful and powerless individuals. Powerful individuals stereotyped more when it was easy to retrieve stereotypic information, but they stereotyped less when it was difficult to retrieve stereotypes. Conversely, ease-of-retrieval experiences did not alter the social perception of powerless individuals. These results are consistent with

[22] One could argue that the outcome measures of stereotyping (trait ratings and percentage estimates) were more indirect and less transparent for participants than the measure of experienced ease.

Studies 2 and 3, indicating that powerful individuals relied more on the ease of retrieval than powerless individuals.

The present findings extend previous research that has linked power with more rigid social perception and reliance on general knowledge structures (e.g., Fiske, 1993). This research suggests that power promotes stereotyping, unless individuating information is instrumental to the goals that powerful individuals pursue (see Overbeck & Park, 2001, 2006; Vescio et al., 2003). The present study indicates that the social perception of powerful individuals is more flexible than previously assumed, and varies depending on the subjective experiences that accompany judgmental processes.

3.2.5. Summary and Outlook

Studies 1-4 provide convergent support for the hypothesis that powerful individuals are more inclined than powerless individuals to base their judgments on experience-based information. In Study 1, dominant individuals reported a greater inclination to use feelings and experiences as a source of information to guide their judgments and decisions, as compared to less dominant individuals. Moreover, the study found that differences in sense of power underlie these effects of dominance on greater self-reported reliance on experiences.

Studies 2-4 focused on the experienced ease or difficulty associated with the retrieval of mental contents. This approach allows separating the contributions of declarative thought contents and subjective experiences in the judgments of powerful and powerless individuals. Using a variety of operationalizations of power and investigating different domains, such as attitude judgments toward irrelevant (Study 2) or relevant targets (Study 3), and stereotypes (Study 4), power consistently promoted reliance on ease-of-retrieval experiences. The judgments of powerful participants were more in line with the content of the retrieved information when retrieval was easy than when retrieval was difficult. Conversely, the judgments of powerless participants were not affected by subjective experiences and tended to be based on the content of the retrieved information.

The previous studies focused on establishing a link between power and increased reliance on subjective experiences. Chapter 3.3. extends these findings and examines the long-term consequences of reliance on experiences, and the ways experiential and declarative information contribute to powerful and powerless individuals' levels of certainty in their judgments.

3. 3. Implications for Judgmental Stability and Certainty

Past research has emphasized the greater idiosyncrasy and stability of powerful individuals (e.g., Anderson & Berdahl, 2002; Chen et al., 2001). This research suggests that powerful individuals respond more in line with stable person characteristics (Chen et al., 2001) and prior knowledge structures (e.g., Fiske & Dépret, 1996). The present research emphasizes the greater context-dependence and flexibility that derives from the experience of power. For example, Study 3 found that the self-related judgments of powerful individuals were subject to the influence of momentary experiences. Likewise, Study 4 observed power both increased, and reduced, stereotypic social perceptions depending on momentary experiences.

The two perspectives are, however, not necessarily contradictory. Some contexts may habitually trigger the emergence of the same subjective experiences (e.g., Conway & Bekerian, 1987). If judgments are construed on the basis of experiential information, and the same experiences are repeatedly elicited in the context of a given judgmental target, then this would be conducive of some stability in judgments over time (see Wilson & Hodges, 1992, for a similar perspective on attitude stability).

Temporal stability in attitudes and judgments could also arise if evaluative judgments are stored in memory and retrieved later in subsequent evaluations related to the same target (Judd & Brauer, 1995; see also Schwarz & Bohner, 2001). Likewise, experiential information may be stored in memory systems (see Barsalou, 1999). This way, the initial effects of subjective experiences may have more enduring effects than previously considered. This reasoning is consistent with previous research that found effects of repeated subliminal exposure of stimuli on evaluative judgments after a one-week delay (Seamon, Brody & Kauff, 1983).

One goal of the present section is to address the implications of reliance on experiences for stability in the judgments of powerful and powerless individuals. Specifically, Study 5 tested the novel hypothesis that ease of retrieval can have long-term effects and, therefore, be conducive of some stability in the judgments of powerful individuals.

Chapter 3.3. also examines the consequences of the present findings for the ways powerful and powerless individuals derive a sense of certainty in their judgments. The present research builds on the premise that powerful individual have greater levels of control, which allows them to focus on primary sources of information (see also Chapter 2.4.). For these individuals subjective experiences suffice to yield sufficient levels of certainty in their judgments. In contrast, powerless individuals are assumed to draw on declarative sources of information in order to increase their sense of certainty and to be confident in their judgments. Study 6 tests this conjecture empirically. The study examines how experiential and declarative information contribute to powerful and powerless individuals' judgmental certainty.

3.3.1. Study 5: Ease of Retrieval and Attitude Stability

The previous studies support the hypothesis that power increases reliance on subjective experiences as a source of information. This suggests that the judgments of powerful individuals can be flexible and subject to the influence of momentary experiences. The purpose of Study 5 was to reconcile these findings with previous research that has shown power can lead to greater stability and idiosyncrasy in judgments and behaviours (e.g., Chen et al., 2001; Galinsky et al., in press). Specifically, Study 5 tested the hypothesis that reliance on the ease of retrieval can have long-term effects and thereby contribute to some stability in the judgments of powerful individuals (see also Weick & Guinote, 2008a). To test this hypothesis, in the present study participants made evaluative judgments twice: immediately after a manipulation of ease of retrieval, and again after one week. It was predicted that the effects of ease of retrieval would still be evident after one week.

In Study 5, the target of judgments was participants' attitudes towards a controversial topic: the introduction of biometric identification (ID) cards. Similarly as in Study 1, trait dominance was used as a proxy for power (see Anderson & Berdahl., 2002; Goodwin et al., 1998; Operario & Fiske, 2001), thereby allowing for a test of a linear relationship between power and reliance on the ease of retrieval (see also Weick & Guinote, 2008a). As in the previous studies, participants' mood was assessed to examine whether the effects of dominance are related to differences in mood.

Finally, the present study also addressed an important alternative explanation for the results obtained in the previous studies. The differences in the judgments of powerful and powerless individuals might have derived from differences in the number of counterarguments generated during the retrieval process. Specifically,

powerful and powerless individuals might have differed in the number of counterarguments generated during the retrieval process, which in turn can affect individuals' confidence in the generated information (see Tormala, Petty, & Briñol, 2002). To rule out this alternative explanation, participants listed all thoughts they had while generating arguments (see Greenwald, 1968; Maheswaran & Chaiken, 1991).

Method

Participants and Design

One hundred and twenty-eight students (86 female and 42 male) from the University of Kent participated for course credits. The study measured trait dominance and assigned participants randomly to the ease of retrieval conditions (number of arguments: few vs. many arguments). One week later participants completed the same dependent measures as in Time 1 (T1).

Procedure and Materials

Trait dominance scores were obtained from a mass-test at the beginning of the academic year, using the Revised Interpersonal Adjective Scale (IAS-R; Wiggins et al., 1988). The scale consists of eight adjectives (e.g., *firm, assertive*), which were embedded in filler-items (see also Appendix 1). Participants rated how accurately the adjectives described them on an 8-point scale ranging from 1 (*extremely inaccurate*) to 8 (*extremely accurate*).

Upon arrival to the experiment, participants learned that they would be involved in two separate studies, the first being concerned with the design of a larger survey, and the second with the validation of scales. Participants were asked to complete a booklet that contained all experimental materials. To reinforce the cover-story the booklet consisted of two different parts, separated with coloured sheets. The first part manipulated ease of retrieval, asking participants to generate arguments in

favour of introducing biometric ID cards. The second part contained the dependent measures. Participants were informed that the study examines people's views about current issues and that their answers will help to design a questionnaire for a later survey. Participants were asked to read the following information carefully:

> Recently the government launched an ID [identification] card bill. This bill pushes for the introduction of a national identity card, which presents one component of the government's legislative plan that puts an emphasis on security measures. The new ID cards contain biometric information stored on a microchip. This includes fingerprints, facial scans and iris scans, all of which are unique to each individual. A national database would be created holding personal information such as names, addresses, and biometric information for all cardholders. The scheme elicited much controversial reactions.

After reading this information participants were asked to generate either three arguments or seven arguments in favour of the new identity card. The number of arguments was chosen based on a pre-test in which participants ($N = 20$) were asked to generate as many distinct arguments as they could think of ($M = 4.45$, $SD = 1.50$). After generating the arguments participants in the main study responded to two items measuring their attitudes towards the new biometric identification cards. The first item asked participants to indicate their attitude towards the new IDs (1 *negative* to 9 *positive*), and the second item assessed how much participants would welcome the introduction of the new ID cards (1 *not at all* to 9 *very much*). Participants also indicated their current mood on four 7-point scales, ranging from –3 (*very bad; very sad; very discontent; very tense)* to +3 *(very good; very happy, very content; very relaxed).* A subsequent thought-listing task instructed participants to list any thoughts they had while they were generating their arguments in favour of the new identification cards. Participants received a separate sheet for each argument, and were instructed to write each distinct thought they had on a separate line. For each

argument participants could write down up to five thoughts. They were assured that any thought was of relevance, and that there were no right or wrong answers.

A questionnaire was sent to participants after one week had elapsed, asking them to rate their attitudes towards the introduction of the biometric ID card on the same rating scales used at T1. Ninety participants (70.31%) replied to this follow-up questionnaire. A written debrief was subsequently e-mailed to all participants involved in the study.

Results

Manipulation Check

Participants indicated how easy or difficult it was for them to generate the requested number of arguments, on a 9-point scale ranging from 1 (*very easy*) to 9 (*very difficult*). Scores were reverse coded and subjected to an independent *t* test, which confirmed that generating three arguments was indeed perceived to be easier than generating seven arguments (*M*s = 4.72 vs. 3.59), $t(126) = 3.13$, $p = .002$.

Attitudes at Time 1

The eight items of the dominance scale were first combined into a single score ($\alpha = .83$; $M = 4.87$, $SD = .1.07$). The two items measuring attitudes at T1 were highly correlated and also collapsed to form a single score for participants' attitudes ($\alpha = .98$; $M = 5.20$; $SD = 2.17$). The standardized dominance scores, number of arguments, as well as the interaction term of those two variables were entered as predictors of participants' attitude score (see Aiken & West, 1991). This analysis yielded a significant main effect of dominance, ß = .19, $p = .029$. The more dominant participants were, the more they welcomed the new identification cards. More important, the expected interaction between trait dominance and number of arguments was significant, ß = -.20, $p = .021$. As can be seen in the top panel of Figure 3,

generating few arguments resulted in a more favourable attitude than generating many arguments for participants high in dominance (+1SD: *M*s = 5.82 vs. 5.38), whereas the opposite tendency was evident for participants low in trait dominance (-1SD: *M*s = 4.54 vs. 4.99). There was no main effect of number of arguments ($t < 1$). The variance explained by the model (7.4%) was significant, $F(3, 124) = 3.32$, $p = .022$. In sum, paralleling the findings obtained in Studies 2-4, these results indicate that trait dominance moderates reliance on the ease of retrieval. The more participants were dominant, the more they were influenced by the experienced ease of retrieval. Conversely, the less participants were dominant, the more they drew on the content of the information they retrieved.

Attitudes at Time 2

Thirty percent of participants did not reply to the Time 2 (T2) measures. This dropout was, however, independent of experimental conditions, $\chi^2(1, N = 128) = .77$, *ns,* and of T1-attitudes towards the biometric ID cards, $t(126) = .45$, *ns*. Responses were, however, related to participants' dominance scores, $t(126) = 2.03$, $p = .044$. Unexpectedly, respondents were on average more dominant than non-respondents (*M*s= 4.97 vs. 4.55). The greater action orientation commonly observed in powerful individuals (e.g., Galinsky et al., 2003; see also Guinote, 2007b) might explain the higher response rate among dominant as compared to less dominant participants. Important for the present purpose, the dropout is unlikely to have produced a biasing effect. Specifically, having dominance scores more tilted towards the high end of the scale does not artificially inflate the interaction between dominance and ease of retrieval.

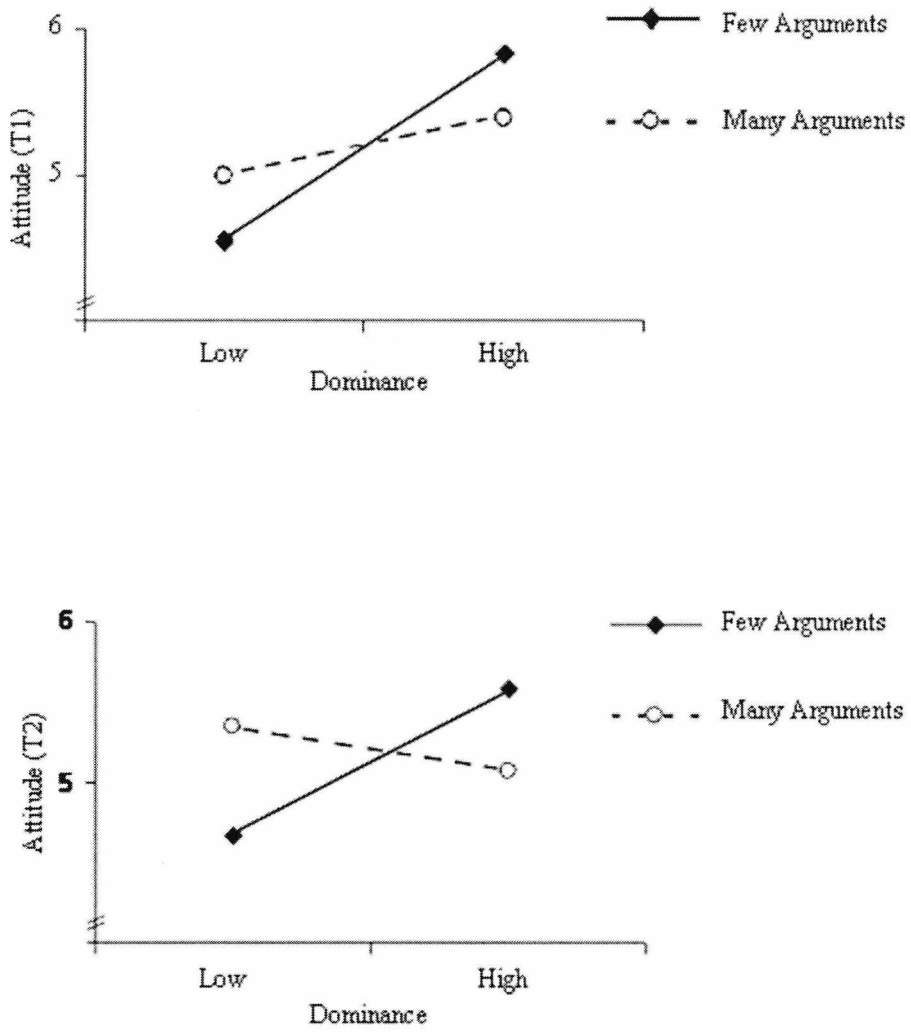


Figure 3. Attitudes towards the introduction of new biometric identification cards as a function of trait dominance and number of arguments (Study 5). Top panel: attitudes at Time 1 (T1); bottom panel: attitudes at Time 2 (T2). *Note:* Higher numbers indicate a more favorable attitude.

At first, the relationship between T1 and T2 attitudes was examined. Participants' evaluations of the identification cards were highly correlated ($r(89) = .88$, $p < .001$), and this association did not vary as a function of dominance, $r(89) = -.06$, *ns*. This result indicates that attitudes were stable over time. Participants'

standardized dominance scores, number of arguments, as well as the corresponding interaction term were then regressed onto the combined T2-attitude scores (α = .97; M = 5.18; SD = 2.05). The analysis revealed that the interaction between trait dominance and number of arguments was significant, ß = -.28, p = .008, which is illustrated in the bottom panel of Figure 1. This indicates that the effect of the initial manipulation of ease of retrieval was still evident after one week had elapsed. No other significant effects were found (ts < 1). The variance explained by the model (8.4%) approached statistical significance, $F(3, 86) = 2.64$, p = .054.

Taken together these results are consistent with the hypothesis that dominant individuals rely more on the ease of retrieval and that ease of retrieval can affect attitudes outside the context in which it was initially operating. The effects of the experimental manipulation of ease of retrieval were still evident after one week had elapsed. This demonstrates that subjective experiences can have enduring effects, and thereby be conducive of stability in individuals' attitudes.

Additional Analyses

As in the previous studies, additional correlational analyses were carried out to examine the relationship between participants' ratings of experienced ease and their judgmental outcomes. A median split was carried out on the dominance measure to compare the responses of participants high and low in dominance. Paralleling the findings obtained in Study 3, there was a significant associations between participants' ratings of experienced ease and their attitudes for participants high in dominance (T1: r(64) = .46, p < .001; T2: r(47) = .41, p = .003). In contrast, this association was not evident for participants low in dominance (T1: r(60) = .17, p = .194; T2: r(39) = -.06, p = .729). Overall, the association between experienced ease

and attitudes was stronger for participants high in dominance compared to participants low in dominance (T1: $Z_{diff} = 1.80, p = .072$; T2: $Z_{diff} = 2.26, p = .024$).

Mood.

The four items assessing mood were highly correlated and collapsed into a single index ($\alpha = .88$; $M = .83$; $SD = 1.12$). An initial correlation analysis revealed a positive association between dominance and elevated mood, $r(127) = .31, p < .001$. Dominant participants were in a better mood than non-dominant participants. However, when controlling for the effects of mood, the joint effect of trait dominance and number of arguments on attitudes remained significant (T1: ß = -.25, $p = .008$; T2: ß = -.30, $p = .008$). These results exclude, therefore, the possibility that mood mediated the effects of dominance on reliance on the ease of retrieval (cf. Kenny et al., 1998).

Counterattitudinal Thoughts

To examine the number of counterarguments generated during the thought listing task, for each participant the total number of supportive, opposing, and neutral (unrelated or indifferent) thoughts were counted. Reliability was established by having a second rater code 2/3 of the total sample ($\alpha = .96$). An index of counter-attitudinal thought-bias was then computed by subtracting for each participant the total number of opposing thoughts from the total number of supportive thoughts. Standardized trait dominance scores, number of arguments, as well as the interaction term between these two factors were then regressed on this index. The results indicate that number of arguments had a significant effect on thought bias, ß = .20, $p = .025$. Participants had relatively more positive thoughts when they generated many as opposed to a few arguments. No other effects were significant ($ts < 1$), which suggests

that differences in the number of counterattitudinal thoughts does not account for the observed relationship between dominance and reliance on the ease of retrieval.

Discussion

The present study examined the implications of reliance on experiences for stability in the judgments of powerful and powerless individuals. The results are consistent with the hypothesis that power induces greater reliance on ease-of-retrieval experiences, and this can have more long term effects than previously considered. In the present study the effects of ease of retrieval were still evident after one week. This suggests that reliance on subjective experiences does not preclude some stability in the judgments and attitudes of powerful individuals. Powerful individuals may form judgments based on previous experiences and evaluations of a judgmental target. In combination with Studies 1-4, these results suggest that powerful individuals are flexible in their use of prior knowledge and momentary experiences as a basis for their judgments (see also Guinote, 2007a). Depending on the circumstances, power can enhance the expression of enduring characteristics and prior knowledge (see Chen et al., 2001; Galinsky et al., in press), and it can strengthen the impact of momentary experiences. This conjecture will be taken up in the general discussion.

Finally, through examining power from an individual difference perspective it was possible to confirm a linear relationship between elevated power and reliance on ease-of-retrieval experiences. Additionally, the present study also contributed to rule out differences in the number of counterattitudinal thoughts as an alternative explanation for the effects of power. This is consistent with Study 2, which found that differences in the content of the generated arguments cannot account for the results. In line with the previous studies, the effects obtained were independent of mood. The

results are best interpreted in terms of a direct effect of power on reliance on ease-of-retrieval experiences.

Study 5 examined the consequences of the present findings for judgmental stability. Study 6 explores the extent to which experiences and declarative information provide powerful and powerless individuals with a sense of certainty in their judgments.

3.3.2. Study 6: Reliance on Experiences and Perceived Certainty

Humans engage in more dispersed and extensive thinking to gain a sense of certainty and control (e.g., Fiske & Dépret, 1996; Fiske & Neuberg, 1990; Heider, 1958; Kelley, 1971; Moskowitz et al., 1999). The present research builds on this basic premise and argues that, because powerful individuals experience high levels of predictability and control, subjective experiences suffice as a source of information to guide powerful individuals' judgments and decisions. In contrast, because powerless individuals lack control, these individuals engage in more circumspect processing and resort to declarative information as a judgmental basis.

Study 6 tested the prediction that powerful individuals derive a sense of certainty from relying on subjective experiences. For these individuals, drawing on declarative sources of information provides little incremental benefit to their levels of certainty and confidence in their judgments. In contrast, reliance on subjective experiences does not satisfy the control-needs of powerless people. These individuals need to resort to declarative sources of information to obtain a sense of certainty and confidence in their judgments.

In the present study participants made decisions on category memberships. Specifically, participants had to decide whether words (e.g., *chair*) belong to a category (e.g., *furniture*) or not. The study manipulated whether decisions were based on subjective experiences (i.e. relying on the felt fit), or based on declarative information (i.e. comparing features of category members). The study assessed participants' levels of confidence and certainty in their decisions. As in Studies 1 and 5, power was operationalized using trait dominance as a proxy for power. It was hypothesized that with increasing levels of dominance participants would be more confident in their decisions following the use of an experience-based decision

strategy. Conversely, with decreasing levels of dominance participants would be more confident using a content-based as compared to an experience-based approach.

Method

Participants and Design

Seventy-two students (54 females and 18 males) participated for entry in a lottery. Data were collected online and participation was confined to University of Kent students aged 18 and above. Only responses from participants who fully completed the online study were considered. The study measured trait dominance and assigned participants randomly to one of the decision strategy conditions (decision strategy: experience-based vs. content-based).

Procedure and Materials

Participants were invited via online forums to take part in a study focusing on individual differences and decision making. Participants could take part at any location that allowed access to the internet.

Participants were informed the study involved two sections. The first part was concerned with individual differences. This part included the dominance subscale of the Revised Interpersonal Adjective Scale (IAS-R; Wiggins et al., 1988) already employed in Studies 1 and 5 (see also Appendix 1). The first part also assessed participants' mood on four 7-point scales, ranging from –3 (*very bad; very sad; very discontent; very tense)* to +3 *(very good; very happy, very content; very relaxed).*

In the second part participants performed a categorization task, which asked them to decide whether a word (e.g., *table*) belongs to a given category (e.g., *furniture*), or whether it does not belong to that category. Participants were presented with a series of thirty exemplar-category pairings. Responses were given by ticking one of two boxes on the screen, labelled 'yes' and 'no'. Categories were *furniture*,

vehicle, and *vegetable*. For each category ten exemplars were presented with varying degrees of representativeness for that category (see Table 5). There was a practice trial consisting of four exemplar-category pairings to become acquainted with the task.

Table 5. Category and Exemplar-Pairings Used in Study 6.

Furniture	Vehicle	Vegetable
Drawer	Skates	Carrot
Fan	Hot Air Balloon	Rice
Curtain	Feet	Parsnip
Sofa	Tractor	Corn
Wallpaper	Bus	Coconut
Painting	Car	Chestnut
Candle	Motorbike	Seaweed
Chair	Escalator	Rhubarb
Telephone	Camel	Grass
Microwave	Truck	Potato

Before participants proceeded with the main trials, their decision strategy was manipulated. Participants instructed to base their decisions on subjective experiences read the following information:

> Your goal for the categorization task is to perform as quickly as possible. The best results are achieved if you trust your intuition and rely on how much a word *feels* like it fits to a particular category. This can be most effectively done by going with your first impression.

In contrast, participants instructed to base their decisions on declarative thought contents were instructed as follows:

> Your goal for the categorization task is to perform as accurately as possible. The best results are achieved if you analyze all aspects that speak in favour or against including a word in a particular category. This can be most effectively done by *comparing features* that other members of this category have in common.

Having read the instructions, participants responded to an open-ended item which asked them to describe the decision strategy they were going to use. This was done to enforce the experimental manipulation, and to assess whether participants had understood the instructions. Participants then performed the main trials of the categorization task. On completion, four items assessed participants' levels of certainty and confidence in their decisions. Participants indicated how well they think they did; how happy they were with their answers; how confident they were their answers were correct; and how they felt about their performance. Answers were given on scales ranging from *very bad, very unhappy, not at all* (1) to *very well, very happy, very much* (9). At the end, participants again completed the same mood measure already employed at the beginning of the study.

Results

Initial inspections of participants' descriptions of their intended decision strategy led to the exclusion of six participants who did not follow instructions.[23] Subsequent analyses are based on the responses of the remaining seventy-two participants.

Manipulation Check

Participants indicated on six 9-point scales whether they had answered to the categorization task based on analyzing the pros and cons for a category membership, based on thinking about common features of members of the same category, whether they had relied on their first impression and how much a word felt like it fit into a category, and whether they tried to answer as accurately as possible, and as quickly as possible. Items were merged into a singled index of experience-based decision

[23] Three participants did not describe any decision strategy, and three participants described a decision strategy that was not in line with the instructions (e.g., 'hope for the best and kick buttock').

strategy after reverse coding items pertaining to content-based deliberation (α = .71, M = 5.27, SD = .93). This index was then subjected to an independent t test, which confirmed that participants in the experience-based condition relied more on their feelings, whereas participants in the content-based condition engaged more in content-based deliberation (Ms = 5.79 vs. 4.71), $t(70) = 6.06$, $p < .001$.[24]

Perceived Certainty

The eight items assessing trait dominance were combined into a single score (α = .84, M = 5.07, SD = 1.10). The four items of perceived certainty were highly correlated and also averaged into a single index (α = .93, M = 6.24, SD = 1.41). A moderated regression was then performed with standardized dominance scores, decision strategy condition, as well as the interaction term of those two variables as predictors of participants' perceived certainty (see Aiken & West, 1991). The analysis revealed a main effect of dominance, β = .35, p = .002. The more participants were dominant, the more they were certain in their answers. Overall, there was also a tendency for a content-based decision strategy to elicit greater levels of certainty than an experience-based decision strategy, β = .20, p = .072. Importantly, these main effects were qualified by the expected interaction between decision strategy and dominance, β = -.21, p = .056. As can be seen in Figure 4, the more participants were dominant, the more they felt confident with using experiences as a source of information (β = .46, p = .004). Dominance did, however, not lead to greater levels of certainty following a content-based decision strategy (β = .18, p = .305).[25] This is consistent with the hypothesis that with decreasing levels of dominance, participants

[24] Both means differed significantly from the scale mid-point ($ps \leq .011$).
[25] The difference between the two slopes did not reach statistical significance ($z_{diff} = 1.22$, p = .222).

are more confident using a content-based as compared to an experience-based decision strategy.

Mood

The four items assessing mood were collapsed into a single score (α = .86, M = .58, SD = 1.29). A Pearson correlation showed that dominance did not affect baseline mood in the present study, $r(70) = 16$, $p = .174$. The effects of dominance can, therefore, not be attributed to differences in mood (cf. Kenny et al., 1998).

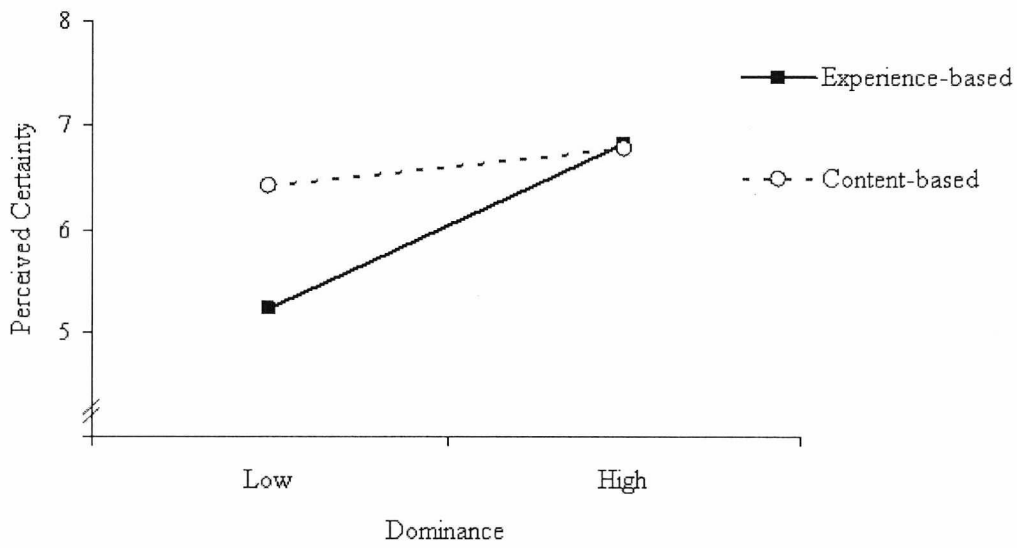


Figure 4: Effects of dominance and decision strategy on levels of perceived certainty (Study 6).

Discussion

In the present study, participants performed a categorization task that involved making decisions on category-memberships of words. Decisions were either based on subjective experiences, or based on declarative knowledge of common features of objects. As predicted, the more participants were dominant, the more they felt certain in their decisions following an experience-based decision strategy. Conversely, the less participants were dominant, the more they felt confident using a content-based as compared to an experience-based decision strategy. Thus, the benefits of following a content-based decision strategy increased with decreasing levels of dominance.

One limitation of the present study is the fact that the manipulation of decision strategy was confounded with different processing goals. Participants in the experience-based condition were asked to perform as quickly as possible, and participants in the content-based condition were asked to perform as accurately as possible. The present results could, therefore, be explained in terms of these different processing goals rather than reliance on experiential and declarative sources of information per se.

However, there is a natural association between processing goals and reliance on different sources of information. While accuracy motivation makes individuals turn to the declarative content of information, fast responses promote reliance on subjective experiences (e.g., Greifeneder & Bless, 2007; Menon & Raghubir, 2003; see also Winkielman et al., 2003). As a result, the two processing goals (speed vs. accuracy) most likely instigated experience-driven and content-driven decision strategies. The results of the manipulation checks lend support to this interpretation. Thus, the present findings are consistent with the hypothesis that power affects the

extent to which people derive a sense of certainty from relying on experiential and declarative sources of information.

Study 6 supports the underlying assumption that subjective experiences suffice as a source of information to guide the judgments and decisions of powerful individuals. For these individuals, relying on declarative information provides little incremental benefit to their levels of certainty. In contrast, subjective experiences do not suffice as a single source of information for powerless individuals. Drawing on declarative knowledge significantly contributes to increase their levels of certainty and confidence in their judgments and decisions.

One truism in psychology posits that humans engage in more extensive thinking to gain a sense of certainty and control (e.g., Fiske & Dépret, 1996; Heider, 1958; Moskowitz et al., 1999). This is consistent with research that shows humans engage in more circumspect information processing when attempts to control important outcomes fail (e.g., Weary et al., 1993), or when they are held accountable for their decisions (e.g, Lerner & Tetlock, 1999). However, previous research only inferred, but has not directly measured changes in people's levels of certainty that resulted from drawing on additional sources of information. The present research confirms that individuals can increase their levels of confidence through more extensive information processing. Furthermore, it appears that powerless individuals have a larger benefit than powerful individuals.

3.3.3 Summary and Outlook

Chapter 3.3. explored the consequences of the greater reliance on subjective experiences found in powerful as compared to powerless individuals. Study 5 focused on judgmental stability and examined the long-term effects of ease-of-retrieval experiences. Following the reasoning that individuals can construe attitude judgments based on evaluations stored in memory (see Judd & Brauer, 1995), Study 5 tested the hypothesis that ease of retrieval can have long-term effects and affect later judgments. Consistent with this hypothesis, Study 5 found effects of ease of retrieval on attitude judgments after a one week delay. The study demonstrates that powerful individuals can construe judgments based on previous experiences and evaluations of the same target. Reliance on subjective experiences does, therefore, not preclude stability in the judgments of powerful individuals. Finally, Study 5 also contributes to confirm a linear relationship between power and increased reliance on the ease of retrieval through examining power from an individual difference perspective.

Study 6 extended these findings by addressing the implications of experience-based and content-based decision making for powerful and powerless individuals' levels of confidence. The study found support for the hypothesis that powerful individuals derive a sense of certainty from relying on subjective experience. In contrast, powerless individuals need to draw on declarative information to achieve comparable levels of confidence in their judgments. This finding not only highlights the implications of reliance on experiences and declarative information for judgmental certainty; it is also consistent with the underlying rationale that the effects of power derive from idiosyncratic control needs of powerful and powerless individuals.

In sum, six studies found consistent support for the hypothesis that power increases reliance on subjective experiences as a source of information. Furthermore,

the present chapter explored the implications of these findings for judgmental stability, and the ways powerful and powerless individuals derive a sense of confidence in their judgments. The subsequent section presents a final set of studies that examines boundary conditions of these effects of power.

3. 4. Establishing Boundary Conditions

Power not only induces a focus on primary sources of information, it also leads to greater flexibility in people's processing orientation (see Guinote, 2007a). For example, although powerful individuals tend to focus their attention on central aspects in the visual field, they are nevertheless able to attend to contextual information if required to do so (see Guinote, 2007c). This flexibility is not confined to visual attention, and occurs equally for higher order reasoning such as the processing of social information (e.g., Overbeck & Park, 2006).

In the present research, power consistently promoted reliance on subjective experiences. However, there is reason to assume that there are boundaries to these effects and powerful individuals may not always draw on subjective experiences. In line with the greater flexibility that has been found in powerful individuals' information processing (see also Guinote, 2007a), powerful individuals should be equally able to resort to declarative information if the situation requires them to do so. This would also be consistent with the results of Study 6, which suggest that powerful individuals can derive equal levels of certainty from experiential and declarative sources of information.

The purpose of the present chapter is to explore boundary conditions of the effects of power on reliance on subjective experiences. Study 7 focuses on the role of the relative informational value of subjective experiences and declarative information, and Studies 8 and 9 examine the consequences of power for reliance on experiences that arise from low-level perceptual processes.

3.4.1. Study 7: Informational Value of Subjective Experiences

Individuals do not always draw on subjective experiences as a source of information. For instance, experiences that are expected are less likely to influence decision processes than experiences that are unexpected (e.g., Hansen & Wänke, in press; Whittlesea & Williams, 2001a, 2001b). This tends to be the case because experiences that match people's expectations are less informative than unexpected experiences (Hansen et al., 2008; Whittlesea & Williams, 1998, 2000). Likewise, experiences that derive from irrelevant sources can be deemed uninformative and may be discarded (e.g., Oppenheimer, 2004; Schwarz & Vaughn, 1998). Thus, although reliance on subjective experiences often constitutes the default process, experiences are less influential when their informational value is low. The purpose of Study 7 is to test the hypothesis that power leads to greater reliance on experiences, unless these experiences are uninformative for the judgment at hand. In the latter case, both powerful and powerless individuals will be inclined to turn to declarative sources of information to inform their judgments.

The present study focused on the informational value of feelings of familiarity in the context of judgments of truth. Specifically, participants read statements on general knowledge issues (e.g., *Vienna is the capital of Austria*), and their task was to decide whether each statement was true or not. In this context, decisions can be made either based on factual knowledge, or based on one's feelings of familiarity. In particular, judgmental targets that elicit feelings of familiarity are more likely to be considered true than judgmental targets that seem unfamiliar (e.g., Kelley & Lindsay, 1993).

The informational value of familiarity experiences depends on the difficulty of the judgments. The informational value is high for difficult judgments (e.g.,

Methuselah was the grandfather of Noah), but low for easy judgments (e.g., *France is member of the EU*). The latter can more readily be made on the basis of factual knowledge. To test the hypothesis that powerful individuals may resort to declarative information in contexts where experiences are less informative, participants in the present study made truth judgments both for easy and for difficult statements.

Feelings of familiarity derive from the experienced ease or difficulty that arises during the processing of target information (e.g, Reber & Schwarz, 1999; Schwarz, 2004; Unkelbach, 2007). For examples, sentences seem more familiar and tend to be trusted more when they have been heard before (e.g., Arkes, Hackett, & Boehm, 1989; Begg, Anas, & Farinacci, 1992; Brown & Nix, 1996), or when they are easy to read (Kelley & Lindsay, 1993; McGlone & Tofighbakhsh, 2000; Reber & Schwarz, 1999). The present study manipulated the ease of processing target information by presenting participants with statements that were written in varying degrees of colour contrasts against a white background. Statements written in high colour contrasts are easier to read and feel more familiar than statements written in low colour contrast. As a result, high contrast statements tend to be trusted more than low contrast statements (e.g., Reber & Schwarz, 1999; Unkelbach, 2007, Hansen et al., 2008).

In the present study participants were assigned to a powerful or a control condition using a semantic priming manipulation of power (Chen et al., 2001). Participants then read easy and difficult statements written in low and high colour contrasts. It was hypothesized that participants primed with power would be more inclined than control participants to consider high rather than low contrast statements to be true. Moreover, in line with the hypothesis that powerful individuals may resort to declarative information if subjective experiences are less informative, it was

expected that power primed participants would only be affected by variations in colour-contrasts when statements were difficult, but not when they were easy.

Method

Participants and Design

Participants were ninety-six students (81 females and 15 males) who participated for partial fulfilment of course requirements. They were randomly assigned to a powerful or a control condition. Participants read statements that were either difficult or easy to identify as 'true' or 'false'. Easy and difficult statements appeared in high and low colour contrasts. As a result, the study employed a 2 (power: powerful vs. control) x 2 (statement difficulty level: easy vs. difficult) x 2 (colour contrast: high vs. low contrast) mixed factorial design with repeated measurement on colour contrast and difficulty.

Procedure and Materials

Participants took part in a study that was described as a quiz. Participants were run in groups of up to six, and were visually separated from one another. Power was manipulated using a word-search task (see Appendix 6). Following Chen and colleagues (2001), participants were given a grid of letters, and were instructed to find and circle ten target-words embedded in the letter matrix. The target words were laid out vertically and horizontally, forward and backward. For participants in the powerful condition six words were power-related (authority, executive, boss, influence, rich, and control) and the remaining four words were neutral (board, coffee, clock, house, chalk). For participants in the control condition all ten words were neutral and unrelated to power. Participants completed the task at their own pace. After completion, they were introduced to the subsequent truth judgment task, which was performed on a computer. Participants were told they would have to decide

whether statements presented on the screen were 'true' or 'false'. The statements consisted of 60 easy statements and 60 difficult statements in total. Half the statements had a clear 'true' status and half a 'false' status. The statements covered a variety of topics (e.g., science, geography, general knowledge) and were taken from Unkelbach (2007). Following a pretest ($N = 20$), eighteen of the easy statements were replaced with new items because they yielded less than 80% correct responses and were therefore deemed too difficult. Moreover, sixteen difficult statements had to be replaced because they yielded more than 80% incorrect responses. Appendix 7 lists the final set of statements used in this study.

The statements appeared randomly in one of three colours: blue, red, or green. Statements written in a high colour contrast against a white background were easy to read, and statements in a low colour contrast were difficult to read (see Table 6, for the range of RGB colour components). Statements with an easy and a difficult truth status were organized in two blocks, separated by a one minute break. Following Unkelbach (2007) easy statements were always presented first, followed by the difficult statements. Each trial started with the appearance of one statement in the middle of the screen. The statement remained on the screen until participants pressed a response key on the keyboard ('m' or 'z' – labelled 'yes, true, or 'no, false'). The truth-status of the answer keys was counterbalanced across participants. The programme started with two practice trials introducing participants to the task.

Table 6. RGB Colour Components Used to Manipulate Ease of Processing (Study 7)

	High Contrast (Easy)			Low Contrast (Difficult)		
Colour	R	G	B	R	G	B
Red	255	100-120	100-120	255	200-220	200-220
Green	100-120	255	100-120	200-220	255	200-220
Blue	100-120	100-120	255	200-220	200-220	255

Note: Across trials values within ranges (i.e. 100-120 and 200-220) were assigned randomly

Results

Response Latencies. Response latencies smaller than 1000ms and larger than 10000ms were identified as outliers (2.5xSD) and removed from the dataset (1.4% of all trials). A 2 (power: high vs. low power) x 2 (statement difficulty: easy vs. difficult) x 2 (colour contrast: high vs. low contrast) mixed analysis of variance revealed that answers to easy statements were volunteered faster than answers to difficult statements (Ms = 2654ms vs. 3394ms), $F(1, 94) = 168.81$, $p < .001$ (see also Table 7). More importantly, participants responded faster to high contrast statements compared to low contrast statements (Ms = 2949ms vs. 3055ms), $F(1, 94) = 22.79$, $p < .001$. Using response latencies as a proxy for ease of processing (see Unkelbach, 2007), this suggests that statements written in a high colour contrast were easier to process than statements written in a low colour contrast. Unexpectedly, the effects of colour contrasts also tended to vary as a function of the priming manipulation of power, $F(1, 94) = 2.77$, $p = .100$. All participants responded faster to high compared to low contrast statements, but this effect was less pronounced for participants primed with power (*M*s = 3094ms vs. 3024ms; $F(1, 94) = 5.00$, $p = .028$) compared to controls (*M*s = 3016ms vs. 2876ms), $F(1, 94) = 21.60$, $p < .001$. No other effect approached

significance (all $ps \geq .172$).[26] These results suggest that priming power might have reduced the effects of the colour contrast manipulation. Still, using response latencies as a proxy for ease of processing, all participants experienced high colour contrasts to be easier than low colour contrasts.

Table 7. Mean Response Latencies for Difficult and Easy Statements Depicted in High and Low Colour Contrasts (Study 7)

	Easy statements		Difficult statements	
Colour contrast	*M*	*SD*	*M*	*SD*
		Powerful		
High contrast	2643	635	3459	821
Low contrast	2722	661	3571	884
		Control		
High contrast	2534	613	3264	792
Low contrast	2722	565	3342	872

Signal Detection Theory (SDT) Analysis. The present data were analyzed using signal detection theory (Green & Sweets, 1966). SDT parameters (D' and β) were calculated from participants 'yes, true' and 'no, false' responses and the corresponding hit rates and false alarms (see Stanislaw and Todorov, 1999). The hit rate quantifies the proportion of correct 'yes, true' responses on trials with true

[26] Additional analyses revealed that type of colour affected response latencies. Participants responded fastest to red colours, and slowest to green colours with blue falling in the middle (Ms = 3043ms vs. 3213ms vs. 3106ms), $F(2, 188) = 14.16$, $p < .001$. Moreover, while red and green colours elicited faster reaction times for high compared to low contrast colours (ts (95) = 8.32 and 5.66, $ps < .001$), colour contrasts did not alter response latencies for blue colours, $t(95) = .18$, $p = .856$. Because type of colour does not affect the interpretation of the results reported hereinafter, this variable is not discussed any further.

statements, and the false alarm rate describes the proportion of 'yes, true' responses on trials involving false statements. Hit rates and false alarm rates were calculated using loglinear transformations (see Hautus, 1995).[27] *D'* denotes the ability to discriminate true and false statements correctly. Higher *d'* values indicate higher discrimination ability and, consequently, a higher portion of correct responses across trials. *B* quantifies response bias, which is mathematically distinct from *d'*. Values less than 1 signify a general bias towards responding 'yes, true', whereas values greater than 1 signify a preference for responding 'no, false'.

Initial inspection of the SDT parameter estimates (*d'* and β) identified twelve outliers (1.6% of all parameter estimates), which were truncated to 2.5xSD to fit the normal distribution. At first, *d'* parameters were investigated (see also Table 8). Participants' ability to discriminate true from false statements was fairly low in the difficult statements condition (*d*s' $\geq$ .28), but all *d*' estimates were above chance level, *t*s(95) $\geq$ 5.29, *p*s < .001. A 2 (power: high vs. low power) x 2 (statement difficulty: easy vs. difficult) x 2 (colour contrast: high vs. low contrast) mixed analysis of variance confirmed that participants were better able to discriminate true and false statements in the easy, as compared to the difficult statements condition (Ms = 2.73 vs. .35), $F(1, 94) = 2025.00$, $p < .001$. Moreover, statements in high colour contrasts tended to elicit more often correct responses than statements shown in low colour contrasts (*M*s = 1.58 vs. 1.48), $F(1, 94) = 3.69$, $p = .058$. This suggests that ease of processing statements affected participants' discrimination abilities. No other effect

[27] The loglinear transformation involves adding a constant (c = .5) to the number of hits and false alarms and a constant (c = 1) to the total number of signal trials (true statements) and noise trials (false statements). This approach is considered the best solution to the problem that an infinite z-score is associated with extreme hit and false alarm rates (rates of '0' and '1'; see Stanislaw & Todorov, 1999).

approached significance, all $ps \geq .192$. Taken together these results speak to the effectiveness of the difficulty manipulation of the statements.

Table 8. D' Parameter Estimates for Easy and Difficult Statements as a Function of Power and Colour Contrasts (Study 7)

	Easy statements		Difficult statements	
Colour contrast	*M*	*SD*	*M*	*SD*
		Powerful		
High contrast	2.85	.56	.40	.50
Low contrast	2.69	.66	.27	.49
		Control		
High contrast	2.64	.66	.44	.41
Low contrast	2.67	.65	.28	.54

Note: Higher *d'* values indicate a higher discrimination ability.

B parameter estimates were submitted to the same mixed analysis of variance described above. The analysis revealed a difference in response bias for difficult and easy statements (*M*s = .97 vs. 1.26), $F(1, 94) = 16.03, p < .001$ (see also Table 9). Further tests for derivation from the neutral point ($\beta = 1$) showed that participants were inclined to classify easy statements as 'false', $|t|(95) = 3.62, p < .001$; while there was a weak tendency to classify difficult statements as 'true', $|t|(95) = 1.81, p = .074$.

As predicted, for difficult statements colour contrasts affected participants' responses. When statements were written in a high contrast and easy to process

participants displayed a bias towards responding 'yes, true' (M = .95), $t(95) = 2.80$, p = .006, for derivations from the neutral point ($\beta = 1$). In contrast, no response bias was evident when difficult statements were written in a low colour contrast (M = .99), $t(95) = .08$, $p = .938$, for derivations from the neutral point ($\beta = 1$). Overall, the effects of colour contrast on participants' responses to difficult statements were, however, not very strong and only marginally significant, $|t|(95) = 1.84$, $p = .068$. As expected, a different picture emerged for easy statements. Here, colour contrast did not alter participants' responses, $|t|$ (95) = 1.28, $p = .204$. Rather, participants tended to respond 'no, false' to all easy statements, regardless of whether statements were written in a high or a low colour contrast (Ms = 1.34 and 1.18), $|t$s| (95) = 3.29 and 2.09, ps = .001 and 039, respectively for derivations from the neutral point ($\beta = 1$). The differential effects of colour contrast on participants' responses to easy and difficult statements were reflected in a marginal significant interaction between colour contrast and statement difficulty, $F(1, 94) = 2.90$, $p = .092$. Taken together, these results are consistent with the conjecture that experiences are less informative for easy as compared to difficult judgments. Participants tended to trust difficult statements that were easy rather than difficult to process. Conversely, processing ease did not affect participants' judgments when statements were easy and factual knowledge could be readily retrieved. Of special importance, the effects of processing fluency did not vary as a function of power, Fs < 1. Contrary to predictions, power did not affect participants' response bias across conditions, ps $\geq$ .125.

Table 9. *B* Parameter Estimates for Easy and Difficult Statements as a Function of Power and Colour Contrasts (Study 7)

	Easy statements		Difficult statements	
Colour contrast:	M	SD	M	SD
		Powerful		
High contrast	1.47	1.12	.96	.21
Low contrast	1.26	.96	.98	.21
		Control		
High contrast	1.21	.88	.94	.13
Low contrast	1.10	.71	1.01	.21

Note: β values smaller than 1 indicate a bias towards responding 'yes, true', and values larger than 1 indicate a bias towards responding 'no, false'.

Discussion

Study 7 explored boundary conditions of the effects of power on reliance on subjective experiences. The study focused on the consequences of ease of processing for judgments of truth. When processing of target information is easy individuals tend to trust this information more than when processing of target information is difficult (e.g., Kelley & Lindsay, 1993; Reber & Schwarz, 1999). The present study tested the hypothesis that power increases the effects of ease of processing when judgments are difficult and subjective experiences informative. However, when judgments are easy and more readily made on the basis of factual knowledge, then power would not lead to greater reliance on subjective experiences.

Following previous research (e.g., Unkelbach, 2007; Reber & Schwarz, 1999), Study 7 used colour contrasts to manipulate participants' experiences associated with

the processing of target information. Statements written in a high colour contrast were easier to process, and more likely to be considered true than statements in a low colour contrast. As predicted, this effect of ease of processing was only evident for difficult but not for easy statements. However, contrary to predictions, power did not alter the effects of processing ease. Power primed participants and control participants did not differ in their responses.

The absence of the predicted effect also draws attention to the statistical power of the present research design. Assuming there is a linear relationship between power and reliance on subjective experiences, then differences to a neutral condition are smaller and more difficult to detect than differences to a powerless condition. However, the present research design was able to detect relatively small effect sizes of $f = .19$ with satisfying Type II error levels ($\beta = .20$; Faul, Erdfelder, Lang, & Buchner, 2007). Also inspection of the directions of the means suggests that the present study does not suffer from an underpowered research design.

Another explanation for the null results pertains to the effectiveness of the experimental manipulations of power and of subjective experiences. The present study employed a semantic priming manipulation of power, which might be more appropriate to tap into constructs associations (see Chen et al., 2001) than to examine power-related response tendencies. Although there is some evidence that semantic priming can elicit response tendencies associated with the experience of power (e.g., Smith & Trope, 2006), the mechanisms underlying these effects are not entirely clear (see also Bargh, 2006).

With regard to the manipulation of ease of processing target information, colour contrasts yielded only weak effects ($ds \leq .25$), considerably smaller than the large effect sizes ($ds > 1$) obtained in previous research (e.g., Unkelbach, 2007). Also,

colour contrasts did not yield consistent effects across colour types (see also Footnote 23), which aggravates concerns about the effectiveness of the manipulation. Taken together, problems associated with the manipulation of the experimental variables might have contributed to the lack of results in the present study.

Finally, the present study not only manipulated the informational value of subjective experiences, but it also evoked a new type of subjective experiences that derived from the processing of visual information. Experiences of ease or difficulty that arise from low-level perceptual processes are known as *perceptual fluency* experiences (e.g., Jacoby, Woloshyn, & Kelley, 1989; Winkielman et al., 2003). Perceptual fluency is thought to operate in the same manner as other cognitive experiences such as the ease of retrieval (e.g., Alter & Oppenheimer, 2008; Briñol, Petty, & Tormala, 2006; Schwarz, 2004). Yet, the failure to obtain the predicted effects of power might also be an indication that the effects of power do not extend to the types of experiences evoked in the present study.

An important limitation of the present study is that it introduced several new variables (e.g., semantic priming of power; manipulation of subjective experiences), and a new judgmental domain (judgments of truth) at the same time. Theoretically, the absence of an effect of power in the present study could be attributed to any of theses factors.

To summarize, the present study tested the hypothesis that power increases the effects of ease of processing target information in judgments of truth when judgments are difficult and subjective experiences informative. However, when judgments are easy and more readily made on the basis of factual knowledge, then powerful and powerless individuals alike would resort to declarative information as a basis for their

judgments. Contrary to these predictions, power did not alter the effects of ease of processing in the present study.

The failure to observe the predicted effects of power could derive from limitations associated with the effectiveness of the experimental manipulations of power and ease of processing. Yet, the results could also indicate that power does not increase reliance on subjective experiences that arise from the processing of visual information. Through introducing several new variables at the same time, the absence of an effect of power in the present study cannot be ascribed to a single cause.

Study 8 was conducted to address these limitations. This study focused specifically on the consequences of power for reliance on perceptual fluency experiences.[28] The aim of Study 8 was to see whether the effects of power on increased reliance on subjective experiences extend to experiences that arise from the processing of visual information.

[28] An alternative research strategy would have been to examine the informational function of subjective experiences in modification of the ease-of-retrieval paradigm. However, preference was given to further explore the effects of power on perceptual fluency as the more pressing research avenue.

3.4.2. Study 8: Perceptual Fluency and Attitude Judgments

The present study explored the consequences of power for reliance on perceptual fluency. The study builds on Study 7, which had failed to find effects of power on reliance on experiences that derived from perceptual fluency. Study 8 employed a modified version of the ease-of-retrieval paradigm (see Briñol et al., 2006), to allow a comparison of the results with the findings of Studies 2-5. Specifically, following an episodic priming manipulation of power or powerlessness, participants in the present study read a news report that dealt with increases in Closed Circuit Television (CCTV) surveillance. They then generated arguments against such an increase in surveillance. As in Study 7, the present study instigated perceptual fluency experiences through variations in colour contrasts. Specifically, the news report, as well as participants' arguments appeared either in a low colour contrast, or in a high colour contrast against the white background. Participants then indicated their attitudes towards an increase in CCTV surveillance.

While Studies 2-5 instigated ease-of-retrieval experiences through the number of arguments people retrieved (see Schwarz et al., 1991), the present study manipulated ease of retrieval through variations in colour contrast while holding the number of arguments constants. Specifically, people tend to attribute perceptual fluency experiences (i.e. experiences of ease or difficulty to arise from reading) to the ease of retrieval of target information. Consequently, target evaluations tend to correspond to the direction of the retrieved information when fluency is high, but they tend to contradict the direction of the retrieved information when fluency is low (see Briñol et al., 2006). If power increases reliance on experiences that arise from perceptual fluency, then the evaluations of powerful participants should be more affected by variations in the colour contrasts than the evaluations of powerless

participants. However, if power does not lead to greater reliance on experiences that derive from perceptual fluency, then power should be unrelated to the effects of colour contrasts in this modified ease-of-retrieval paradigm.

Method

Participants and Design

Sixty-two students (50 females and 12 males) from the University of Kent participated for course credits. They were randomly assigned to the conditions of a 2 (power: powerful vs. powerless) x 2 (colour contrast: high vs. low contrast) between-subjects factorial design.

Procedure and Materials

The study took place in sessions with up to six participants. Upon arrival participants were seated in front of computers, visually separated from each other. They were informed that the study involved people's perceptions of public policy issues. As part of an unrelated task, participants first completed a priming manipulation, which asked them to recall a past situation in which they were powerful, or in which they were powerless (see Galinsky et al., 2003; see also Appendix 4). Participants spent 7 minutes on this task. Next, they completed an electronic questionnaire on the computer. Participants first read the following scenario extracted from a news report that dealt with CCTV surveillance:

> A report funded by the Information Commissioner's Office concludes that routine monitoring and surveillance is increasing in UK. Currently there are an estimated 4.2 million CCTV [Close Circuit Television] cameras operating in Britain. An individual can be captured on up to 300 cameras each day. Supporters of CCTV surveillance maintain that CCTV has been a success in dealing with crime. The independent watchdog warns the level of CCTV surveillance will grow in the next 10 years.

After reading this background information, participants generated three arguments against an increase of CCTV surveillance in the UK. The news report and the number of arguments were chosen based on a pretest ($N = 17$), which suggested that baseline attitudes were fairly balanced ($M = 4.53$, $SD = 1.27$, on a 9-point scale) and generating three arguments would constitute a moderately engaging task. Following Briñol and colleagues (2006), perceptual fluency was manipulated by having the news report, as well as participants' arguments appear in a low colour contrast against the white background, or in a high colour contrast (see Table 10).[29] The questionnaire appeared in one of three colours (blue, red, and green), counterbalanced across participants. Following the generation of arguments, participants rated their attitudes towards an increase in CCTV surveillance on a 9-point scale ranging from *negative* (1) to *positive* (9). They also indicated how much they would welcome such an increase in surveillance on a scale ranging from *not at all* (1) to *very much* (9). Finally, participants noted down what they thought were the aims of the study, and if they had noticed anything strange or unusual. At the end, participants were thanked and debriefed.

[29] Following Briñol and colleagues (2006), both the background information as well as participants' arguments were displayed in the same colour contrasts. Perceptual fluency can induce greater liking independent of the retrieval of target information (e.g., Reber, Schwarz, & Winkielman, 1998). Thus, the original paradigm by Briñol and colleagues confounds more direct hedonic effects of perceptual fluency, and indirect effects that operate through the attribution of perceptual fluency experiences that to the ease-of-retrieval. The present study overcomes this confound through having participants generate arguments *against* an increase in CCTV surveillance. Hedonic effects of processing fluency would result in more favourable attitudes in the high as compared to the low fluency condition, whereas the opposite pattern of results can be expected if fluency experiences are attributed to the ease of retrieval of target information.

Table 10. RGB Colour Components Used to Manipulate Processing Fluency (Study 8)

	High Contrast (Easy)			Low Contrast (Difficult)		
Colour	R	G	B	R	G	B
Red	200	0	0	255	220	220
Green	0	200	0	220	255	220
Blue	0	0	200	220	220	255

Results

Although a number of participants remarked on the colours of the questionnaire, none of them correctly guessed the purpose of the study. Data from four participants were lost due to technical problems, and three participants could not be assigned to their power conditions because they failed to enter their participation number correctly. Subsequent analyses are based on the data from the remaining fifty-five participants.

Manipulation Checks

After the written report of a past instance, participants indicated on a 9-point scale (ranging from *not at all* to *very much*) how much they felt in charge in the situation they described in their essay. Participants in the powerful condition felt more in charge of the situation than participants in the powerless condition (*M*s = 7.36 vs. 2.78, *SD*s = 1.28 vs. 1.65), $t(53) = 11.52$, $p < .001$. This result suggests that the manipulation was successful in inducing instances where participants felt powerful or powerless.

To see whether participants experienced a difference in their feelings of ease or difficulty, they also rated how easy or difficult it felt for them to generate the

arguments on a scale ranging from *very difficult* (1) to *very easy* (9). A 2 (power: powerful vs. powerless) x 2 (colour contrast: high vs. low contrast) between subjects analysis of variance was conducted on this measure. The analysis yielded no significant effects (Fs < 1). This result indicates that participants were not aware of perceptual fluency experiences that derived from variations in colour contrasts.[30]

Attitudes

Initial inspection of the results suggested that the type of colour (green, blue, and red) did not alter the effects of the experimental variables. Consequently, this variable was dropped from subsequent analyses.

The two measures of participants' attitudes towards an increase in CCTV surveillance were highly correlated and collapsed into a single attitude score (α = .94, M = 5.23, SD = 1.93). This score was subjected to a 2 (power: powerful vs. powerless) x 2 (colour contrast: high vs. low contrast) between subjects analysis of variance. None of the effects was statistically significant, all ps ≥ .158. However, additional analyses showed that powerful participants' responses were completely unaffected by variations in colour contrasts (Ms = 5.16 vs. 5.21), $t(26) = .07$, $p = .946$; whereas powerless participants tended to respond less favourably when fluency was high rather than low (Ms = 6.21 vs. 4.78), $t(25) = 2.02$, $p = .055$ (see also Table 11). This suggests that power did not increase reliance on perceptual fluency

[30] Previous research did not employ explicit manipulation checks of perceptual fluency (cf. Briñol et al., 2006). Because perceptual fluency can affect judgments outside awareness (e.g., Winkielman et al., 2003), the absence of an effect of colour contrasts does not imply that the manipulation was unsuccessful in inducing differential fluency experiences. Using reaction times as an indirect measure of processing ease, previous research confirmed that the colour contrasts used in the present study typically instigate differential processing experiences (see Unkelbach, 2007; Reber & Schwarz, 1999).

experiences.[31] If anything, the results point out that the evaluations of powerless, but not the evaluations of powerful participants, were affected by perceptual fluency. The interaction between colour contrasts and power did, however, not reach statistical significance, $F(1, 51) = 2.05$, $p = .158$.

Table 11. Attitudes as a Function of Power and Processing Fluency (Study 8).

	Powerful		Powerless	
Colour contrast:	*M*	*SD*	*M*	*SD*
High contrast	5.21	2.23	4.77	1.41
Low contrast	5.16	1.79	6.21	2.28

Discussion

The present study examined the consequences of power for reliance on experiences that derive from perceptual fluency in a modified version of the ease-of-retrieval paradigm (see Briñol et al., 2006). Participants in the present study generated arguments against an increase in CCTV surveillance. The study instigated perceptual fluency experiences through variations in colour contrasts. Specifically, participants' arguments appeared either in a low colour contrast, or in a high colour contrast against the white background. In this modified ease-of-retrieval paradigm, experiences elicited from perceptual fluency tend to be attributed to the ease of retrieval.

[31] This conclusion is prone to Type II error. However, the direction of the marginal means is in opposition to what one would expect if power led to an increase in the effects of processing fluency. Thus, although the present research design would normally require double the sample size to detect medium sized effects ($f = .25$), the present findings are nevertheless consistent with the conclusion that power did not augment the effects of processing fluency.

Consequently high and low fluency tend to elicit differential outcome evaluations (see Briñol et al., 2006).

The results indicate that perceptual fluency only affected the evaluations of powerless, but not the evaluations of powerful participants. This suggests that power does not induce greater reliance on perceptual fluency experiences. This finding is consistent with the results of Study 7 and suggests that the effects of power on reliance on subjective experiences do not extend to all types of experiences. In particular, while Studies 2 to 5 observed a stable and consistent effect of power on ease-of-retrieval experiences, it appears that these effects do not extend to experiences of ease or difficulty that derive from the processing of visual information.

The question arises why the effects of power do not seem to extend to perceptual fluency experiences. One reason could be that experiences mediated through colour contrasts are more subtle than the experiences that are elicited through retrieving arguments in the standard ease-of-retrieval paradigm. This would be consistent with the results of the manipulation checks, which showed that participants were not aware of the experienced ease or difficulty that resulted from perceptual fluency (Study 8), but they were conscious about their ease-of-retrieval experiences in the previous studies (Studies 3-5).

Because the effects of power on greater reliance on subjective experiences are thought to occur as a result of the primacy of experiential sources of information, it is possible that power does not lead to greater reliance on experiences that are subtle and do not have the immediacy that is characteristic for other types of experiences. Power may thus only enhance the effects of subjective experiences that capture people's focus of attention (see Albarracín & Kumkale, 2003, for a similar position on the role

of affect in persuasion). Thus, qualitative differences could contribute to the differential effects of power on perceptual fluency and ease of retrieval.[32]

Another important difference pertains to the processes that underlie the effects of perceptual fluency and ease of retrieval. In Studies 7 and 8, perceptual fluency arose from an extraneous sources (colour contrasts), while ease-of-retrieval experiences were the result of internal processes (memory retrieval). Consequently, the effects of perceptual fluency hinged on misattribution processes. Specifically, for perceptual fluency to exert its influence, experiences that arose from an external source had to be attributed to internal memory-retrieval processes. The effects of ease of retrieval did not require such a misattribution to occur.

Because power enhances the ability to focus on central aspects and to ignore peripheral information (e.g., Guinote, 2007a; Smith & Trope, 2006), it is possible that the absence of an effect of power on reliance on perceptual fluency reflects, in reality, an effect of power on misattribution processes. That is, powerful individuals might be less inclined to mistake experiences that derive from extraneous sources for experiences that arise internally.

Study 9 was conducted to explore these conjectures. The study was designed to examine whether or not the differential effects of power could be explained by the different processes that underlie the effects of perceptual fluency and ease-of-retrieval experiences.

---

[32] Qualitative differences might also be linked to the fact that ease-of-retrieval experiences derive from high order, conceptual processes, whereas perceptual fluency derives from lower order perception. This point will be taken up later in the general discussion.

3.4.3. Study 9: Perceptual Fluency and Liking

The purpose of the present study was to further explore the boundary conditions of the effects of power on increased reliance on subjective experiences. Study 9 examined whether the absence of the effects of power on perceptual fluency can be explained by the presence of misattribution processes. Specifically, it is possible that power did not lead to reliance on perceptual fluency experiences in Studies 7 and 8 because experiences derived from extraneous sources (here: colour contrasts) that were irrelevant for the judgment at hand.

To address this explanation, the present study focused on the consequences of perceptual fluency for hedonic judgments. Target stimuli that are perceived more fluently tend to elicit more positive evaluations (see Winkielman et al., 2003, for a review). These effects of fluency can be observed at physiological levels whereby fluent perception activates facial muscles associated with positive affect (Winkielman & Cacioppo, 2001). Fluency that arises from the perception of a judgmental target produces hedonic effects, which do not require the operation of misattributions to occur. Therefore, focusing on these effects allows examining whether power increases reliance on experiences that derive from perceptual fluency in the absence of misattribution processes.

Participants in Study 9 were presented with a series of pictures of circles. The circles varied in their levels of colour-contrast against a white and a black background (see Reber et al., 1998). If power promotes reliance on experiences that derive from perceptual fluency, then there should be a stronger association between the colour contrasts and the liking ratings of powerful as compared to powerless individuals. However, if the effects of power do not extend to perceptual fluency experiences, regardless of whether misattribution processes are involved or not, then one would

expect no difference in the liking ratings of powerful and powerless individuals as a function of colour contrasts.

Method

Participants and Design

Twenty-seven students (17 females, 9 males, and 1 unknown gender) from the University of Oxford participated on a voluntary basis. They were randomly assigned to the conditions of a 2 (power: powerful vs. powerless) x 2 (background colour: white vs. black) mixed factorial design.

Procedure and Materials

Participants took part individually and were approached in a student café and in study areas. Participants were informed the study involved two separate parts, one focusing on social perception, and the other one examining how people form preferences for images. Participants first completed an episodic priming manipulation of power, which asked them to recall a situation in which they were powerful, or in which they were powerless (see Galinsky et al., 2003). Participants were given 5 lines to describe the situation briefly. As part of the power manipulation they then completed the positive-negative affect scale (PANAS) (Watson, Clark, & Tellegen, 1988), which asked participants to rate how they felt when they were in the powerful or in the powerless situation. The scale consists of twenty items measuring positive (*interested, excited, strong, enthusiastic, proud, alert, inspired, determined, attentive, active*) and negative affect (*distressed, upset, guilty, scared, hostile, irritable, ashamed, nervous, jittery, afraid*).[33]

---

[33] Powerful and powerless participants did not differ in their reports of positive affect (*M*s = 3.28 and 2.94, respectively), $t(25) = -1.25$, $p = .223$, but powerful participants reported lower levels of negative affect than powerless participants (*M*s = 1.88 and 2.38), $t(25) = 2.13$, $p = .043$. Because inclusion of retrospective negative affect does not alter the results reported hereinafter, this variable is therefore not considered any further.

Next, participants were introduced to what was described as a study on aesthetic judgments. Participants were presented with 20 Din A4 sized pictures, one at a time. The pictures were laminated and showed circles (5cm diameter) appearing in the centre of the page. Ten circles with graytones ranging from 10% to 100% in 10% intervals were imprinted on a white background, and ten circles with graytones ranging from 0% to 90% in 10% intervals were imprinted on a black background (see Appendix 8). Participants were instructed to indicate how much each of the circles appealed to them. To indicate their liking they then rated each picture on a scale ranging from 1 (*not at all pretty*) to 9 (*very pretty*) (see also Appendix 9). The pictures were presented randomly in two blocks. Each block consisted of pictures with the same background colour. The order of the two blocks was counterbalanced across participants. Participants rated the pictures at their own pace. Only one picture was visible at a time and they were not permitted to skip back to a previously seen picture. Participants were assured there were no right or wrong answer. On completion, participants were thanked and debriefed.

Results

Manipulation Check

Participants rated on a 5-point scale (ranging from *not at all* to *extremely*) how domineering they felt in the situation they described in their essay. An independent-samples *t*-test revealed that participants in the powerful condition felt more domineering than participants in the powerless condition (*M*s = 3.17 vs. 1.87), $t(25) = -3.21$, $p = .004$. This result suggests that the manipulation was successful in inducing instances where participants felt powerful or powerless.

Liking Ratings

For each participant, colour contrasts were regressed on liking ratings to derive an index of the extent to which participants' liking judgments were influenced by perceptual fluency. This was done for each background colour separately (see Reber et al., 1998). Initial inspection of the regression coefficients revealed a significant relationship between colour contrasts and participants' liking ratings (M_{β} = .30), $t(26) = 3.73$, $p = .001$, for derivations from neutral ($M_{\beta} = .00$). In line with previous theorizing (see Reber et al., 1998), this suggests perceptual fluency exerted its predicted effect on participants' liking ratings. The standardized regression weights were then subjected to a 2 (power: powerful vs. powerless) x 2 (background colour: white vs. black) mixed analysis of variance with background colour as within-subjects factor. The analysis yielded a significant main effect of colour background, indicating that perceptual fluency had a stronger impact on liking judgments when the circles were embedded in a black, as opposed to a white colour background, (*M*s = .48 vs. .09), $F(1, 25) = 8.18$, $p = .008$. More importantly, a main effect of power indicates that the liking judgments of power*less* individuals correlated more strongly with colour contrasts than the liking judgments of powerful individuals (*M*s = .48 vs. .08), $F(1, 25) = 7.41$, $p = .012$ (see also Table 12). The interaction between power and background colour did not reach significance, $F(1, 25) = 2.43$, $p = .131$. These results suggest that elevated power did not augment the effects of perceptual fluency on participants' liking ratings. If anything, the opposite tendency was evident and powerless participants were more affected by variations in colour contrasts than powerful participants.

Table 12. Mean Standardized Regression Weights Predicting Liking Judgments of Circles from Colour Contrasts (Study 9)

	Powerful		Powerless	
Background colour	*M*	*SD*	*M*	*SD*
Black	.38	.52	.57	.58
White	-.22	.57	.39	.39
Combined	.08	.38	.48	.38

Discussion

Participants in the present study indicated their liking of circles with varying degrees of contrast against a dark and a light background. Circles with higher contrasts tend to elicit greater liking because the experience of fluency is hedonically marked (Reber et al., 1998). Unlike Studies 7 and 8, the present study involved perceptual fluency experiences that did not require a misattribution process to exert an influence on people's judgments. Thus, the present study was intended to address the question whether power increases reliance on experiences that arise from perceptual fluency in the absence of misattribution processes.

In the present study the liking ratings of power*less* participants tended to be more affected by variations in colour contrasts than the liking judgments of powerful participants. This suggests that power does not increase reliance on perceptual fluency experiences, regardless of whether these experiences operate through a process of misattribution or not. Accordingly, different underlying processes seem an unlikely account for the finding that power increases reliance on ease-of-retrieval experiences,

but does not augment the effects of perceptual fluency. The present findings are more consistent with the interpretation that qualitative differences may account for the differential effects of power on reliance on subjective experiences. In particular, power might not increase reliance on experiences that are subtle and that bypass powerful individuals' processing focus. This point will be taken up in the later general discussion.

Notably, the present study found that the target evaluations of powerful participants appeared to be less influenced by perceptual fluency than the target evaluations of powerless individuals. This parallels the results of Study 8, which observed that powerless participants were affected by variations in colour contrasts, whereas no such effect was evident for powerful participants. These results could be seen as an indication that elevated power actually *reduced* the effects of perceptual fluency.

Theoretically, it is conceivable that power increases reliance on subjective experiences in some contexts, while in other contexts it reduces the impact of subjective experiences. This would be consistent with the greater variability and context-sensitivity that is most characteristic of the effects of power (see Guinote, 2004, for a discussion). In contexts where subjective experiences are secondary and other information is more accessible (e.g., goal-relevant declarative information), power should make individuals more attuned to non-experiential information.

However, the conclusion that power increases reliance on some subjective experiences, while it reduces the impact of other experiences is too preliminary. First, the effects were not consistent and Study 7 did not observe a reduction in the effects of processing fluency as a function of power. Second, Studies 8 and 9 did not control for the duration of stimulus presentation. Thus, it is possible that powerful and

powerless participants in these studies differed in the extent to which they were subjected to perceptual fluency. This would be in line with Study 7 which found that the response latencies of control participants were more affected by colour contrasts than the response latencies of participants primed with power. Because power increases, and powerlessness decreases focus of attention to central aspects in the visual field (see Guinote, 2007c), the visual processing orientation of powerless individuals might have strengthened fluency experiences that derived from colour contrasts. Differences in baseline subjective experiences may therefore contribute for the inversed pattern of results that was obtained in Studies 8 and 9. This concern is aggravated by differential effects of power on the manipulation check of experienced ease in Study 8, whereby powerless individuals appeared to be more affected by variations in colour contrasts than powerful individuals. In addition, Study 9 did not include a measure of participants' experiences associated with the perception of the circles. Hence, it is possible that powerful and powerless participants differed in their subjective experiences in this study.

Taken together, more research is required to establish whether power reduces the effects of perceptual fluency. However, the present findings are consistent with the interpretation that the effects of power on increased reliance on subjective experiences may not extent to experiences that arise from perceptual fluency. This qualifies the findings of Studies 1-6 and makes an important contribution towards establishing boundary conditions of the phenomenon.

3.4.4. Summary and Outlook

Chapter 3.4. examined boundary conditions of the effects of power on reliance on subjective experiences. Study 7 examined the role of the informational value of subjective experiences. The study tested the hypothesis that power increases reliance on subjective experiences in a context where experiences are informative, but it would not lead to greater reliance on experiences in a context where experiences are less informative and judgements can be made more readily based on other information (e.g., retrieval of factual knowledge). The study focused on the effects of experiences of ease or difficulty in judgments of truth. Experiences were manipulated through variations in perceptual fluency that was operationalized with colour contrasts. Contrary to predictions, power did not lead to greater reliance on experiences that derived from perceptual fluency, regardless of the informational value of subjective experiences.

Building on these findings, Study 8 further explored the consequences of power for reliance on experiences that derive from perceptual fluency. The study circumvented several limitations of Study 7 and manipulated fluency experiences in a modified version of the ease-of-retrieval paradigm (see Briñol et al., 2006). Participants generated arguments that appeared in a high or a low colour contrast on a computer screen, thereby instigating experiences of ease or difficulty. The study found that perceptual fluency only affected the judgments of powerless participants, but not the judgements of powerful participants.

Finally, Study 9 examined whether the finding that power did not increase reliance on perceptual fluency could be attributed to the presence of a misattribution process. Extending Studies 7 and 8, the study focused on direct hedonic effects of perceptual fluency that are elicited from a judgmental target and operate independent

from misattribution processes. Participants indicated their liking of circles with varying degrees of contrast against a dark and a light background. The study found that perceptual fluency affected more the liking judgments of powerless as compared to powerful participants. This result supports the conclusion that power does not increase reliance on experiences that derive from perceptual fluency, regardless of whether perceptual fluency operates through a process of misattribution or not.

Taken together, Studies 7-9 make an important contribution to establish boundary conditions of the effects of power. In combination, these studies suggest that the effects of power do not extend to experiences that derive from perceptual fluency. The present findings are consistent with the interpretation that the differential effects of power might be due to qualitative differences between different types of subjective experiences. In particular, power might not increase reliance on experiences that are subtle and that bypass powerful individuals' processing focus.

In summary, the present chapter contributed to the present research through examining boundary conditions of the effects of power. The subsequent general discussion summarizes the present research and discusses in greater depth limitations and implications of the present work.

CHAPTER 4: GENERAL DISCUSSION

4.1. Overview

This chapter reviews the main findings of the current work. Chapter 4.2. focuses on the basic relationship between power and reliance on subjective experiences, on the implications of this association for judgmental stability and certainty, and finally on the boundaries of the effects of power. Chapter 4.3. then turns to limitations and alternative explanations for the present findings. Chapter 4.4. concludes with highlighting practical and theoretical implications of the present research.

4.2. Review of the Present Research

4.2.1. Power and Reliance on Subjective Experiences

The present research examined the hypothesis that power increases reliance on subjective experiences as a source of information in judgments and decisions. This proposal derives from the assumption that powerful individuals tend to process information more selectively, focusing on primary sources of information (e.g., Guinote, 2007a, in press). Conversely, powerless individuals tend to engage in compensatory strategies, focusing on multiple sources of information to increase their sense of predictability and control (e.g., Guinote, 2007a; Fiske, 1993; Keltner et al., 2003). Because reliance on subjective experiences often constitutes the default process, and because experiences provide a primary source of information, the present research hypothesized that power increases and powerlessness decreases reliance on experiential information.

Study 1 examined power from an individual difference perspective and explored the relationship between personality dominance, sense of power, and individuals' self-reported use of experiences in decision making. As predicted, dominance was positively associated with people's preference for experiences. Moreover, these effects of dominance were fully mediated by the greater sense of power dominant individuals tend to experience in their everyday relationships with others.

Studies 2 to 5 focused on the consequences of power for reliance on ease-of-retrieval experiences. Focusing on this type of experiences allows separating the contributions of subjective experiences and declarative information to powerful and powerless individuals' judgments (e.g., see Gawronski & Bondenhausen, 2005; Raghubir & Menon, 2005; Wänke & Bless, 2000). Using a variety of

operationalizations of power, and investigating different domains such as attitudes (Study 2), self-related judgments (Study 2), and stereotyping (Study 3), it was found that the judgments of powerful participants were more in line with the content of retrieved information when retrieval was easy, compared to when retrieval was difficult. In line with previous theorizing (e.g., Schwarz et al., 1991), this indicates that power promotes reliance on ease-of-retrieval experiences. Conversely, the judgments of powerless participants were not affected by experiential information and tended to be based on the content of the retrieved information. These results confirm the hypothesis that power increases reliance on subjective experiences as a source of information in judgments and decision making.

4.2.2. Judgmental Stability and Certainty

The present research also explored implications of the finding that power promotes reliance on subjective experiences. In particular, the present work focused on the consequences for judgmental stability, and the ways experiential and declarative information provide powerful and powerless individuals with a sense of certainty in their judgments and decisions.

Judgmental Stability. Building on the reasoning that evaluative judgments can be stored in memory, perhaps together with information on past experiences (see Barsalou, 1999; Judd & Brauer, 1995), Study 5 tested the hypothesis that momentary experiences can have long-term effects, thereby promoting judgmental stability. Using a longitudinal design, the study found that the effects of momentary ease-of-retrieval experiences were still evident after one week. This indicates that reliance on the ease of retrieval can have more long term effects than previously considered. The finding

that power promotes greater reliance on subjective experiences is, therefore, compatible with previous research that indicates that power can foster greater idiosyncrasy and stability in judgments (see Chen et al. 2001; Galinsky et al., in press). Depending on the circumstances, powerful individuals may construe their judgments based on previously stored information, or based on subjective experiences that arise during the judgmental process. The choice of each alternative is likely to depend on what factors dominate information processing in a given moment (see Guinote, 2007a). When subjective experiences are activated and relevant for a judgment at hand, then power should increase people's focus on subjective experiences (see also Weick & Guinote, 2008a). However, in the absence of momentary experiences, power should foster a focus on declarative information that relates to current goals (see Guinote, 2007b), expectations (see Guinote, Domingos, & Weick, 2008), or situational cues (see Guinote & Weick, 2008).

Perceived Certainty. The present research also explored the role of experiential and declarative information in providing powerful and powerless individuals with a sense of certainty in their judgments. In Study 6 participants made a series of decisions either based on their feelings, or following a content-based decision strategy. Participants then indicated how confident and certain they were in their decisions. The results confirmed the prediction that powerful individuals can derive a sense of certainty from basing decisions on subjective experiences, whereas powerless individuals need to resort to declarative information to be confident in their judgments.

These findings demonstrate that powerless individuals benefit more than powerful individuals from drawing on additional sources of information to increase

their levels of confidence. The present work has therefore implications for the way powerful and powerless individuals derive a sense of certainty in their judgments. The results of Study 6 are consistent with the underlying theoretical rationale that subjective experiences suffice as a source of information to satisfy the control needs of powerful individuals. Conversely, powerless individuals tend to draw on declarative sources of information to increase their sense of certainty and control.

4.2.3. Boundary Conditions

A final goal of the present research was to establish boundaries of the effects of power. Individuals do not always draw on subjective experiences as a source of information (e.g., Clore & Schwarz, 1996). Building on the assumption that power induces greater flexibility in people's information processing (e.g., Guinote, 2007a, 2007c; see also Overbeck & Park, 2006), the present research explored factors that strengthen or weaken the tendency of power to promote reliance on subjective experiences.

Informational Value of Subjective Experiences. Individuals do not tend to draw on experiences that have little informational value and derive from irrelevant sources (e.g., Oppenheimer, 2004; Schwarz & Vaughn, 2002). Building on this observation, Study 7 tested the hypothesis that power increases reliance on subjective experiences in a context where experiences are informative, but it does not promote reliance on experiences in a context where experiences are uninformative and judgments can be more readily made on the basis of declarative information. In the

latter case, both powerful and powerless individuals should turn to declarative sources of information as a judgmental basis.

Study 7 focused on the consequences of subjective experiences for judgments of truth. Information that is easy to process feels more familiar and consequently tends to be trusted more than information that is difficult to process (e.g., Reber & Schwarz, 1999). Participants decided whether statements written in a high or in a low colour contrast were true or false. High contrast statements are easier to process and more likely to be considered true than statements written in a low colour contrast (see Unkelbach, 2007). To manipulate the informational value of subjective experiences the study asked participants to make easy or difficult truth judgments. In this context, the informational value is high for difficult decisions, but low for easy decisions that can be more readily made based on factual knowledge. The study tested the prediction that power would increase the effects of colour contrasts when judgments are difficult and subjective experiences informative. In contrast, when judgments are easy and experiences less informative, then power would not enhance the effects of colour contrasts.

Contrary to predictions, Study 7 showed that power did not alter the effects of colour contrasts on participants' truth judgments, regardless of whether difficult or easy judgments were invoked. The study could therefore not confirm the moderating role of the informational value of subjective experiences. The failure to obtain the predicted effects could be attributed to weaknesses in the experimental manipulations. At the same time, the absence of an effect of power could also indicate that power does not augment the effects of fluency experiences that derive from colour contrasts. If true, this would suggest that the effects of power do not extend to all types of subjective experiences.

Perceptual Fluency. Building on the findings of Study 7, two more studies were conducted to see if the effects of power on increased reliance on subjective experiences extend to experiences that arise from perceptual fluency. Study 8 examined the consequences of power for reliance on perceptual fluency in a modified version of the ease-of-retrieval paradigm (see Briñol et al., 2006). Specifically, participants generated arguments against an increase in CCTV surveillance. The arguments appeared in a high or a low colour contrast against a white background. Because experiences of ease or difficulty associated with reading tend to be attributed to memory retrieval, people's attitudes tend to be more in line with the generated information when colour contrasts are high rather than low (see Briñol et al., 2006). The results of the study showed that only powerless, but not powerful participants were affected by variations in colour contrasts. This lends support to the assumption that power does not increase reliance on experiences that arise from perceptual fluency.

At the same time, it was noted that the effects of perceptual fluency in Studies 7 and 8 hinged on a misattribution process, whereby experiences elicited from external stimuli are attributed to an internal process. Specifically, in Study 7 experiences that arose from reading needed to be attributed to the retrieval of statement-consistent information from memory in order for fluency to exert an influence on individuals' truth judgments. The same applies to Study 8. Here, reading experiences needed to be attributed to the retrieval of information that opposed the judgmental target for fluency to alter individuals' evaluative judgments. In both studies, correctly attributing fluency to its original source diminishes the effects of processing fluency (see also Oppenheimer & Frank, 2008). Because power affects the ability to filter out irrelevant sources of information (e.g., Guinote, 2007b, 2007c), the

failure to observe an effect of power on perceptual fluency could be attributed to the presence of these misattribution processes. Addressing these concerns, Study 9 again examined the consequences of power for reliance on perceptual fluency in a context that did not require misattribution processes. The study built on the observation that stimuli that are more fluently processed tend to be evaluated more positively (see Winkielman et al., 2003). Study 9 investigated these hedonic effects of perceptual fluency in participants' liking of pictures. In this context fluency arises from the judgmental target, and hedonic effects of perceptual fluency occur without the involvement of misattribution processes. The results showed that the evaluations of powerless participants were more affected by colour contrasts than the evaluations of powerful participants. This result supports the conclusion that power does not increase reliance on experiences that derive from perceptual fluency.

The results of Studies 7-9 are consistent with the interpretation that power only increases reliance on experiences that provide a primary source of information. The present research builds on the assumption that power increases reliance on subjective experiences because power strengthens individuals' processing focus on aspects that are most accessible and that tend to capture individuals' attention. Thus, it is possible that power does not augment the effects of perceptual fluency experiences because these experiences were more subtle and did not capture powerful individuals' processing focus.[34] This is consistent with research on persuasion pointing out that only experiences that are noticed exert an effect on people's judgments, while

[34] The ease of retrieval elicited in the ease-of-retrieval paradigm (Schwarz et al., 1991) creates a state of awareness, which is indicated by the results of the manipulation checks. Ease-of-retrieval experiences can also be captured directly using physiological measures (see von Helversen, Gendolla, Winkielman, & Schmid, 2008). William James (1893) illustrated the intensity that ease-of-retrieval experiences can have in his description of retrieving a forgotten name as an 'intensively active gap' (p. 251).

experiences that are unnoticed may not alter judgments (Albarracín, & Kumkale, 2003).

At the same time, it is important to note that the present studies on perceptual fluency failed to establish if powerful and powerless individuals differed in their subjective experiences that arose from fluency. In fact, the results of the manipulation checks in Studies 7 and 8 point out that powerful individuals might have been less affected by variations in colour contrasts than powerless individuals. Thus, the absence of an effect of power could be attributed to differences in powerful and powerless individuals' subjective experiences.

In summary, the present research contributed to establish boundary conditions of the effects of power. While the present research failed to provide conclusive evidence for the moderating role of the informational value of subjective experiences, it appears that the effects of power do not extend to experiences that arise from the processing of visual information. It was suggested that qualitative differences may contribute to the differential effects of power. Specifically, power may not augment the effects of experiences that are subtle and that do capture individuals' focus of attention.

4.3. Limitations

4.3.1. Alternative Accounts

The present research is consistent with the hypothesis that power increases reliance on subjective experiences that constitute a primary source of information. There are, however, a number of alternative accounts for the effects of power obtained. For example, because power is thought to induce positive mood (Keltner et al., 2003), and because elevated mood promotes reliance on experiential information (Ruder & Bless, 2003), the present research examined differences in mood as an alternative explanation for the effects of power. Consistently across studies the effects of power were, however, unrelated to mood. Mood and power therefore have independent effects on the extent to which individuals tend to rely on subjective experiences.

Although the present research focused on the ease of retrieval to separate the contributions of declarative thought contents and experience-based information to powerful and powerless individuals' judgments, differences in the content of the retrieved information provide an additional alternative explanation for the effects of power. Specifically, differences in the persuasiveness, in the valence of the retrieved information, or in the number of counter-attitudinal thoughts could account for the differences in powerful and powerless individuals' judgments. Using external observers (Study 2) as well as a thought-listing task (Study 5) the present research found no support for such an alternative explanation.

Finally, the effects of power could also be explained in terms of differences in processing motivation and effort. In particular, powerful individuals may be less motivated to process information, and therefore rely on subjective experiences (see

Aarts & Dijksterhuis, 1999; Rothman & Schwarz, 1998). Although the present research agues that powerful individuals rely on aspects that are primary in a given situation (see Guinote, 2007a), this does not imply that the effects of power derive from reduced effort. This is in line with previous research that shows power affects what information individuals attend to, but not necessarily the effort involved in processing (see Guinote et al., 2006).

Several findings contradict an explanation in terms of effort: Participants primed with power generated higher quality arguments than participants primed with powerlessness (Study 2). Moreover, managers and subordinates did not differ in the amount of recalled leisure time activities, even if this task involved considerable effort (Study 3). There was also no indication that power affected the extent to which participants deliberated on the materials, using the number of thoughts participants generated as an index for processing efforts (Study 5). In combination, these findings would argue against processing effort as an account for the effects of power.

Finally, it is conceivable that power altered participants' subjective experiences, and this led to differences in judgmental outcomes. However, throughout the studies the results of the manipulation checks suggest that powerful and powerless participants did not differ in their subjective experiences.[35] Taken together, the results of the present research are best understood in terms of a direct effect of power on increased reliance on subjective experiences.

[35] An exception is Study 7 where control participants appeared to be more affected by variations of colour contrasts than participants primed with power. However, in this study power did not alter the effects of perceptual fluency on participants' judgments of truth.

4.3.2. Asymmetric Effects

The strongest support for the claim that power fosters reliance on experiences derived from studies focusing on the ease of retrieval. Compared to the results of powerless individuals, the results of powerful individuals are closer to the results usually obtained with the ease-of-retrieval paradigm (e.g., Schwarz et al., 1991). One could therefore argue that the effects of power are mainly driven by powerlessness rather than by power. The present research assumes that with increasing levels of control, individuals become more inclined to draw on subjective experiences to guide their judgments and actions. Conversely, the more individuals are lacking control, the more they tend to draw on other, declarative sources of information. Studies using trait dominance (Studies 1, 5, and 6) as a proxy for power found support for such a relationship. Furthermore, Study 1 suggests that these effects of dominance are linked to people's experiences of power in everyday life. The more individuals perceived themselves to have power, the more they asserted that they tend to rely on subjective experiences. Conversely, the less individuals perceived themselves to be powerful, the more they asserted that they tend to draw on declarative sources of information. Nevertheless, these studies are not fully conclusive and cannot determine whether the effects of power are indeed symmetric. To this end, future research should include a neutral baseline against which the responses of powerful and powerless individuals can be compared.

4.3.3. Generalizability

The present research focused on the consequences of power for reliance on experiences that arise through thinking. As pointed out earlier, this approach has the

advantage of separating the contributions of declarative and experiential information. Moreover, as expected, power did not alter participants' baseline experiences, rendering the obtained results more readily interpretable. However, the question arises whether the present findings can be generalized to other classes of subjective experiences such as bodily sensations and affect.

There are several reasons to suggest that the effects of power are not limited to ease-of-retrieval experiences. First, Study 1 included a self-report measure that was not confined to ease-of-retrieval experiences. In this study, the more participants perceived themselves to have power in their everyday relationships, the more they asserted relying on their feelings in general.

Further support for the generalizability of the present findings comes from a recent study that involved bodily sensations and eating appetizing and non-appetizing food (see Guinote, 2008a). In this study powerful participants ate more or less food depending on their gustatory experiences while eating (Study 1). In contrast, the amount of food eaten by powerless individuals was unrelated to their experiences. Conceptually similar results were obtained in a subsequent study that examined people's food consumption in relation to their hunger experiences (Guinote, 2008a, Study 2). Unlike powerless individuals, powerful individuals consumed more or less of an appetizer depending on how hungry they felt.

A recent study involving moral judgments provides additional support for the generalizability of the present findings. In this study powerful individuals prioritized more moral concerns over competing goals as compared to powerless individuals (Jordan, 2006). Because affective experiences play a central role in moral judgments (e.g., Greene, Sommerville, Nystrom, Darley, & Cohen, 2001; Prinz, 2006), this

finding is consistent with the view that powerful individuals were more guided by subjective experiences than powerless individuals (see Jordan, 2006).

Taken together, recent empirical findings as well as the results of Study 1 suggest that the present findings generalize to other types of subjective experiences (e.g., bodily experiences, affect), and are not restricted to experiences that arise through thinking (i.e. cognitive experiences). However, more research is needed to establish the generalizability of the present findings to other classes of subjective experiences.

Notably, in the present research the effects of power did not extend to experiences that arise from perceptual fluency. It was reasoned that qualitative differences might explain this lack of effects. Specifically, the effects of power might not affect experiences that are very subtle and that do not capture people's attentional focus. At the same time, it was noted that differences in powerful and powerless individuals' subjective experiences might have contributed to the absence of an effect of power on processing fluency. Nevertheless, if it is the case that power did not increase reliance on fluency experiences because these experiences were very subtle, then power may not augment reliance on other types of experiences that also typically bypass individuals' attention; including sensomotoric experiences (e.g., feelings associated with bodily movements; orientation in space; muscle contraction), olfactory sensations and homeostatic experiences below certain thresholds, or some types of affective experiences (e.g., subtle mood states or affective reactions). These presumptions are of course speculative and await future testing.

4.3.4. Boundary Conditions

Perceptual Fluency. The previous section alludes to what is perhaps the strongest limitation of the present work: the failure to establish more clearly boundary conditions of the effects of power. In particular, although it was shown that misattribution mechanisms are an unlikely account for the absence of an effect of power on perceptual fluency, the exact reasons for the moderating role of perceptual fluency remain unclear. Experiences that arise from perceptual fluency and ease of retrieval differ in a number of ways, each of which might explain the differential effects of power on these experiences.

First, fluency that derives from visual information pertains to a perceptual process, whereas ease-of-retrieval experiences are invoked through a conceptual process (see Winkielman et al., 2003). The effects of power might not extend to experiences that arise through perceptual processes, and this could explain the differential effects on ease of retrieval and perceptual fluency. In an examination of this possibility, an additional study did not find support for this explanation. In this study participants ($N = 44$) rated the intelligence of an author of a text passage taken from a scientific journal. Conceptual fluency was manipulated through providing half the participants with background information, which considerably aided the understanding of the text passage. Texts that are easier to understand tend to elicit higher ratings of intelligence than texts that are difficult to understand (see Oppenheimer 2005). The study assessed participants' sense of power as an individual difference variable (Anderson & Galinsky, 2006). The results showed a tendency for conceptual fluency to exert its predicted effect on participants' intelligence ratings, and this effect was independent of participants' sense of power. Although more

research is needed, this suggests the distinction between perceptual and conceptual processes might not be sufficient to explain the differential effects of power.

Another distinction between perceptual fluency and ease of retrieval pertains to experiences of sustained effort, and experiences that arise from changes in stimulus quality. In this view, power might increase reliance on experiences that arise from internal monitoring of effort, but not on experiences that are the result of changes in stimulus properties. At a broader level, this would be consistent with research that shows power can reduce the impact of external sources of influence (Galinsky et al., in press). Similarly, research on persuasion shows that power makes individuals more inclined to draw on self-generated information, while it reduces the impact of information provide from outside (Briñol, Petty, Valle, Rucker & Becerra, 2007). The present research cannot rule out the possibility that the effects of power only occur for experiences that arise through internal monitoring processes, but not for experiences that derive from changes in external stimulus properties.

In summary, the present research supports the view that power increases reliance on subjective experiences depending on whether or not these experiences constitute a primary source of information. That is, power promotes reliance on subjective experiences as a source of information, unless these experiences are subtle and do not capture individuals' focus of attention. Clearly, further research is required to confirm these conjectures. For instance, future research could systematically vary the level of intensity of subjective experiences, or manipulate individuals' attentional focus to experiences experimentally. Important insights would also be gained by including objective measures of subjective experiences, such as measures of cardiovascular activity (e.g., von Helversen, Gendolla, Winkielman, & Schmidt, 2008) or facial electromyography (EMG; see Winkielman & Cacioppo, 2001).

Other Boundary Conditions. The present research fell short in establishing further boundary conditions for the effects of power. In particular, the moderating role of the informational value of subjective experiences could not be confirmed. Thus, it remains to be tested whether power does not increase reliance on subjective experiences that are uninformative and less relevant for a judgment at hand. Furthermore, there are a number of other factors that may weaken or strengthen the association between power and reliance on subjective experiences. For example, some contexts may be more strongly associated with the use of experiences than others (e.g., Rothman & Hardin, 1997). The effects of power may therefore vary depending on whether the situation calls for experience-based or content-based judgments. As pointed out earlier, the effects of power should also be less pronounced in contexts where judgments are more readily made on the basis of other information (e.g., factual knowledge; previously stored judgments). The availability of this information in turn may depend on factors such as attitude strength or extremity (see Haddock, 2000; Haddock, Rothman, Reber, & Schwarz, 1999).

Finally, the present research posits that power promotes reliance on subjective experiences because power is – ordinarily - associated with greater certainty and control. However, power in real life can be associated with other variables that may reduce experiences of certainty and control. For instance, if power is threatened, or associated with responsibilities and obligations, then this could lead to reduced control experiences. Likewise, sometimes power only implies control over others, but not control over one's own resources and outcomes (e.g., parenting). In these circumstances one could expect a reduction in the effects of power on promoting

reliance on experiences. Again, it remains for future research to address these conjectures and to further explore boundary conditions of the effects of power.

4.4. Implications of the Present Findings

The present research rectifies an important neglect in the literature, demonstrating that a full account of the effects of power needs to consider subjective experiences. Taking into account subjective experiences leads to different predictions, qualifying and sometimes even reversing the predictions made on the basis of declarative thought-contents (e.g., Schwarz, 1998). Furthermore, the present studies highlight that power promotes malleable responses, construed in the situation on the basis of momentary experiences individuals have. These results have consequences for several domains.

4.4.1. Research on Power

Power, the Self, and Momentary Sources of Influence. Researchers have argued that power promotes responses in line with chronic person tendencies and dispositions (Chen et al., 2001; see also Smith & Trope, 2006). In contrast, the present findings demonstrate that the self-related judgments of powerful individuals are subject to temporary influences of subjective experiences. Self-related judgments are, therefore, more malleable than it has been previously considered.

Nevertheless, these two lines of reasoning are not necessarily contradictory. Power can magnify the expression of person variables, especially in situations where chronic person constructs are the main determinants of individuals' cognition (Guinote, 2007a; see also Higgins, 1996). Chronic person tendencies and dispositions may also elicit idiosyncratic subjective experiences (e.g., Gross & John, 1995; Diener, Sandvik, Pavot, & Fujita, 1992; Rusting & Larsen, 1998), which in turn can guide the perceptions and responses of powerholders. Thus, reliance on subjective experiences

therefore may in fact contribute to the expression of chronic person tendencies and dispositions (see Chen et al., 2001).

Power and Stereotyping. A great deal of past research on power has focused on social perception and the ways powerful and powerless individuals pay attention to declarative information such as stereotypes and individuating information (e.g., Chen et al., 2004; Dépret & Fiske, 1999; Fiske, 1993; Goodwin et al., 19998; Goodwin et al., 2000; Gubin et al., 2000; Guinote et al., 2002; Overbeck & Park, 2001; Overbeck & Park, 2006; Richeson & Ambady, 2002; Stevens & Fiske, 2000; Vescio et al., 2003; Vescio et al., 2005). This research has shown that power promotes stereotypic social perceptions when stereotype-consistent information is present in the environment (e.g., Fiske, 1993; Fiske & Dépret, 1996), and when stereotypes are instrumental to the person's current goals (Overbeck & Park, 2006; Vescio et al., 2003). The present findings provide an important extension, showing that in the absence of external cues or processing objectives power can increase both individuation and stereotypic perceptions depending on momentary experiences.

Power and Behavioural Variability. Past research found that powerful groups are perceived as more variable than powerless groups (Guinote, 2001; see also Lorenzo-Cioldi, 1993; Simon & Brown, 1987). This occurs in part because powerful individuals act objectively in more variable ways compared to powerless individuals (Guinote et al., 2002). This past research highlights the greater interpersonal variability that results from power.

Recently it has been shown that power can also promote greater intrapersonal variability. Powerful individuals respond more unequivocally to situational affordances as compared to powerless individuals (Guinote, 2008b). The present research extends these findings, showing greater variability in the judgments of powerful individuals, which can derive from reliance on momentary subjective experiences.

Power and Decision Making. Because subjective experiences play an important role in decision making (e.g., Damasio, 1994), the present findings have implications for research into how power affects decision making. For example, powerful individuals might be more inclined to rely on somatic markers in decision making, which inform about the favourability of decision alternatives from previous experiences (Bechara & Damasio, 2005).[36] Because information that pertains to successful goal-completion is easier to retrieve than information that pertains to unsuccessful goal-completion, reliance on subjective experiences can foster optimistic biases in time predictions (Sanna & Schwarz, 2003). Thus, the present research might also contribute to recent findings showing that power increases biases in forecasts of future task completion time (Weick & Guinote, 2008b). In general, power may bias decision-makers towards decision alternatives that are easier to conceive, such as desired outcomes or decision alternatives that are more accessible (e.g., through visual salience, see Weick, 2004).

[36] Somatic markers may only exert greater influence on powerful as compared to powerless individuals to the extent that accompanying experiences capture people's attentional focus. The present research would suggest that power may not enhance the effects of somatic markers that are very subtle.

Ecological Validity of Socio-Cognitive Power Research. To date, socio-cognitive research on power has not established the ecological validity of its findings. Thus, it remains unclear whether the effects obtained in the laboratory, using experimental manipulations of power and student samples, can be translated into real life. The present research obtained parallel findings in the laboratory and in a quasi-experiment using groups who naturally differ in their levels of power. This gives considerable support to the claim that socio-cognitive research into power is ecologically valid, and that it can explain differences that occur between powerful and powerless individuals in real life.

Management Science and Organizational Behavior. Management researchers have recently argued that a perspective that is based exclusively on bounded rationality (i.e., on cognitive limits in decision making; see Hambrick & Mason, 1984; Simons, Pelled, & Smith, 1999) is insufficient to explain top management decision-making, and that emotions and feelings play an important part in the decisions of top-managers (Agor, 1986; Kisfalvi & Pitcher, 2003). However, other factors such as time-pressure or decisional complexity could account for these effects (see Schwarz & Clore, 1996). The present findings suggest that top managers might be inclined towards experience-based judgments because of the *power* that arises from their positions - a hypothesis that has not been considered in management research.

4.4.2. Research on Attitudes and Subjective Experiences

Long-term Effects of Subjective Experiences. The present findings not only indicate that the attitudes of powerful individuals are dependent on subjective experiences, but they also have implications for the understanding of the role of subjective experiences in judgments and decisions. The present research hypothesized that attitudes that are formed based on experiential information can be stable over time. Although attitudes are often construed in the situation based on cues that are temporarily accessible (e.g., Schwarz & Bohner, 2001), individuals can rely on past evaluations stored in memory to construe their judgments (see Judd & Brauer, 1995). Therefore, it was reasoned that initial judgments and possibly experiential information (see Barsalou, 1999) can be stored in memory and affect later judgments, thereby resulting in some stability over time. The present research provided support for such permanent effects of subjective experiences.

Moderators of Reliance on Experiences. The finding that power moderates reliance on subjective experiences is also important for the understanding of attitudes and attitude formation. Research has largely focused on contextual variables (e.g., Lerner & Gonzales, 2005; Ruder & Bless, 2003) and characteristics of the target (e.g., Gawronski, Bodenhausen, & Banse, 2005; Rothman & Hardin, 1997) that affect reliance on experiential information. The present findings indicate that structural variables associated with the extent to which individuals control outcomes, as well as dispositional variables associated with the tendency to dominate and influence others, affect the extent to which individuals rely on subjective experiences. The present research is also the first to explicitly point out the role of certainty and control as key

determinants of the extent to which individuals tend to draw on experiences to inform their judgments and decisions.

Cognitive Experiences. The differential effects of power on ease of retrieval and perceptual fluency have theoretical implications. Previous research has focused primarily on the similarities between various types of cognitive experiences (e.g., Opppenheimer & Alter, 2008; Schwarz, 2004). Little is known about differences between experiences that arise from ease of retrieval and perceptual fluency. The present research suggests that not all cognitive experiences operate in the same way, and that they differ in their consequences for judgments and decisions depending on other variables such as social power.

4.4.3. Applied Implications

Judgment and Decision Processes. The present research suggests that feelings play an important role in the judgments made by powerful individuals. The question then arises what consequences this has for the decisions of powerful actors, such as political leaders or business executives. Reliance on experiences can bias judgments, producing judgmental outcomes that are consistent with the use of heuristics (e.g., Sanna & Schwarz, 2003). Yet, experiences also assist in making better decisions. Impairments to the ability to experience emotions and other subjective experiences tend to result in poor and inefficient decision making (e.g., Damasio, 1994; Bechara & Damasio, 2005).

From an applied perspective, the present research suggests that the decisions and judgments of powerful individuals may be subject to distortion, in particular if

subjective experiences arise from irrelevant sources (e.g., attractiveness of a candidate in a hiring decision). However, if subjective experience are relevant to a judgment at hand (e.g., flow experiences in students' coursework evaluations), and if decision makers can draw on previous experiences with the same or a similar type of problem, then reliance on subjective experiences should be beneficial and contribute to more efficient decision-making (see Seo & Barrett, 2007, for an empirical demonstration). Finally, the present research would also suggest that organisations and institutions could benefit from having decisions that involve strong experiences (e.g., feelings of disgust in a law suit; or excitement about the launch of a new product) based on wider participation; for example through inclusion of low power individuals in the decision process.

Health Behaviour. The present findings may also have implications for health behaviour. A great deal of research indicates that a greater sense of control is associated with better health outcomes (e.g., Rodin, 1986). However, the present findings suggests potential drawbacks (see also Thompson, Cheek, & Graham, 1988), whereby basic drives or addictive desires may exert a stronger influence on individuals with high levels of control. Greater reliance on experiences should make these individuals particularly susceptible to bodily states of deprivation or intense cravings. These individuals may also be prone to engage in risk-taking behaviours associated with states of arousal (e.g., unprotected sex, see also Anderson & Galinsky, 2006). Thus, somewhat ironically, being in control might reduce control over the self and promote negative health outcomes.

4.5. Conclusion

Feelings matter. Subjective experiences contribute to the situated nature of human cognition and play a central role in judgments and decision making. The present research rectifies an important neglect in previous research on power, pointing out that the judgments and decisions of powerful individuals are often guided by subjective experiences. This demonstrates that an understanding of the effects of power requires a consideration of experiential information. The greater control powerful individuals tend to experience allows them to focus on subjective experiences that provide a primary source of information. In contrast, powerless individuals tend to resort to declarative information to inform their judgments and decisions. This highlights the flexibility of powerful individuals' attitudes and perceptions and gives new directions for future research.

References

Aarts, H., & Dijksterhuis, A. (1999). How often did I do it? Experienced ease of retrieval and frequency estimates of past behavior. *Acta Psychologica, 103*, 77-89.

Adler, A. (1966). The psychology of power. *Journal of Individual Psychology, 22*, 166-172.

Agor, W. H. (1986). The logic of intuition: How top executives make important decisions. *Organizational Dynamics, 14*, 5-18.

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

Albarracín, D., & Kumkale, G. T. (2003). Affect as information in persuasion: A model of affect identification and discounting. *Journal of Personality and Social Psychology, 84*, 453-469.

Albarracín, D., & Wyer, R. S. (2001). Elaborative and nonelaborative processing of a behavior-related communication. *Personality and Social Psychology Bulletin, 27*, 691-705.

Alimo-Metcalfe, B., & Alban-Metcalfe, J. (2001). The development of a new transformational leadership questionnaire. *Journal of Occupational and Organizational Psychology, 74*, 1-27.

Alter, A. L., & Oppenheimer, D. M. (2008). *Uniting the tribes of fluency to form a metacognitive nation*. Manuscript submitted for publication.

Anderson, C. J. (2003). The psychology of doing nothing: Forms of decision avoidance result from reason and emotion. *Psychological Bulletin, 129*, 139-167.

Anderson, C., & Berdahl, J. L. (2002). The experience of power: Examining the effects of power on approach and inhibition tendencies. *Journal of Personality and Social Psychology, 83,* 1362-1377.

Anderson, C., & Galinsky, A. D. (2006). Power, optimism, and risk-taking. *European Journal of Social Psychology, 36*, 511-536.

Anderson, C., John, O. P., Keltner, D., & Kring, A. (2001). Social status in naturalistic face-to-face groups: Effects of personality and physical attractiveness in men and women. *Journal of Personality and Social Psychology, 81*, 116–132.

Anderson, J. R., & Bower, G. H. (1973). *Human associative memory*. Washington, DC: Winston.

Archer, J. (2006). Testosterone and human behavior: An evaluation of the challenge hypothesis. *Neuroscience and Biobehavioral Reviews, 30*, 319-345.

Aries, E. J., Gold., C., & Weigel, R. H. (1983). Dispositional and situational influences on dominance behaviour in small groups. *Journal of Personality and Social Psychology, 44*, 779-786.

Arkes, H. R., Hackett, C., & Boehm, L. (1989). The generality of the relation between familiarity and judged validity. *Journal of Behavioral Decision Making, 2*, 81–94.

Averill, J. R. (1980). A constructivist view of emotions. In R. Plutchnik & H. Kellerman (Eds.), *Emotions: Theory, research, and experience* (Vol. 1, pp. 305-339). New York: Academic Press.

Bachrach, P., & Baratz, M. S. (1962). The two faces of power. *American Political Science Review, 57*, 641-651.

Bacon, W. F., & Egeth, H. E. (1994). Overriding stimulus-driven attention capture. *Perception and Psychophysics, 55*, 485-496.

Bandura, A. (1991). Social cognitive theory of self-regulation. *Organizational Behavior and Human Decision Processes, 50*, 248–287.

Bandura, A. (2006). Toward a psychology of human agency. *Perspectives on Psychological Science, 1*, 164-180.

Bargh, J. A. (1996). What have we been priming all these years? On the development, mechanisms, and ecology of nonconscious social behaviour. *European Journal of Social Psychology, 36*, 147-168.

Bargh, J. A., Raymond, P., Pryor, J. B., & Strack, F. (1995). Attractiveness of the underling: An automatic power-sex association and its consequences for sexual harassment and aggression. *Journal of Personality and Social Psychology, 68*, 768–781.

Barsalou, L. W. (1999). Perceptual symbol systems. *Behavioural and Brain Science, 22*, 577-660.

Bass, B. M. (1981). From leaderless group discussions to the cross-national assessment of managers. *Journal of Management, 7*, 63-76.

Bechara, A, & Damasio A. R. (2005). The somatic marker hypothesis: a neural theory of economic decision. *Games and Economic Behavior, 52*, 336-372.

Bechara, A., Damasio, H., Tranel, D., & Damasio, A. R. (1997). Deciding advantageously before knowing the advantageous strategy. *Science, 275*, 1293-1295.

Beckham, B., & Aronson, H. (1978). Selection of jury foremen as a measure of the social status of women. *Psychological Reports, 43*, 475-478.

Begg, I. M., Anas, A., & Farinacci, S. (1992). Dissociation of processes in belief: Source recollection, statement familiarity, and the illusion of truth. *Journal of Experimental Psychology: General, 121*, 446–458.

Bem, S. L. (1976). Probing the promise of androgyny. In A. G. Kaplan & J. P. Bean (Eds.), *Beyond sex-role stereotypes: Readings toward a psychology of androgyn* (pp. 48-62). Boston, Toronto: Little, Brown & Company.

Berdahl, J. L., & Martorana, P. (2006). Effects of power on emotion and expression during a controversial group discussion. *European Journal of Social Psychology, 36*, 497-509.

Berger, J., Cohen, B. P., & Zelditch, M., Jr. (1972). Status characteristics and social interaction. *American Sociological Review, 37*, 241-255.

Berkowitz, L. (1993). Toward a general theory of anger and emotional aggression: Implications of the cognitive-neoassociatinionistic perspective for the analysis of anger and other emotions. In R. S Wyer, Jr., & T. K. Srull (Eds.), *Advances in social cognition: Perspectives on anger and emotion* (Vol. 6, pp. 1-46). Hillsdale, NJ: Lawrence Erlbaum Associates.

Betsch, C. (2004). Präferenz für Intuition und Deliberation. Inventar zur Erfassung von affekt- und kognitionsbasiertem Entscheiden. [Preference for intuition and deliberation: An inventory to assess affect- and cognition-based decision making]. *Zeitschrift für Differentielle und Diagnostische Psychologie, 25*, 179–197.

Biller, B., Bless, H., & Schwarz, N. (1992, April). Ease of recall as information: The impact of question order. Paper presented at Tagung Experimentell Arbeitender Psychologen, Osnabrück, Germany. Cited in Schwarz, N. (1998). Accessible content and accessibility experiences: The interplay of declarative

and experiential information in judgment. *Personality and Social Psychology Review, 2*, 87-99.

Bless, H., Clore, G. L., Schwarz, N., Golisano, V., Rabe, C., & Woelk, M. (1996). Mood and the use of scripts: Does happy mood make people really mindless? *Journal of Personality and Social Psychology, 63*, 585-595.

Bless, H., & Forgas, J. P. (2000). *The message within: The role of subjective experience in social cognition and behavior.* Phiadelphia: Psychology Press.

Bless, H., & Schwarz, N. (1999). Sufficient and necessary conditions in dual-process models: The case of mood and information processing. In S. Chaiken, & Y. Trope (Eds.), *Dual-process theories in social psychology* (pp. 423-440). New York: Guilford Press.

Bodenhausen, G. V., Kramer, G. P., & Süsser, K. (1994). Happiness and stereotypic thinking in social judgment. *Journal of Personality and Social Psychology, 66*, 621-632.

Bodenhausen, G. V., Sheppard, L., & Kramer, G. P. (1994). Negative affect and social perception: The differential impact of anger and sadness. *European Journal of Social Psychology, 24*, 45-62.

Bonabeau, E. (2003). Don't trust your gut. *Harvard Business Review, 81*, 116.

Bower, G. H. (1981). Mood and memory. *American Psychologist, 36*, 129-148.

Bower, G. H., & Cohen, P. R. (1982). Emotional influences in memory and thinking: Data and theory. In S Clark & S. T. Fiske (Eds.), *Affect and cognition* (pp. 291-332). Hillsdale, NJ: Erlbaum.

Brauer, M. (2001). Intergroup perception in the social context: The effects of social status and group membership on out-group homogeneity and ethnocentrism. *Journal of Experimental Social Psychology, 37*, 15-31.

Brauer, M., & Bourhis, R. Y. (2006). Social power. *European Journal of Social Psychology, 36*, 601-616.

Brehm, J. W. (1966). *A theory of psychological reactance*. New York: Academic Press.

Brehm, J. W. (1993). Control, its loss, and psychological reactance. In G. Weary, F. H. Fleicher, & K. L. Marsh (Eds.), *Control motivation and social cognition* (pp. 3–30). New York: Springer Verlag.

Brendl, C. M., Higgins, E. T., & Lemm, K. M. (1995). Sensitivity to varying gains and losses: The role of self-discrepancies and event framing. *Journal of Personality and Social Psychology, 69*, 1028–1051.

Briñol, P., Petty, R. E., & Tormala, Z. L. (2006). The malleable meaning of subjective ease. *Psychological Science, 17*, 200-206.

Briñol, P., Petty, R. E., Valle, C., Rucker, D. D., & Becerra, A. (2007). The effects of message recipients' power before and after persuasion: A self-validation analysis. *Journal of Personality and Social Psychology, 93*, 1040-1053.

Brown, A. S., & Nix, L. A. (1996). Turning lies into truths: Referential validation of falsehoods. *Journal of Experimental Psychology: Learning, Memory, and Cognition, 22*, 1088–1100.

Bugental, D. B., & Lewis, J. C. (1999). The paradoxical misuse of power by those who see themselves as powerless: How does it happen? *Journal of Social Issues, 55*, 51-64.

Bugental, D. B., Lyon, J. E., Krantz, J., & Cortez, V. (1997). Who's the boss? Accessibility of dominance ideation among individuals with low perceptions of interpersonal power. *Journal of Personality and Social Psychology, 72*, 1297-1309.

Buss, D. M., & Craik, K. H. (1980). The frequency concept of disposition: dominance and prototypically dominant acts. *Journal of Personality, 48*, 379-392.

Buss, D. M. (1988). From vigilance to violence: Tactics of mate retention in American undergraduates. *Ethology and Sociobiology, 9*, 291-317.

Cabanac, M. (1992). Pleasure: The common currency. *Journal of Theoretical Biology, 155*, 173-200.

Carless, S.A., Wearing, A. J., & Mann, L. (2000). A short measure of transformational leadership. *Journal of Business and Psychology, 14*, 389-405

Cartwright, D. (1959). A field theoretical conception of power. In D. Cartwright (Ed.), *Studies in social power* (pp. 86-103). Ann Arbor: University of Michigan Press.

Carver, C. S., & White, T. L. (1994). Behavioral inhibition, behavioural activation, and affective responses to impending reward and punishment: The BIS/BAS scales. *Journal of Personality and Social Psychology, 67*, 319–333.

Cashdan, E. (1998). Smiles, speech, and body posture: How women and men display sociometric status and power. *Journal of Nonverbal Behavior, 22*, 209-228.

Chaiken, S., Wood, W., & Eagly, A. H. (1996). Principles of persuasion. In E.T. Higgins and A. Kruglanski (Eds.), *Social psychology: Handbook of basic principles* (pp. 702-742). New York: Guilford Press.

Chemers, M. M. (2001). Leadership effectiveness: an integrative review. In M. A. Hogg & S. Tindale (Eds), *Blackwell Handbook of Social Psychology: Group Processes* (pp.376-399). Oxford: Blackwell.

Chen, S., Lee-Chai, A. Y., & Bargh, J. A. (2001). Relationship orientation as a moderator of the effects of social power. *Journal of Social Psychology, 80*, 173-187.

Chen, S., Ybarra, O., & Kiefer, A. K. (2004). Power and impression formation: Effects of power on the desire for morality and competence information. *Social Cognition, 22*, 391-421.

Clark, M. S., & Mills, J. (1979). Interpersonal attraction in exchange and communal relationships. *Journal of Personality and Social Psychology, 37*, 12-24.

Clore, G. L. (1992). Cognitive phenomenology: Feelings and the construction of judgment. In L. L. Martin & A. Tesser (Eds.), *The construction of social judgments* (pp. 133-164). Hillsdale, NJ: Erlbaum.

Clore, G. L. (1994). Why emotions are felt. In P. Ekman & R. J. Davidson (Eds.), *The nature of emotion: Fundamental questions* (pp. 103-111). New York: Oxford University Press.

Clore, G. L., Gasper, K., & Garvin, E. (2001). Affect as information. In J. P. Forgas (Ed.), *Handbook of affect and social cognition* (pp. 121–144). Mahwah, NJ: Lawrence Erlbaum Associates, Inc.

Clore, G. L., Schwarz, N., & Conway, M. (1994). Affective causes and consequences of social information processing. In R. S. Wyer & T. K. Srull (Eds.), *Handbook of social cognition* (2nd ed., Vol. 1, pp. 323-418). Hillsdale, NJ: Erlbaum.

Conrad, M. (Producer), & Hirschbiegel, O. (Director). (2000). *Das Experiment* [Motion picture]. Hürt, Germany: Typhoon Film und Fanes Film

Conway, M., & Bekerian, D. A. (1987). Situational knowledge and emotions. *Cognition and Emotion, 1*, 145-191.

Conway, M., Di Fazio, R., Mayman, S. (1999). Judging others' emotions as a function of the others' status. *Social Psychology Quarterly, 62*, 291-305.

Conway, M., & Pizzamiglio,M. T. (1996, July). *Social status and emotions*. Poster presented at the annual meeting of the American Psychological Society, Washington, D.C.

Conway, M., Pizzamiglio, M.T., & Mount, L. (1996). Status, communality, and agency: Implications for stereotypes of gender and other groups. *Journal of Personality and Social Psychology, 71*, 25-38.

Copeland, J. T. (1994). Prophecies of power: Motivational implications of social power for behavioral confirmation. *Journal of Personality and Social Psychology, 80*, 183-187.

Dabbs, J. M., Jr., La Rue, D., & Williams, P. M. (1990). Testosterone and occupational choices: Actors, ministers, and other men. *Journal of Personality and Social Psychology, 59*, 1261-1265.

Dahl, R. A. (1957). The concept of power. *Behavioral Science, 2*, 201-218.

Dahl., R. A. (1961). *Who governs? Democracy and power in an American city*. New Haven, US.: Yale University Press.

Damasio, A. (1994). *Descartes' Error: Emotion, Reason, and the Human Brain*. NY: Gosset/Putnam.

Damasio, A. (2000). *The feeling of what happens: Body and emotion and the making of consciousness*. London, UK: Vintage.

DePaulo, B. M., & Friedman, H. S. (1998). Nonverbal communication. In D. Gilbert, S. T. Fiske, & G. Lindzey (Eds.), *Handbook of social psychology* (4th ed., Vol. 2, pp. 3–40). New York: McGraw-Hill.

Dépret, E. F., & Fiske, S. T. (1993). Social cognition and power: Some cognitive consequences of social structure as a source of control deprivation. In G.

Weary, F. Gleicher, & K. Marsh (Eds.), *Control motivation and social cognition* (pp. 176-202). NY: Springer-Verlag.

Dépret, E. F., & Fiske, S. T. (1999). Perceiving the powerful: Intriguing individuals versus threatening groups. *Journal of Experimental Social Psychology, 35*, 461-480.

Deutsch, F. M. (1990). Status, sex and smiling: The effect of role on smiling in men and women. *Personality and Social Psychology Bulletin, 16*, 531-540.

De Vries, M., Holland, R. W., & Witteman, C. L. M. (2008). In the winning mood: Affect in the Iowa gambling task. *Judgment and Decision Making, 3*, 42-50.

Diener, E., Sandvic, E., Pavot, W., & Fujita, F. (1992). Extroversion and subjective well-being in a United States national probability sample. *Journal of Research in Personality, 26*, 205-215.

Dijksterhuis, A., Macrae, C.N., & Haddock, G. (1999). The recollective experiences matter: Subjective ease of retrieval and stereotyping. *Personality and Social Psychology Bulletin, 25*, 766-774.

Doise, W. (1986). *Levels of Explanation in Social Psychology.* Cambridge: Cambridge University Press.

Domhoff, G. W. (1998). *Who rules America.* Mountain View, CA: Mayfield Publishing.

Dovidio, J. F., Ellyson, S. L., Keating, C. F., Heltman, K., & Brown, C. E. (1988). The relationship of social power to visual displays of dominance between men and women. *Journal of Personality and Social Psychology, 54*, 233-242.

Duckitt, J., Wagner, C., du Plessis, I., & Birum, I. (2002). The Psychological bases of ideology and prejudice: Testing a dual process model. *Journal of Personality and Social Psychology, 83*, 75–93.

Duke, J. T. (1976). *Conflict and power in social life.* Provo, Utah, US: Brigham Young University Press.

Dykman, B. J. (1998). Integrating cognitive and motivational factors in depression: Initial tests of a goal-oriented approach. *Journal of Personality and Social Psychology, 74*, 139-158.

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

Easterbrook, J. A. (1959). The effect of emotion on cue utilization and the organisation of behaviour. *Psychological Review, 66*, 183-201.

Ebenbach, D. H., & Keltner, D. (1998). Power, emotion, and judgmental accuracy in social conflict: Motivating the cognitive miser. *Basic and Applied Social psychology, 20*, 7-21.

Elias, S. M. (2004). Means of assessing ordinal interactions in social psychology: The case of sexism in judgments of social power. *Journal of Applied Social Psychology, 34*, 1857-1877.

Elias, S. M., & Loomis, R. J. (2004). The effect of instructor gender and race/ethnicity on gaining compliance in the classroom. *Journal of Applied Social Psychology, 34*, 937-958.

Ellyson, S. L., & Dovidio, J. F. (1985). *Power, dominance, and nonverbal behavior.* New York: Springer-Verlag.

Emerson, R. M. (1962). Power-dependence relations. *American Sociological Review, 27*, 31-41.

Enzmann, D. (1997). RanEigen: A program to determine the parallel analysis criterion for the number of principal components. *Applied Psychological Measurement, 21*, 232.

Eibl-Eibesfeldt, I. (1989). *Human ethology: Foundations of human behaviour.* Hawthorne, NY: Aldine de Gruyter.

Eppstein, S. (1994). Integration of the cognitive and the psychodynamic unconscious. *American Psychologist, 49*, 709-724.

Epstein, S., Pacini, R., Denes-Raj, V., & Heier, H. (1996). Individual differences in intuitive-experiential and analytic-rational thinking styles. *Journal of Personality and Social Psychology, 71*, 390-405.

Erchul, W. P., Raven, B. H., & Ray, A. G. (2001). School psychologists' perceptions of power bases in teacher consultations. *Journal of Educational and Psychological Consultation, 12*, 1-23.

Faul, F., Erdfelder, E., Lang, A.-G., & Buchner, A. (2007). G*Power 3: A flexible statistical power analysis program for the social, behavioral, and biomedical sciences. *Behavior Research Methods, 39*, 175-191.

Fazendeiro, T., Winkielman, P., Luo, C., & Lorah, C. (2005). False recognition across meaning, language, and stimulus format: Conceptual relatedness and the feeling of familiarity. *Memory and Cognition*. 33, 249-260.

Fiedler, K., Nickel, S., Muehlfriedel, T., & Unkelbach, C. (2001). Is mood congruency an effect of genuine memory or response bias? *Journal of Experimental Social Psychology, 37*, 201-214.

Fiske, S. T. (1993). Controlling other people: The impact of power on stereotyping. *American Psychologist, 48*, 621-628.

Fiske, S., & Berdahl, J. (2007). Social Power. In A. W. Kruglanski & E. T Higgins (Eds.), *Social psychology: Handbook of basic principles* (2nd ed., pp. 678-692). New York: Guilford Press.

Fiske, S. T., & Dépret, E. (1996). Control, interdependence and power: Understanding social cognition in its social context. In W. Stroebe & M. Hewstone (Eds.), *European Review of Social Psychology* (Vol. 7, pp. 31-61). Sussex: John Wiley & Sons Ltd.

Fiske, S. T., & Neuberg, S. L. (1990). A continuum of impression formation, from category-based to individuating processes: Influences of information and motivation on attention and interpretation. In M. P. Zanna (Ed.), *Advances in experimental social psychology* (Vol. 23, pp. 1-74). New York: Academic Press.

Forgas, J. P. (1994). Sad and guilty? Affective influences on the explanation of conflict episodes. *Journal of Personality and Social Psychology, 66*, 56-68.

Forgas, J. P. (1995). Emotion in social judgments: Review and a new affect infusion model (AIM). *Psychological Bulletin, 117*, 39-66.

Förster, J., & Liberman, N. (2001). The role of attribution of motivation in producing postsuppressional rebound. *Journal of Personality and Social Psychology, 81*, 377-390.

Förster, J., & Liberman, N. (2004). A motivational model of post-suppressional rebound. In W. Stroebe & M. Hewstone (Eds.), *European Review of Social Psychology* (Vol. 15, pp. 1-32). Sussex: John Wiley & Sons Ltd.

Fragale, A. R. (2006). The power of powerless speech: The effects of speech style and task interdependence on status conferral. *Organizational Behavior and Human Decision Processes, 101*, 243-261.

Fragale, A., Overbeck, J., & Neale, M. (2008, June). *Power prerequisites: The legitimating effects of status on power possession and use*. Paper presented at

the European Association of Experimental Social Psychology (EAESP) General Meeting, Opatija, Croatia.

French, J. R. P., & Raven, B. (1959). The bases of social power. In D. Cartwright (Ed.) *Studies in social power* (pp. 150-167). Ann Arbor: University of Michigan Press.

Freud, S. (1930). *Civilization and its discontents*. New York: W. W. Norton & Company.

Frijda, N. H. (1986). *The emotions*. Cambridge: Cambridge University Press.

Galinsky, A. D., Gruenfeld, D. H., & Magee, J. C. (2003). From power to action. *Journal of Personality and Social Psychology, 85,* 453-466.

Galinsky, A. D., Magee, J. C., Gruenfeld, D. H, Whitson, J., & Liljenquist, K. A. (in press). Social power reduces the strength of the situation: Implications for creativity, conformity, and dissonance. *Journal of Personality and Social Psychology.*

Galinsky, A. D., Magee, J. C., Inesi, M. E., & Gruenfeld, D. H (2006). Power and perspectives not taken. *Psychological Science, 17*, 1068-1074.

Galinsky, A. D., & Moskowitz, G. B. (2000). Perspective-taking: Decreasing stereotype expression, stereotype accessibility, and in-group favoritism. *Journal of Personality and Social Psychology, 78*, 708-724.

Gallois, C., Callan, V.J. & Palmer, J.M. (1992). The influence of applicant communication style and interviewer characteristics on hiring decisions. *Journal of Applied Social Psychology, 22*, 1041-1060.

Gawronski, B., & Bodenhausen, G. V. (2005). Accessibility effects on implicit social cognition: The role of knowledge activation and retrieval experiences. *Journal of Personality and Social Psychology, 89*, 672-685.

Gawronski, B., & Bodenhausen, G. V. (2006). Associative and propositional processes in evaluation: An integrative review of implicit and explicit attitude change. *Psychological Bulletin, 132*, 692-731.

Gawronski, B., Bodenhausen, G. V., & Banse, R. (2005). We are, therefore they aren't: Ingroup construal as a standard of comparison for outgroup judgments. *Journal of Experimental Social Psychology, 41*, 515–526.

Giner-Sorolla, R. (2004). Is affective material in attitudes more accessible than cognitive material? The moderating role of attitude basis. *European Journal of Social Psychology, 34*, 761-780.

Giessner, S. R., & Schubert, T. W. (2007). High in the hierarchy: How vertical location and judgments of leaders' power are interrelated. *Organizational Behavior & Human Decision Processes, 104*, 30-44.

Gigerenzer, G., & Regier, T. P. (1996). How do we tell an association from a rule? *Psychological Bulletin, 119*, 23-26.

Gold, G. J., & Raven, B. H. (1992). Interpersonal influence strategies in the Churchill-Roosevelt bases-for-destroyers exchange. *Journal of Social Behavior and Personality, 7*, 245-272.

Goldstone, R. (1994). Influences of categorization on perceptual discrimination. *Journal of Experimental Psychology: General, 123*, 178–200.

Gonzaga, G. C., Keltner, D., Londahl, E. A., & Smith, M. D. (2001). Love and the commitment problem in romantic relations and friendship. *Journal of Personality and Social Psychology, 81*, 247-262.

Goodwin, S. A., Gubin, A., Fiske, S. T., & Yzerbyt, V. Y. (2000). Power can bias impression processes: Stereotyping subordinates by default and by design. *Group Processes and Intergroup Relations, 3*, 227-256.

Goodwin, S. A., Operario, D., & Fiske, S. T. (1998). Situational power and interpersonal dominance facilitate bias and inequality. *Journal of Social Issues, 54*, 677-698.

Gough, H. G. (1987). *California Psychological Inventory administrator's guide*. Palo Alto, CA: Consulting Psychologists Press.

Gray, J. A. (1982). *The neuropsychology of anxiety*. New York: Oxford University Press.

Gray, J. A. (1987). *The psychology of fear and stress*. New York: Cambridge University Press.

Gray, J. A. (1991). Neural systems, emotion, and personality. In J. Madden (Ed.), *Neurobiology of learning, emotion, and affect* (pp. 273–396). New York: Raven Press.

Green, D. M., & Swets, J. A (1966). *Signal detection theory and psychophysics*. NY: Wiley.

Greene, J. D., Sommerville, R. B., Nystrom, L. E., Darley, J. M., & Cohen, J. D. (2001). An fMRI investigation of emotional engagement in moral judgment. *Science, 293*, 2105-2108.

Greenwald, A. G. (1968). Cognitive learning, cognitive response to persuasion, and attitude change. In A. G. Greenwald, T. C. Brock, & T. M. Ostrom (Eds.), *Psychological foundations of attitudes* (pp. 148-170). New York: Academic Press.

Greifeneder, R., & Bless, H. (2007). Relying on accessible content versus accessibility experiences: The case of processing capacity. *Social Cognition, 25*, 853-881.

Greifeneder, R., & Bless, H. (2008). Depression and reliance on ease-of-retrieval experiences. *European Journal of Social Psychology, 38*, 213-230.

Griffitt, W. (1970). Environmental effects on interpersonal affective behavior: Ambient effective temperature and attraction. *Journal of Personality and Social Psychology, 64*, 740-752.

Gross, J. J., & John, O. P. (1995). Facets of emotional expressivity: Three self-report factors and their correlates. *Personality and Individual Differences, 19*, 555-568.

Gruenfeld, D. H. (1995). Status, ideology and integrative complexity on the U.S. Supreme Court: Rethinking the politics of political decision making. *Journal of Personality and Social Psychology, 68,* 5-20.

Gruenfeld, D. H, Keltner, D. J., & Anderson, C. (2003). The effects of power on those who possess it: How social structure can affect social cognition. In G. Bodenhausen & A. Lambert (Eds.), *Foundations of social cognition: A festschrift in honor of Robert S. Wyer, Jr.* (pp. 237-261). Mahwah, NJ: Erlbaum.

Gruenfeld, D. H., & Preston, J. (2000). Pending the status quo: Cognitive complexity in U.S. Supreme Court justices who overturn legal precedent. *Personality and Social Psychology Bulletin, 26*, 1013-1022.

Gruenfeld, D. H., Thomas-Hunt, M., & Kim, P. H. (1998). Cognitive flexibility, communication strategy, and integrative complexity in groups: Public versus private reactions to majority and minority status. *Journal of Experimental Social Psychology, 34*, 202-226.

Guinote, A. (2001). The perception of intragroup variability in a minority and a non-minority context: When adaption leads to outgroup differentiation. *British Journal of Social Psychology, 40*, 117-132.

Guinote, A. (2004). Group size, outcome dependency, and power: Effects on perceived and actual group variability. In V. Yzerbyt, C. Judd, & O. Corneille (Eds). *The psychology of group perception: Contributions to the study of homogeneity, entitativity, and essentialism* (pp. 221-236). New York: Psychology Press.

Guinote, A. (2007a). Behaviour variability and the Situated Focus Theory of Power. In W. Stroebe, & M. Hewstone (Eds.), *European Review of Social Psychology* (Vol. 18, pp. 256-295). New York: Wiley.

Guinote, A. (2007b). Power and Goal Pursuit. *Personality and Social Psychology Bulletin, 33*, 1076-1087.

Guinote, A. (2007c). Power affects basic cognition: Increased attentional inhibition and flexibility. *Journal of Experimental Social Psychology, 43*, 685-697.

Guinote, A. (2007d). Power and the suppression of unwanted thoughts: Does control over others decrease control over the Self? *Journal of Experimental Social Psychology, 43*, 433-440.

Guinote, A. (2008a). *In touch with your feelings: Power, behavior, and inner states.* Manuscript submitted for publication.

Guinote, A (2008b). Power and affordances: When the situation has more power over powerful than over powerless individuals. *Journal of Personality and Social Psychology, 95,* 237-252.

Guinote, A., Brown, M., & Fiske, S. T. (2006). Minority status decreases sense of control and increases interpretive processing. *Social Cognition, 24,* 170-187.

Guinote, A., Domingos, A., & Weick, M. (2008). *Group-size affects expectancy confirmation in social perception.* Manuscript in preparation.

Guinote, A., Judd, C. M., & Brauer, M. (2002). Effects of power on perceived and objective group variability: Evidence that more powerful groups are more variable. *Journal of Personality and Social Psychology, 82,* 708-721.

Guinote, A. & Weick, M. (2008). *Power, the person, and the situation: Magnified responsiveness in context.* Manuscript in preparation.

Haddock, G. (2000). Subjective ease of retrieval and attitude-relevant judgments. In Bless, H., & Forgas, J. P. (Eds.), *The message within: The role of subjective experience in social cognition and behavior* (pp. 125-142). Philadelphia: Psychology Press.

Haddock, G., Rothman, A.J., Reber, R., & Schwarz, N. (1999). Forming judgments of attitude certainty, intensity, and importance: The role of subjective experience. *Personality and Social Psychology Bulletin, 25,* 771-782.

Hambrick, D. C., & Mason, P. A. (1984). Upper echelons: The organization as a reflection of its top managers. *Academy of Management Review, 9,* 193-206.

Hansen, J., Dechêne, A. & Wänke, M. (2008). Fluency expectation as moderator of subjective truth. *Journal of Experimental Social Psychology, 44,* 687-691.

Hansen, J. & Wänke, M. (in press). It's the difference that counts: Expectancy/experience discrepancy moderates the use of ease of retrieval in attitude judgments. *Social Cognition.*

Harper, R. G. (1985). Power, dominance, and nonverbal behavior: An overview. In S. L. Ellyson & J. F. Dovidio (Eds.), *Power, dominance, and nonverbal behavior* (pp. 29-48). New York: Springer-Verlag.

Hautus, M. J. (1995). Corrections for extreme proportions and their biasing effects on estimated values of d'. *Behavior Research Methods, Instruments, & Computers, 27*, 46-51.

Hayashi, A. (2001). When to trust your gut. *Harvard Business Review, 79*, 59-65.

Hecht, D. B., & LaFrance, M. (1998). Licence or obligation to smile: The effect of power and sex on amount and type of smiling. *Personality and Social Psychology Bulletin, 24*, 1332-1342.

Heidegger, M. (1982). *The basic problems of phenomenology* (A. Hofstadter, Trans.). Bloomington: Indiana University Press. (Original work published 1975)

Heider, F. (1958). *The psychology of interpersonal relations.* New York: Wiley.

Higgins, E. T. (1996). Knowledge activation: Accessibility, applicability, and salience. In E. T. Higgins & A. W. Kruglanski (Eds.), *Social psychology: Handbook of basic principles* (pp. 133-168). New York: Guilford Press.

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

Higgins, E. T. (1998). The aboutness principle: A pervasive influence on human inference. *Social Cognition, 16*, 173-198.

Higgins, E. T. (1999). Promotion and prevention as motivational duality: Implications for evaluative processes. In S. Chaiken & Y. Trope (Eds.), *Dual-process theories in social psychology* (pp. 503–525). New York: Guilford Press.

Hogan, R., Curphy, G.J., & Hogan, J. (1994). What we know about leadership: effectiveness and personality. *American Psychologist, 49*, 493-504.

Hogg, M. A. (2001). A social identity theory of leadership. *Personality and Social Psychology Review, 5*, 184-200.

Hollander, E. P. (1958). Conformity, status, and idiosyncrasy credit. *Psychological Review, 65*, 117-127.

Horne, T., & Ylonen, H. (1998). Heritabilities of dominance-related traits in male bank voles (Clethrionomys glareolus). *Evolution, 52*, 894-899.

Howard, E. S., Gardner, W. L., & Thompson, L., (2007). The role of the self-concept and the social context in determining the behavior of power holders: Self-construal in intergroup versus dyadic dispute resolution negotiations. *Journal of Personality and Social Psychology, 93*, 614-631.

Howell, D. C (1995). *Fundamental statistics for the behavioral sciences* (3rd ed.). Belmont: Thomson.

Husserl, E. (1931). *Ideas: General introduction to pure phenomenology* (W.R. Boyce Gibson, Trans.). London, UK: George Allen & Unwin Ltd. (Original work published 1913)

Isen, A. M., Shalker, T. E., Clark, M. S., & Karp, L. (1978). Affect, accessibility, of material in memory, and behaviour: A cognitive loop? *Journal of Personality and Social Psychology, 36*, 1-12.

Jacoby, L. L.,Woloshyn, V., & Kelley, C. (1989). Becoming famous without being recognized: Unconscious influences of memory produced by divided attention. *Journal of Experimental Psychology: General, 118*, 115–125.

James, W. (1893). *The principles of psychology* (Vol. 1). New York: Holt.

Jenkins, J. M., & Astington, J. W. (1996). Cognitive factors and family structure associated with theory of mind in young children. *Developmental Psychology, 32*, 70–78.

Johnson, M. (1987). *The body in the mind: The bodily basis of meaning, imagination, and reason.* University of Chicago Press.

Jordan, J. (2006). *The paradox of power: Power, approach, and moral judgment.* Unpublished Manuscript.

Josephs, R. A., Sellers, J. G., Newman, M. L., & Mehta, P. H. (2006). The mismatch effect: When testosterone and status are at odds. *Journal of Personality and Social Psychology, 90*, 999-1013.

Jost, E. E., & Banaji, M. R. (1994). The role of stereotyping in system justification and the production of false consciousness. *British Journal of Social Psychology, 33,* 1-27.

Jost, T. J., & Kay, A. C. (2005). Exposure to benevolent sexism and complementary gender stereotypes: Consequences for specific and diffuse forms of system justification. *Journal of Personality and Social Psychology, 88*, 498-509.

Judd, C. M., & Brauer, M. (1995). Repetition and evaluative extremity. In R. E. Petty & J. A. Krosnick (Eds.), *Attitude strength: Antecedents and consequences* (pp. 43–71). Hillsdale, NJ: Erlbaum.

Judge, T. A., Bono, J. E., Ilies, R., & Gerhardt, M. W. (2002). Personality and leadership: A qualitative and quantitative review. *Journal of Applied Psychology, 87*, 765-780.

Judge, T. A., & Cable, D. M. (2004). The effect of physical height on workplace success and income: Preliminary test of a theoretical model. *Journal of Applied Psychology, 89,* 428-441.

Kahneman, D. (2003). A perspective on judgment and choice: Mapping bounded rationality. *American Psychologist, 58,* 697-720.

Kahneman, D., & Frederick, S. (2002). Representativeness revisited: Attribute substitution in intuitive judgment. In T. Golovich, D. Griffin, & D. Kahneman

(Eds.), *Heuristics and biases: The Psychology of intuitive judgment* (pp. 49-81). Cambridge, UK: Cambridge University Press.

Kelley, C. M., & Lindsay, D. S. (1993). Remembering mistaken for knowing: Ease of retrieval as a basis for confidence in answers to general knowledge questions. *Journal of Memory and Language, 32*, 1-24.

Kelley, H. H. (1971). Attribution theory in social interaction. In E. E. Jones, E. D. Kanouse, H. H. Kelley, R. E. Nisbett, S. Valins, & B. Weiner (Eds.), *Attribution: Perceiving the causes of behavior*. New York: General Learning Press.

Keltner, D., Gruenfeld, D. H., & Anderson, C. (2003). Power, approach, and inhibition. *Psychological Review, 110*, 265-284.

Keltner, D., & Robinson, R. J. (1996). Extremism, power, and the imagined basis of social conflict. *Current Directions in Psychological Science, 5*,101–105.

Keltner, D., & Robinson, R. J. (1997). Defending the status quo: Power and bias in social conflict. *Personality and Social Psychology Bulletin, 23*, 1066-1077.

Keltner, D., Young, R. C., Heerey, E. A., Oemig, C., & Monarch, N. D. (1998). Teasing in hierarchical and intimate relations. *Journal of Personality and Social Psychology, 75*, 1231–1247.

Kemper, T. D. (1991). Predicting emotions from social relations. *Social Psychology Quarterly, 54*, 330–342.

Kenny, D. A., Kashy, D. A., & Bolger, N. (1998). Data analysis in social psychology. In D. Gilbert, S. Fiske, & G. Lindzey (Eds.), *Handbook of social psychology* (4th ed., Vol. 1, pp. 233-265). Boston, MA: McGraw-Hill.

Kipnis, D. (1972). Does power corrupt? *Journal of Personality and Social Psychology, 24,* 33-41.

Kipnis, D. (1976). *The powerholders*. Chicago, IL: University of Chicago Press.

Kipnis, D. (1984). The use of power in organizations and in interpersonal settings. *Applied Social Psychology Annual, 5*, 179-210.

Kipnis, D. (2001). Using power: Newton's second law. In A. Y Lee-Chai & J. A. Bargh (Eds.), *The use and abuse of power* (pp. 3-17). Philadelphia, PA: Psychology Press.

Kipnis, D. M., Castell, P. J., Gergen, M., & Mauch, D. (1976). Metamorphic effects of power. *Journal of Applied Psychology, 61*, 127-135.

Kirkpatrick, S. A., & Locke, E. A. (1991). Leadership: do traits really matter? *Academy of Management Executive, 5*, 48-60.

Kisfalvi, V. & Pitcher, P. (2003). Doing what feels right: The influence of CEO character and emotions on top management team dynamics. *Journal of Management Inquiry, 12*, 42-66.

Kitayama, S., Duffy, S., Kawamura, T., & Larsen, J. (2003). Perceiving an object and its context in different cultures: A cultural look at new look. *Psychological Science, 14*, 201-206.

Koslowsky, M., & Schwarzwald, J. (2001). The power interaction model. In A. Y Lee-Chai & J. A. Bargh (Eds.), *The use and abuse of power* (pp. 195-214). Philadelphia, PA: Psychology Press.

Kruglanski, A. W., Erb, H.-P., Pierro, A., Mannetti, L., & Chung, W. Y. (2006). On parametric continuities in the world of binary either ors. *Psychological Inquiry, 17*, 153-165.

Külpe, O. (1973). Outlines of psychology. London: Arno Press Inc. (reprint of the 1895 ed. published by S. Sonnenschein).

Kunda, Z. (1990). The case of motivated reasoning. *Psychological Bulletin, 108*, 480-498.

Kurzban, R. Tooby, J., & Cosmides, L. (2001). Can race be erased? Coalitional computation and social categorization. *Proceedings of the National Academy of Sciences, 98*, 15387-15392.

Lakoff, G., & Johnson, M. (1999). *Philosophy in the flesh: The embodied mind and its challenge to Western thought*. New York, NY: Basic Books.

Laird, J. D., & Bresler, C. (1990). William James and the mechanisms of emotional experience. *Personality and Social Psychology Bulletin, 16*, 636-651.

Lautenschlager, G. J. (1989). A comparison of alternatives to conducting Monte Carlo analyses for determining parallel analysis criteria. *Multivariate Behavioral Research, 24*, 365-395.

Lazarus, R. S. (1991). Emotion and adaptation. New York: Oxford University Press.

LeDoux. J. E. (1996). *The emotional brain: The mysterious underpinnings of emotional life*. New York: Simon & Schuster.

Lerner, J. S., & Gonzales, R. M. (2005). Forecasting one's future based on fleeting subjective experiences. *Personality and Social Psychology Bulletin, 31*, 454-466.

Lerner, J. S., & Keltner, D. (2001). Fear, anger, and risk. *Journal of Personality and Social Psychology, 81*, 146-159.

Lerner, J. S., & Tetlock, P. E. (1999). Accounting for the effects of accountability. *Psychological Bulletin, 125*, 255–275.

Lewin, K. (1941). Regression, retrogression and development. *University of Iowa Studies of Child Welfare, 18*, 1-43.

Lewin, K., & Lippitt, R. (1938). An experimental approach to the study of autocracy and democracy. A preliminary note. *Sociometry, 1*, 292-300.

Loewenstein, G. (1996). Out of control: Visceral influences on behavior. *Organizational behaviour and human decision processes, 65*, 272–292.

Lord, R. G., De Vader, C. L., & Alliger, G. M. (1986). A meta-analysis of the relation between personality traits and leadership perceptions: An application of validity generalization procedures. *Journal of Applied Psychology, 71*, 402-410.

Lorenzi-Cioldi, F. (1998). Group status and perceptions of homogeneity. In W. Stroebe & M. Hewstone (Eds.), *European review of social psychology* (Vol. 9, pp. 31–75). Chichester, England: Wiley.

Luce, M. F., Bettman, J. R., & Payne, J. W. (1997). Choice processing in emotionally difficult decisions. *Journal of Experimental Psychology: Learning, Memory, and Cognition, 23*, 384-405.

Lukes, S. (1974). *Power: A radical view*. London, UK: Macmillian.

Magee, J. C., Galinsky, A. D., & Gruenfeld, D. H. (2007). Power, propensity to negotiate, and moving first in competitive interactions. *Personality and Social Psychology Bulletin, 33*, 200-212.

Maheswaran, D. & Chaiken, S. (1991). Promoting systematic processing in low-motivation settings: Effects of incongruent information on processing and judgment. *Journal of Personality and Social Psychology, 1*, 13-25.

Maner, J. K., DeWall, C. N., & Gailliot, M. T. (2008). Selective attention to signs of success: Social dominance and early stage interpersonal perception. *Personality and Social Psychology Bulletin, 34*, 488-501.

Mangan, B. (1993). Taking phenomenology seriously: the "fringe" and its implications for cognitive research. *Consciousness and Cognition, 2*, 89-108.

Mann, R. D. (1959). A review of the relationship between personality and performance in small groups. *Psychological Bulletin, 66*, 241-70.

Mannix, E. A. (1994). Will we meet again? Effects of power, distribution norms, and scope of future interaction in small group negotiation. *International Journal of Conflict Management, 5*, 343-368.

Mannix, E. A., & Neale, M. A. (1993). Power imbalance and the pattern of exchange in dyadic negotiation. *Group Decision and Negotiation, 2*, 119-133.

Manz, C. C., & Gioia, D. A. (1983). The interrelationship of power and control. *Human Relations, 36*, 459-476.

Martin, L. L., & Tesser, A. (Eds). (1995). *Striving and Feeling: Interactions Among Goals, Affect, and Self-Regulation*. Mahwah, NJ: Lawrence Erlbaum Associates.

Mazur, A. (1985). A biosocial model of status in face-to-face primate groups. *Social Forces, 64*, 377-402.

Mazur, A., & Booth, A. (1998). Testosterone and dominance in men. *Behavioral and Brain Sciences, 21*, 353-397.

Mazzoni, G., & Nelson, T. O. (1998). *Metacognition and Cognitive Neuropsychology: Monitoring and control processes*. Mahwah, NJ: Erlbaum.

McClelland, D. C. (1975). *Power: The inner experience*. New York: Irvington.

McClelland, D. C (1976). *The achieving society*. Oxford, UK: Irvington.

McGlone, M. S., & Tofighbakhsh, J. (2000). Birds of a feather flock conjointly (?): Rhyme as reason in aphorisms. *Psychological Science, 11*, 424-428.

Megargee, E. I. (1969). Influence of sex roles on the manifestation of leadership. *Journal of Applied Psychology, 53*, 377-382.

Mehrabian, A. (1972). *Nonverbal communication.* Oxford: Irvington.

Mellers, B. A. (2000). Choice and the relative pleasure of consequences. *Psychological Bulletin, 126*, 910–924.

Menon, G., & Raghubir, P. (2003). Ease of retrieval as an automatic input in judgments: A mere-accessibility framework. *Journal of Consumer Research, 30*, 230-243.

Merleau-Ponty, M. (1996). *Phenomenology of perception* (C. Smith, Trans.). London: Routledge. (Original work published 1945).

Miller, G. A. & Johnson-Laird, P. N. (1976). *Language and perception.* Harvard University Press.

Mills, C. W. (1956). *The power elite*. New York: Oxford University Press.

Morris, W. N. (1989). *Mood: The frame of mind.* New York: Springer-Verlag.

Moskowitz, D. S. (2004). Does elevated power lead to approach and reduced power to inhibition? Comment on Keltner, Gruenfeld and Anderson (2003). *Psychological Review, 11*, 808-811.

Moskowitz, G. B., Skurnik, I., & Galinsky, A. D. (1999). The history of dual-process notions, and the future of preconscious control. In S. Chaiken, & Y. Trope (Eds.), *Dual-process theories in social psychology* (pp. 12-36). New York: Guilford Press.

Mulder, M. (1977). *The daily power game*. Leiden: H.E. Stenfert Kroese b.v.

Mullen, B., Brown, R., & Smith, C. (1992). Ingroup bias as a function of salience, relevance, and status: An integration. *European Journal of Social Psychology, 22*, 103–122.

Müller, P. A. (2006). *Beyond procedure's content – Cognitive subjective experiences in procedural justice judgments*. Unpublished doctoral dissertation, University of Mannheim, Germany.

Myers, I.B. & McCaulley, M.H. (1985). *Manual: A guide to the development and use of the Myers-Briggs Type Indicator*. Palo Alto, CA: Consulting Psychologists Press.

Nemeth, C. (1986). Differential contributions of majority and minority influence. *Psychological Review, 93*, 23–32.

Nesler, M. S., Aguinis, H., Quigley, B. M., Lee, S. J., & Tedeschi, J. T. (1999). The development and validation of a scale measuring global social power based on French and Raven's power taxonomy. *Journal of Applied Social Psychology, 29*, 750-771.

Ng, S. H. (1977). Structural and non-structural aspects of power distance reduction tendencies. *European Journal of Social Psychology, 7*, 317–345.

Ng, S. H. (1980). *The social psychology of power*. New York: Academic Press.

Ng, S. H., & Cram, F. (1988). Intergroup bias by defensive and offensive groups in majority and minority conditions. *Journal of Personality and Social Psychology, 55*, 749-757.

Nietzsche, F. (1883-1888/1968). *The will to power* (W. Kaufman & R. J Hollingdale, Trans., W. Kaufmann, Ed.). New York: Vintage.

Nussbaum, M.C. (1998). Morality and Emotions. In E. Craig (Ed.), *Routledge Encyclopedia of Philosophy* (Vol. 6, pp. 558-564). London & New York: Routledge.

Operario, D., & Fiske, S. T. (2001). Effects of trait dominance on powerholders' judgments of subordinates. *Social Cognition, 19*, 161-180.

Oppenheimer, D. M. (2004). Spontaneous discounting of availability in frequency judgment tasks. *Psychological Science, 15*, 100-105.

Oppenheimer, D. M. (2005). Consequences of erudite vernacular utilized irrespective of necessity: Problems with using long words needlessly. *Journal of Applied Cognitive Psychology, 20*, 139–156.

Oppenheimer, D. M, & Frank, M. C. (2008). A rose in any other font would not smell as sweet: Effect of perceptual fluency on categorization. *Cognition, 106*, 1178-1194.

Ortony, A., Clore, G. L., & Collins, A. (1988). *The cognitive structure of emotions*. New York: Cambridge University Press.

Overbeck, J. R., & Park, B. (2001). When power does not corrupt: Superior individuation processes among powerful perceivers. *Journal of Personality and Social psychology, 81*, 549-565.

Overbeck, J. R., & Park, B. (2006). Powerful perceivers, powerless objects: Flexibility of powerholders' social attention. *Organizational Behavior and Human Decision Processes, 99*, 227-243.

Pacini, R., & Epstein, S. (1999). The relation of rational and experiential information processing styles to personality, basic beliefs, and the ratio-bias phenomenon. *Journal of Personality and Social Psychology, 76*, 972-987.

Pam, M. T., Cohen, J. B., Pracejus, J. W., & Hughes, G. D. (2001). Affect monitoring and the primacy of feelings. *Journal of Consumer Research, 28*, 167-188.

Park, B., & Judd, C. M. (1990). Measures and models of perceived group variability. *Journal of Personality and Social Psychology, 59*, 173-191.

Parsons, T. (1963). On the concept of political power. *Proceedings of the American Philosophical Society, 107*, 232-262.

Parton, S. R., Siltanen, S. A., Hosman, L., & Langenderfer, J. (2002). Employment interview outcomes and speech style effects. *Journal of Language and Social Psychology , 21*, 144–161.

Pearlin, L. I., & Schooler, C. (1978). The structure of coping. *Journal of Health and Social Behavior, 19*, 2-21.

Pennebaker, J. W., Gonder-Frederick, L., Cox, D. J., & Hoover, C. W. (1985). The perception of general vs. specific visceral activity and the regulation of health-related behavior. In E. S. Katkin & S. B. Manuck (Eds.), *Advances in behavioral medicine* (Vol. 1, pp. 165-198). Greenwich, CT: JAI Press.

Peters, E. (2006). The functions of affect in the construction of preferences. In S. Lichtenstein & P. Slovic (Eds.), *The construction of preference* (pp. 454-463). New York: Cambridge University Press.

Peters, E., Västfjäll, D., Gärling, T., & Slovic, P. (2006). Affect and decision making: A "hot" topic. *Journal of Behavioral Decision Making, 19*, 79-85.

Pfister, H., & Boehm, G. (2008). The multiplicity of emotions: A framework of emotional functions in decision making. *Judgment and Decision Making, 3*, 5-17.

Pincombe, J. L., Luciano, M., Martin, N. G., & Wright, M. J. (2007). Heritability of NEO PI-R extraversion facets and their relationship with IQ. *Twin Research and Human Genetics, 10*, 462-469.

Pittman, T. S. (1993). Control motivation and attitude change. In G. Weary, F. Gleicher, & K. Marsh (Eds.), *Control motivation and social cognition* (pp. 157-175). New York: Springer-Verlag.

Pittman, T. S., & D'Agostino, P. R. (1989). Motivation and cognition: Control deprivation and the nature of subsequent information processing. *Journal of Experimental Social Psychology, 25,* 465-480.

Plomin, R., DeFries, J. C., McClearn, G. E., & McGuffin, P. (2001). *Behavioral Genetics (4th Ed.)*. New York: Freeman.

Powlishta, K. K. (1995). Intergroup processes in childhood: Social categorization and sex role development. *Developmental Psychology, 31*, 781-788.

Pratto, F., Sidanius, J., Stallworth, L.M., & Malle, B.F. (1994). Social dominance orientation: A personality variable predicting social and political attitudes. *Journal of Personality and Social Psychology, 67*, 741-763.

Price, M. C., & Norman, E. (2008). Intuitive decisions on the fringes of consciousness: Are they conscious and does it matter? *Judgment and Decision Making, 3*, 28-41.

Prinz, J. (2006). The emotional basis of moral judgments. *Philosophical Explorations, 9*, 29-43.

Prinz, W. (1997). Perception and action planning. *European Journal of Cognitive Psychology, 9*, 129 – 154.

Prinz, W., & Barsalou, L. W. (2000). Steering a course for embodied representation. In E. Dietrich & A. Markman (Eds.), *Cognitive dynamics: Conceptual change in human and machines* (pp. 51-77). Cambridge, MA: MIT Press.

Proffitt, D. R., Stefanucci, J., Banton, T., & Epstein, W. (2003). The role of effort in perceiving distance. *Psychological Science, 14*, 106-112.

Raghubir, P., & Menon, G. (2005). When and why is ease of retrieval informative? *Memory and Cognition, 33*, 821-832.

Raven, B. H. (1993). The bases of power: Origins and recent developments. *Journal of Social Issues, 49*, 227-251.

Raven, B. H. (1999). Influence, power, religion, and the mechanisms of social control. *Journal of Social Issues, 55*, 161-186.

Raven, B. H. (2001). Power/interaction and interpersonal influence. In A. Y. Lee-Chai & J. A. Bargh (Eds.), *The use and abuse of power* (pp. 217-240). Philadelphia, PA: Psychology Press.

Raven, B. H., Schwarzwald, J., & Koslowsky, M. (1998). Conceptualizing and measuring a power/interaction model of interpersonal influence. *Journal of Applied Social Psychology, 28*, 307-332.

Reber, R., & Schwarz, N. (1999). Effects of perceptual fluency on judgments of truth. *Consciousness and Cognition, 8*, 338-342.

Reber, R., & Schwarz, N., & Winkielman, P. (1998). Effects of perceptual fluency on affective judgments. *Psychological Science, 9*, 45-48.

Reber, R., Schwarz, N. & Winkielman, P. (2004). Processing fluency and aesthetic pleasure: Is beauty in the perceiver's processing experience? *Personality and Social Psychology Review, 8*, 364-382.

Reber, R., Wurtz, P., & Zimmermann, T. D (2004). Exploring "fringe" consciousness: The subjective experience of perceptual fluency and its objective bases. *Consciousness and Cognition, 13*, 47-60.

Richenson, J. A. & Ambady, N. (2001). Effects of situational power on automatic racial prejudice. *Journal of Experimental Social Psychology, 39*, 177-183.

Richetin, J., Perugini, M., Adjali, I., & Hurling, R. (2007). The moderator role of intuitive versus deliberative decision making for the predictive validity of implicit and explicit measures. *European Journal of Personality, 21*, 529-546.

Ridgeway, C. (2004). Status characteristics and leadership. In D. Van Knippenberg & M. Hogg (Eds.), *Leadership and Power: Identity Processes in Groups and Organizations* (pp. 65-78). London: Sage.

Rind, B., & Kipnis, D. (1999). Changes in self-perceptions as a result of successfully persuading others. *Journal of Social Issues, 55*, 141–156.

Rodin, J. (1986). Aging and health: Effects of the sense of control. *Science, 233*, 1271-1276.

Rodriguez-Bailon, R., Moya, M., & Yzerbyt, V. (2000). Why do superiors attend to negative stereotypic information about their subordinates? Effects of power legitimacy on social perception. *European Journal of Social Psychology, 30*, 651-671.

Roseman, I. J. (1984). Cognitive determinants of emotion: A structural theory. *Review of Personality & Social Psychology, 5*, 11-36.

Rothman, A.J., & Hardin, C.D. (1997). Differential use of the availability heuristic in social judgments. *Personality and Social Psychology Bulletin, 23*, 123-138.

Rothman, A.J., & Schwarz, N. (1998). Constructing perceptions of vulnerability: Personal relevance and the use of experiential information in health judgments. *Personality and Social Psychology Bulletin, 24*, 1053-1064.

Rotter, J. B. (1966). Generalized expectancies for internal versus external control of reinforcement. *Psychological Monographs, 80*, 1-28.

Ruder, M., & Bless, H. (2003). Mood and the reliance on the ease of retrieval heuristic. *Journal of Personality and Social Psychology, 85,* 1, 20-32.

Russell, B. (1938*). Power: A new social analysis*. New York: Norton.

Rusting, C. L., & Larsen, R. J. (1998). Diurnal patterns of unpleasant mood: Associations with neuroticism, depression, and anxiety. *Journal of Personality, 66*, 85-103.

Ryan, R. M., & Deci, E. L. (2000). Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *American Psychologist, 55*, 68-78.

Sachdev, I., & Bourhis, R. Y. (1991). Power and status differentials in minority and majority group relations. *European Journal of Social Psychology, 21*, 1–24.

Sanna, L. J., & Schwarz, N. (2003). Debiasing the hindsight bias: The role of accessibility experiences and (mis)attributions. *Journal of Experimental Social Psychology, 39*, 287-295.

Sartre, J.-P. (1956). *Being and nothingness* (H. Barnes, Trans.). NY: Washington Square Press. (Original work published 1943).

Savin-Williams, R. C. (1977). Dominance in a human adolescent group. *Animal Behavior, 25*, 400–406.

Savin-Williams, R. C. (1979). Dominance hierarchies in groups of early adolescents. *Child Development, 50*, 923-935.

Scarr, S. (1969). Social Introversion-Extraversion as a heritable response. *Child Development, 40*, 823-832.

Scherer, K. R. (1984). On the nature and function of emotion: A component process approach. In K. R. Scherer & P. Ekman (Eds.), *Approaches to emotion* (pp. 293-317). Hillsdale, NJ: Erlbaum.

Schmid Mast, M. (2004). Men are hierarchical, women are egalitarian: An implicit gender stereotype. *Swiss Journal of Psychology, 63*, 107-111.

Schmid Mast, M., & Hall, J. A. (2003). Anybody can be a boss but only certain people make good subordinates: Behavioral impacts of striving for dominance and dominance aversion. *Journal of Personality, 71*, 871-891.

Schmidt-Atzert, L. (1988). Affect and cognition: On the chronological order of stimulus evaluation and emotion. In K. Fiedler & J. Forgas (Eds.), *Affect, cognition, and social behavior* (pp. 153-164). Toronto: Hogrefe.

Schubert, T. (2005). Your Highness: Vertical positions as perceptual symbols of power. *Journal of Personality and Social Psychology, 89*, 1-21.

Schunk, D., & Betsch C., (2006). Explaining heterogeneity in utility functions by individual differences in decision modes. *Journal of Economic Psychology, 27*, 386-401.

Schwarz, N. (1990). Feelings as information: Informational and motivational functions of affective states. In E. T. Higgins, & R. Sorrentino (Eds.), *Handbook of motivation and cognition: Foundations of social behavior* (Vol. 2, pp. 527-561). NY: Guilford Press.

Schwarz, N. (1998). Accessible content and accessibility experiences: The interplay of declarative and experiential information in judgment. *Personality and Social Psychology Review, 2*, 87-99.

Schwarz, N. (2000). Feelings, fit, and funny effects: A situated cognition perspective. *Journal of Marketing Research, 43*, 20-23.

Schwarz, N. (2004). Metacognitive experiences in consumer judgments and decision making. *Journal of Consumer Psychology, 14*, 332-348.

Schwarz, N., Bless, H., Strack, F., Klumpp, G., Rittenauer-Schatka, H., & Simons, A. (1991). Ease of retrieval as information: Another look at the availability heuristic. *Journal of Personality and Social Psychology, 61*, 195-202.

Schwarz, N., & Bohner, G. (2001). The construction of attitudes. In A. Tesser & N. Schwarz (Eds.), *Blackwell handbook of social psychology: Intraindividual processes* (Vol. 1, pp. 436-457). Oxford, UK: Blackwell.

Schwarz, N., & Clore, G. L. (1983). Mood, misattribution, and judgments of well-being: Informative and directive functions of affective states. *Journal of Personality and Social Psychology, 45*, 513-523.

Schwarz, N., & Clore, G. L. (1988). How do I feel about it? Informative functions of affective states. In K. Fiedler & J. Forgas (Eds.), *Affect, cognition, and social behavior* (pp. 44-62). Toronto: Hogrefe International.

Schwarz, N. & Clore, G. L. (1996). Feelings and phenomenal experience. In E. T. Higgins, & A. W. Kruglanski (Eds.), *Social psychology: Handbook of basic principles* (pp. 433-465). NY: Guilford Press.

Schwarz, N. & Clore, G. L. (2003). Mood as information: 20 years later. *Psychological Inquiry, 14*, 296-303.

Schwartz, B., Tesser, A., & Powell, E. (1982). Dominance cues in nonverbal behavior. *Social Psychology Quarterly, 45*, 114-120.

Schwarz, N., & Vaughn, L. A. (2002). The availability heuristic revisited: Ease of recall and content of recall as distinct sources of information. In T. Golovich, D. Griffin, & D. Kahneman (Eds.), *Heuristics and biases: The Psychology of intuitive judgment* (pp. 103-119). Cambridge, UK: Cambridge University Press.

Seamon, J. G., Brody, N., & Kauff, D. M. (1983). Affective discrimination of stimuli that are not recognized: II. Effect of delay between study and test. *Bulletin of the Psychonomic Society, 21*, 187–189.

Seligman, M. E. P. (1975). *Helplessness. On depression, development and death.* San Francisco: Freeman.

Semin, G. R., & Smith, E. R. (2002). Interfaces of social psychology with situated and embodied cognition. *Cognitive Systems Research, 3*, 385-396.

Seo, M.-S., & Barrett, L., F. (2007). Being emotional during decision making – good or bad? An empirical investigation. *Academy of Management Journal, 50*, 923-940.

Shah, A. K., & Oppenheimer, D. M. (2007). Easy does it: The role of fluency in cue weighting. *Judgment and Decision Making, 2*, 371-379.

Sidanius, J., & Pratto, F. (1999). *Social dominance: An intergroup theory of social hierarchy and oppression.* NY: Cambridge University Press.

Simmel, G. (1896). Superiority and subordination as subject-matter of sociology. *The American Journal of Sociology, 2*, 392-415.

Simon, B, & Brown, R. (1987). Perceived intragroup homogeneity in minority-majority contexts. *Journal of Personality and Social Psychology, 53*, 703-711.

Simon, B., & Hamilton, D. L. (1994). Self-stereotyping and social context: The effects of relative in-group size and in-group status. *Journal of Personality and Social Psychology, 66*, 699-711.

Simon, B., & Oakes, P. (2006). Beyond dependence: An identity approach to social power and domination. *Human Relations, 59*, 105–139.

Simon, H. A. (1957). *Models of man.* New York: Wiley.

Simon, H. (1976). Motivational and emotional controls of cognition. *Psychological Review., 74*, 29-39.

Simons, T., Pelled, L. H., & Smith, K. A. (1999). Making use of difference: Diversity, debate, and decision comprehensiveness in top management teams. *Academy of Management Journal, 42*, 662-673.

Skinner, E. A. (1995). Perceived control, motivation, and coping. In R. Plomin (Ed.), *Sage series on individual differences and development* (Vol. 8). London, UK: Sage.

Sloman, S. A. (1996). The empirical case for two systems of reasoning. *Psychological Bulletin, 119*, 3–22.

Slovic, P., Finucane, M., Peters, E., & MacGregor, D. G. (2002). The affect heuristic. In T. Gilovich, T. Griffin & D. Kahneman (Eds.), *Heuristics and biases: The psychology of intuitive judgment* (pp. 397–420). New York: Cambridge University Press.

Smith, C. A., & Lazarus, R. S. (1993). Appraisal components, core relational themes, and the emotions. *Cognition and Emotion, 7*, 233-269.

Smith, D. W. (2003). *Phenomenology*. In Stanford Encyclopaedia of Philosophy. Retrieved June 6, 2008, from Stanford Encyclopaedia of Philosophy: http://plato.stanford.edu/entries/phenomenology/

Smith, E. R., & Semin, G. (2004). Socially situated cognition. Cognition in its social context. *Advances in Experimental Social Psychology, 36*, 53-117.

Smith, P. K., & Bargh, J. A. (2008). Nonconscious effects of power on basic approach and avoidance tendencies. *Social Cognition, 26*, 1-24.

Smith, P. K., Jostmann, N. B., Galinsky, A. D., & van Dijk, W. W. (in press). Lacking power impairs executive functions. *Psychological Science.*

Smith, P. K., & Trope, Y. (2006). You focus on the forest when you are in charge of the trees: Power priming and abstract information processing. *Journal of Personality and Social Psychology, 90,* 578-596.

Spence, J. T., Helmreich, R. L., & Holahan, C. K. (1979). Negative and positive components of psychological masculinity and femininity and their relationship to self-reports of neurotic and acting out behaviors. *Journal of Personality and Social Psychology, 37,* 1673-1682.

Stanislaw, H., & Todorov, N. (1999). Calculation of signal detection theory measures. *Behavior Research Methods, Instruments, and Computers, 31,* 137-149.

Stevens, L., & Fiske, S. T. (2000). Motivated impressions of a powerholder: Accuracy under task dependency and misperception under evaluation dependency. *Personality and Social Psychology Bulletin, 26,* 907-922.

Stogdill, R. M. (1948). Personal factors associated with leadership: A survey of the literature. *Journal of Psychology, 25,* 35-71.

Strack, F. (1992). The different routes to social judgments: Experiential versus informational strategies. In L. L. Martin & A. Tesser (Eds.), *The construction of social judgments* (pp. 249-275). Hillsdale, NJ: Erlbaum.

Strack, F., & Deutsch, R. (2004). Reflective and impulsive determinants of social behavior. *Personality and Social Psychology Review, 8,* 220-247.

Sullivan, H. S. (1947). *Conceptions of modern psychiatry.* Washington, DC: William Alanson White Psychiatric Foundation.

Tenbrunsel, A. E., & Messick, D. M. (2001). Power asymmetries and the ethical atmosphere in negotiations. In J. M. Darley, D. M. Messick, & T. R. Tyler (Eds.). *Social Influences on Ethical Behavior in Organizations.* Mahwah, NJ: Lawrence Erlbaum.

Tetlock, P. E. (1992). The impact of accountability on judgment and choice: Toward a social contingency model. In M. P. Zanna (Ed.), *Advances in experimental social psychology* (Vol. 25, pp. 331–376). New York: Academic Press.

Theeuwes, J. (2004). Top-down search strategies cannot override attentional capture. *Psychonomic Bulletin and Review, 11*, 65-70.

Thibaut, J. W., & Kelley, H. H. (1959). *The social psychology of groups.* New York: Wiley.

Thompson, S. C , Cheek, P. R., & Graham, M. A. (1988). The other side of perceived control: Disadvantages and negative effects. In S. Spacapan & S. Oskamp (Eds.), *The social psychology of health* (pp. 69-93). Newbury Park, CA: Sage.

Tiedens, L. Z. (2001). Anger and advancement versus sadness and subjugation: The effects of negative emotion expressions on social status conferral. *Journal of Personality and Social Psychology, 80*, 86-94.

Tiedens, L. Z., Ellsworth, P. C., & Mesquita, B. (2000). Stereotypes about sentiments and status: Emotional expectations for high- and low-status group members. *Personality and Social Psychology Bulletin, 26*, 560–574.

Tiedens, L. Z., Ellsworth, P. C., & Moskowitz, D. S. (1998). Feeling your place: Emotional consequences of social status positions. Unpublished manuscript cited in Tiedens, L. Z., Ellsworth, P. C., & Mesquita, B. (2000). Stereotypes about sentiments and status: Emotional expectations for high- and low-status group members. *Personality and Social Psychology Bulletin, 26*, 560–574.

Tiedens, L. Z., & Fragale, A. R. (2003). Power moves: Complementarity in dominant and submissive nonverbal behavior. *Journal of Personality and Social Psychology, 84*, 558-568.

Tiedens, L. Z. & Linton, S. (2001). Judgment under emotional certainty and uncertainty: The effects of specific emotions and their associated certainty appraisals on cognitive processing. *Journal of Personality and Social Psychology, 81*, 973-988.

Tjosvold, D., Johnson, D. W., & Johnson, R. T. (1984). Influence strategy, perspective taking, and relationships between high and low power individuals in cooperative and competitive contexts. *Journal of Psychology, 116*, 187-202.

Tormala, Z.L., Petty, R.E., & Briñol, P. (2002). Ease of retrieval effects in persuasion: A self-validation analysis. *Personality and Social Psychology Bulletin, 28*, 1700-1712.

Turner, J. C. (2005). Explaining the nature of power: A three-process theory. *European Journal of Social Psychology, 35*, 1–22.

Tversky, A., & Kahneman, D. (1973). Availability: A heuristic for judging frequency and probability. *Cognitive Psychology, 5,* 207-232.

Unkelbach, C. (2006). The learned interpretation of cognitive fluency. *Psychological Science, 17*, 339-345.

Unkelbach, C. (2007). Reversing the truth effect: Learning the interpretation of processing fluency in judgments of truth. *Journal of Experimental Psychology: Learning, Memory and Cognition, 33*, 219-230.

Van Dijke, M., & Poppe, M. (2004). Social comparison of power: Interpersonal versus intergroup effects. *Group Dynamics, 8*, 13–26.

Van Dijke, M., & Poppe, M. (2006). Striving for power as a basis for social power dynamics. *European Journal of Social Psychology, 36*, 537-556.

Van Knippenberg, D., & Hogg, M. (2004). *Leadership and Power: Identity Processes in Groups and Organizations.* London: Sage.

Veroff, J. (1957). Development and validation of a projective measure of power motivation. *Journal of Abnormal and Social Psychology, 54*, 1-8.

Vescio, T. K., Gervais, S. J., Snyder, M., & Hoover, A. (2005). Power and the creation of patronizing environments: The stereotype-based behaviors of the powerful and their effects on female performance in masculine domains. *Journal of Personality and Social Psychology, 88,* 658-672.

Vescio, T. K., Snyder, M., & Butz, D. A. (2003). Power in stereotypically masculine domains: A social influence strategy X stereotype match model. *Journal of Personality and Social Psychology, 85, 1062-1078.*

Von Helversen, B., Gendolla, G. H. E, Winkielman, P., & Schmidt, R.E. (2008). Exploring the hardship of ease: Subjective and objective effort in the ease-of-processing paradigm. *Motivation and Emotion, 32,* 1-10.

Wänke, M., & Bless, H. (2000). The effects of subjective ease of retrieval on attitudinal judgments: The moderating role of processing motivation. In H. Bless & J. P. Forgas (Eds.). *The message within: The role of subjective experience in social cognition and behavior* (pp. 143-161). Philadelphia, US: Psychology Press.

Wänke, M., Bless, H., & Biller, B. (1996). Subjective experience versus content of information in the construction of attitude-judgments. *Personality and Social Psychology Bulletin, 22*, 1105-1113.

Wänke, M., Bohner, G., & Jurkowitsch, A. (1997). There are many reasons to drive a BMW: Does imagined ease of argument generation influence attitudes? *Journal of Consumer Research, 24*, 170-177.

Ward, G., & Keltner, D. (1998). Power and the consumption of resources. Unpublished manuscript cited in Keltner, D., Gruenfeld, D.H., & Anderson, C. (2003). Power, approach, and inhibition. *Psychological Review, 110*, 265-284.

Watson, D., Clark, L. A., & Tellegen, A. (1988). Development and validation of brief measures of positive and negative affect: The PANAS Scales. *Journal of Personality and Social Psychology, 47*, 1063–1070.

Weary, G., Marsh, K. L., Gleicher, F., & Edwards, J. A. (1993). Depression, control motivation, and the processing of information about others. In G. Weary, F. Gleicher, & K. L. Marsh (Eds.), Control motivation and social cognition (pp. 255-287). NY: Springer-Verlag.

Weber, M. (1947). *The theory of social and economic organization* (A. M. Henderson & T. Parsons, Trans.). New York: Oxford University Press.

Weber, M. (1948). *From Max Weber: Essays in Sociology* (H. H. Gerth & C. W. Wills, Trans. and Ed.). London, UK: Routledge and Kegan Paul.

Wegner, D. M., & Gilbert, D. T. (2000). Social Psychology – The science of human experience. In Bless, H., & Forgas, J. P. (Eds.), *The message within: The role of subjective experience in social cognition and behavior* (pp. 1-9). Philadelphia: Psychology Press.

Weick, M. (2004). *The impact of power on knowledge activation and use.* Unpublished Master thesis, University of Kent, Canterbury, UK.

Weick, M., (2007). *Stimulus-driven attention capture: Exploring boundaries of the effects of power on visual attention.* Unpublished raw data, University of Kent, Canterbury, UK.

Weick, M., Crisp, R, & Hogg, M. (2008a). *Different?! - I ain't no different. Power increases perceived similarity between the self and others*. Manuscript in preparation.

Weick, M., Crisp, R, & Hogg, M. (2008b). *Lack of power promotes self-stereotyping*. Manuscript in preparation.

Weick, M., & Guinote, A. (2008a). When subjective experiences matter: Power increases reliance on the ease of retrieval. *Journal of Personality and Social Psychology, 94*, 956-970.

Weick, M., & Guinote, A. (2008b). *How long will it take? Power, focal attention, and biased time predictions*. Manuscript submitted for publication.

Weisfeld, G. E., & Linkey, H. E. (1985). Dominance displays as indicators of a social success motive. In S. L. Ellyson & J. F. Dovidio (Eds.), *Power, dominance, and nonverbal behavior* (pp. 109-128). New York: Springer-Verlag.

White, R. W. (1959). Motivation reconsidered: The concepts of competence. *Psychological Review, 66*, 279-333.

Whittlesea, B. W. A. (1993). Illusions of familiarity. *Journal of Experimental Psychology: Learning, Memory, & Cognition, 19*, 1235-1253.

Whittlesea, B. W. A., & Williams, L. D. (1998). Why do strangers feel familiar, but friends don't? A discrepancy-attribution account of feelings of familiarity. *Acta Psychologica, 98*, 141-165.

Whittlesea, B. W. A., & Williams, L. D. (2000). The source of feelings of familiarity: The discrepancy-attribution hypothesis. *Journal of Experimental Psychology: Learning, Memory, and Cognition, 26*, 547-565.

Whittlesea, B. W. A., & Williams, L. D. (2001a). The discrepancy-attribution hypothesis: I. The heuristic basis of feeling of familiarity. *Journal of*

Experimental Psychology: Learning, Memory, and Cognition, 27, 3-13.

Whittlesea, B. W. A., & Williams, L. D. (2001b). The discrepancy-attribution hypothesis: II. Expectation, uncertainty, surprise, and feelings of familiarity. *Journal of Experimental Psychology: Learning, Memory, and Cognition, 27*, 14-33.

Wiggins, J. S., Trappnell, P. & Phillips, N. (1988). Psychometric properties and geometric characteristics of the Revised Interpersonal Adjective Scales (IAS-R). *Multivariate Behavioral Research, 23*, 517-530.

Wilkinson, D., Reese, G., & Guinote, A. (2008). *A powerful vision: Social power improves visual search behaviour*. Manuscript submitted for publication.

Wilson, P. R. (1968). Perceptual distortion of height as a function of ascribed academic status. *Journal of Social Psychology, 74*, 97-102.

Winkielman, P., & Berridge, K. C. (2004). Unconscious Emotion. *Current Directions in Psychological Science, 13*, 120-123.

Winkielman, P., & Cacioppo, J. T. (2001). Mind at ease puts a smile on the face: Psychophysiological evidence that processing facilitation increases positive affect. *Journal of Personality and Social Psychology, 81,* 989–1000.

Winkielman, P., & Schwarz, N. (2001). How pleasant was your childhood? Beliefs about memory shape inferences from experienced difficulty of recall. *Psychological Science, 12*, 176-179.

Winkielman, P., Schwarz, N., & Belli, R. F. (1998). The role of ease of retrieval and attribution in memory judgments: Judging your memory as worse despite recalling more events. *Psychological Science, 9*, 124-126.

Winkielman, P., Schwarz, N., Fazendeiro, T., & Reber, R. (2003). The hedonic marking of processing fluency: Implications for evaluative judgment. In J.

Musch & K. C. Klauer (Eds.), *The Psychology of Evaluation: Affective Processes in Cognition and Emotion.* (pp. 189-217). Mahwah, NJ: Lawrence Erlbaum.

Winkielman, P., Zajonc, R. B. & Schwarz, N. (1997). Subliminal affective priming resists attributional interventions. *Cognition and Emotion, 11*, 433-465.

Winter, D. G. (1973). *The power motive*. New York: Free Press.

Williams, J. E., & Best, D. L. (1982). *Measuring sex stereotypes: A thirty-nation study*. Berkeley, CA: Sage Publications.

Wilson, T. D., & Hodges, S. D. (1992). Attitudes as temporary construction. In L. L. Martin & A. Tesser (Eds.), *The construction of social judgments* (pp. 37-66). Hillsdale, NJ: Erlbaum.

Wittenbrink, B., Judd, C. M, & Park, B. (2001). Spontaneous prejudice in context: Variability in automatically activated attitudes. *Journal of Personality and Social Psychology, 81*, 815-827.

Woike, B. A. (1994). The use of differentiation and integration processes: Empirical studies of "separate" and "connected" ways of thinking. *Journal of Personality and Social Psychology, 67*, 142–150.

Worchel, S., Arnold, S. E., & Harrison, W. (1978). Aggression and power restoration: The effects of identifiability and timing on aggressive behavior. *Journal of Experimental Social Psychology, 14*, 43-52.

Wrong, D. (1979). *Power: Its forms, bases and uses.* Oxford, UK: Blackwell.

Wundt, W. (1897). *Outlines of psychology* (C.H. Judd, Trans.). Leipzig, Germany: Engelmann. (Original work published 1896)

Wyer, R. S., & Srull, T. K. (1989). *Memory and cognition in its social context.* Hillsdale, NJ: Erlbaum.

Yee, M., & Brown, R. (1994). The development of gender differentiation in young children. *Child Development, 33*, 183-196.

Yukl, G., & Falbe, C. M. (1991). Importance of different power sources in downward and lateral relations. *Journal of Applied Psychology, 76*, 416-423.

Zajonc, R. B. (1980). Feeling and thinking: Preferences need no inferences. *American Psychologist, 35*, 151-175.

Zeelenberg, M., Nelissen, R. M. A., Breugelmans, S. M., & Pieters, R. (2008). On emotion specificity in decision making: Why feeling is for doing. *Judgment and Decision Making, 3*, 18-27.

Zeelenberg, M., & Pieters, R. (2006). Feeling is for doing: A pragmatic approach to the study of emotions in economic behavior. In D. DeCremer, M. Zeelenberg & J. K. Murnighan (Eds.), *Social psychology and economics* (pp. 117–137). Mahwah, NJ: Erlbaum.

Zurbriggen, E. L. (2000). Social motives and cognitive power/sex associations: Predictors of aggressive sexual behavior. *Journal of Personality and Social Psychology, 78*, 559-581.

List of Appendices

Appendix 1:
Dominance Scale (Studies 1, 5, and 6)

Self-Perception

In the following we would like to learn more about how you see yourself as a person.

Below you are presented with a series of traits, and your task is to indicate how accurately each one of these traits describes you.

The answer scale varies from 1 - extremely inaccurate (the trait doesn't describe you at all) to 8 – extremely accurate (the trait describes you very well).

Please tick the number in the scale that corresponds to your opinion.

There are no right or wrong answers. The best answer is an honest answer, and we are simply interested in what comes to your mind when you think about yourself.

Extremely inaccurate	1	2	3	4	5	6	7	8	Extremely accurate
Self-assured	O	O	O	O	O	O	O	O	
Curious	O	O	O	O	O	O	O	O	
Timid	O	O	O	O	O	O	O	O	
Unaggressive	O	O	O	O	O	O	O	O	
Self-confident	O	O	O	O	O	O	O	O	
Crafty	O	O	O	O	O	O	O	O	
Bashful	O	O	O	O	O	O	O	O	
Creative	O	O	O	O	O	O	O	O	
Assertive	O	O	O	O	O	O	O	O	
Shy	O	O	O	O	O	O	O	O	
Thoughtful	O	O	O	O	O	O	O	O	
Meek	O	O	O	O	O	O	O	O	
Neighbourly	O	O	O	O	O	O	O	O	
Persistent	O	O	O	O	O	O	O	O	
Social	O	O	O	O	O	O	O	O	
Firm	O	O	O	O	O	O	O	O	
Coldhearted	O	O	O	O	O	O	O	O	
Forceless	O	O	O	O	O	O	O	O	
Dominant	O	O	O	O	O	O	O	O	
Courageous	O	O	O	O	O	O	O	O	
Unauthoritative	O	O	O	O	O	O	O	O	
Tender	O	O	O	O	O	O	O	O	
Forceful	O	O	O	O	O	O	O	O	
Enthusiastic	O	O	O	O	O	O	O	O	
Unbold	O	O	O	O	O	O	O	O	
Domineering	O	O	O	O	O	O	O	O	
Extremely inaccurate	1	2	3	4	5	6	7	8	Extremely accurate

Appendix 2:
Sense of Power Scale (Study 1)

Relationships

We also would like to ask you about your relationship with other people.

On the following items, please indicate how you view your relationship with others.

In doing so, please rate each of the items shown below using the following scale:

1 Disagree Strongly	2 Disagree	3 Disagree a little	4 Neither agree nor disagree	5 Agree a little	6 Agree	7 Agree Strongly

In my relationships with others ...

	1	2	3	4	5	6	7
... I can get people to listen to what I say.	○	○	○	○	○	○	○
... My wishes carry much weight.	○	○	○	○	○	○	○
... Even if I voice them, my views have little sway.	○	○	○	○	○	○	○
... I think I have a great deal of power.	○	○	○	○	○	○	○
... My ideas and opinions are often ignored.	○	○	○	○	○	○	○
... Even when I try, I am not able to get my way.	○	○	○	○	○	○	○
... I can get others to do what I want.	○	○	○	○	○	○	○
... If I want to, I get to make the decisions.	○	○	○	○	○	○	○
	1	2	3	4	5	6	7

Appendix 3:
Preference for Intuition (PID-I) Scale (Study 1)

DECISION MAKING

People differ in the way they prefer to make decisions. Below you can find again a serious of statements from other people. The statements express different ways of making decisions.

We would like to ask you to indicate how much you would agree with each of the statements. In doing so, please rate each of the items shown below using the following scale:

1 Disagree Strongly	2 Disagree	3 Disagree a little	4 Neither agree nor disagree	5 Agree a little	6 Agree	7 Agree Strongly

	1	2	3	4	5	6	7
I listen carefully to my deepest feelings	○	○	○	○	○	○	○
With most decisions it makes sense to completely rely on your feelings	○	○	○	○	○	○	○
I do not like situations that require me to rely on my intuition.*	○	○	○	○	○	○	○
I prefer drawing conclusions based on my feelings, my knowledge of human nature, and my experience of life	○	○	○	○	○	○	○
My feelings play an important role in my decisions	○	○	○	○	○	○	○
I prefer emotional people	○	○	○	○	○	○	○
When it comes to trusting people, I can usually rely on my gut feelings	○	○	○	○	○	○	○
I am a very intuitive person	○	○	○	○	○	○	○
I like emotional situations, discussions, and movies	○	○	○	○	○	○	○
	1	2	3	4	5	6	7

*Item reverse coded.

Appendix 4:

Priming Manipulation of Power and Powerlessness (Studies 4 and 8)

Situational Perception

This study focuses on your perception of a past event. We would like you to describe a particular incident in your life. Please recall a situation in which you had power over another individual or individuals. By power, we mean a situation in which you controlled the ability of another person or persons to get something they wanted, or you were in a position to evaluate those individuals. Please describe this situation in which you had power—what happened and how you felt.

It is important that you imagine this situation as vividly as possible. There are no right or wrong answers and your answers will be strictly confidential. You can write whatever incident comes to your mind that made you feel *really* powerful and in control – no matter how others would feel or think about this incident. Please use the spaces below to describe the incident and how you felt.

[.....]

Now we would like to know how much in charge you were in the situation described on the previous page. Please tick one number in the following scale to indicate how much control you had in this situation.

	1	2	3	4	5	6	7	8	9	
Not at all	○	○	○	○	○	○	○	○	○	Very much

Situational Perception

This study focuses on your perception of a past event. We would like you to describe a particular incident in your life. Please recall a situation in which someone else had power over you. By power, we mean a situation in which someone had control over your ability to get something you wanted, or was in a position to evaluate you. Please describe this situation in which you did not have power—what happened and how you felt.

It is important that you imagine this situation as vividly as possible. There are no right or wrong answers and your answers will be strictly confidential. You can write whatever incident comes to your mind that made you feel *really* powerless – no matter how others would feel or think about this incident. Please use the spaces below to describe the incident and how you felt.

[.....]

Now we would like to know how much in charge you were in the situation described on the previous page. Please tick one number in the following scale to indicate how much control you had in this situation.

	1	2	3	4	5	6	7	8	9	
Not at all	○	○	○	○	○	○	○	○	○	Very much

Appendix 5:

Measures of Gender Stereotyping Employed in Study 4

In this study we are interested in your perceptions of characteristics of men and women. **There are no right or wrong answers and we are interested in your truthful opinion.**

For each of the personal characteristics listed below please indicate to which extent this characteristic applies (on average) to **men**. In other words we are interested to know for each attribute how well it describes men in general. The answer scale ranges from 1 (describes men not at all) to 9 (describes men very well).

	Not at all 1	2	3	4	5	6	7	8	Very much 9
Fussy	○	○	○	○	○	○	○	○	○
Self-confident	●	●	●	●	●	●	●	●	●
Boastful	○	○	○	○	○	○	○	○	○
Nagging	●	●	●	●	●	●	●	●	●
Gentle	○	○	○	○	○	○	○	○	○
Assertive	●	●	●	●	●	●	●	●	●
Rude	○	○	○	○	○	○	○	○	○
Whiny	●	●	●	●	●	●	●	●	●
Sympathetic	○	○	○	○	○	○	○	○	○
Courageous	●	●	●	●	●	●	●	●	●
Warm	○	○	○	○	○	○	○	○	○
Autocratic	●	●	●	●	●	●	●	●	●
	1 Not at all	2	3	4	5	6	7	8	9 Very much

Now we would like you to estimate <u>for each</u> of the characteristics listed below the percentage of <u>men</u> who possess this attribute/characteristic.

Fussy	Self-Confident	Boastful	Nagging	Gentle	Assertive
%	%	%	%	%	%

Rude	Whiny	Sympathetic	Courageous	Warm	Autocratic
%	%	%	%	%	%

For each of the personal characteristics listed below please indicate to which extent this characteristic applies (on average) to **women**. In other words we are interested to know for each attribute how well it describes **women** in general. The answer scale ranges from 1 (describes women not at all) to 9 (describes women very well).

	Not at all 1	2	3	4	5	6	7	8	Very much 9
Fussy	○	○	○	○	○	○	○	○	○
Self-confident	●	●	●	●	●	●	●	●	●
Boastful	○	○	○	○	○	○	○	○	○
Nagging	●	●	●	●	●	●	●	●	●
Gentle	○	○	○	○	○	○	○	○	○
Assertive	●	●	●	●	●	●	●	●	●
Rude	○	○	○	○	○	○	○	○	○
Whiny	●	●	●	●	●	●	●	●	●
Sympathetic	○	○	○	○	○	○	○	○	○
Courageous	●	●	●	●	●	●	●	●	●
Warm	○	○	○	○	○	○	○	○	○
Autocratic	●	●	●	●	●	●	●	●	●
	1 Not at all	2	3	4	5	6	7	8	9 Very much

Now we would like you to estimate <u>for each</u> of the characteristics listed below the percentage of <u>women</u> who possess this attribute/characteristic.

Fussy	Self-Confident	Boastful	Nagging	Gentle	Assertive
%	%	%	%	%	

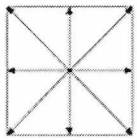
Rude	Whiny	Sympathetic	Courageous	Warm	Autocratic
%	%	%	%	%	

Appendix 6:
Semantic Priming Manipulation (Study 7)

Word-Search Puzzle

Instructions

Below you can see a letter-matrix, as well as a list of target-words on the right. We would like to ask you to find and circle each word shown in the list in the letter-grid below. The words may be written forwards, backwards, up and down, horizontally, or diagonally. Those orientations are illustrated in the graph below.



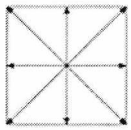
T	B	O	S	C	O	H	P	Y	A	X
B	O	A	R	D	M	I	E	U	C	F
E	I	P	N	H	S	R	X	U	L	F
C	X	L	O	S	F	S	E	I	O	E
H	F	E	O	K	B	U	C	S	C	L
I	D	B	C	D	X	O	U	R	K	O
R	Y	T	I	R	O	H	T	U	A	C
L	C	H	R	F	Y	O	I	K	L	D
O	U	A	C	N	K	U	V	C	B	R
R	N	P	F	I	D	S	E	S	U	P
T	R	X	L	T	R	E	Y	P	S	H
N	I	N	F	L	U	E	N	C	E	Y
O	M	T	H	C	X	T	A	F	S	A
C	O	F	F	E	E	H	N	O	C	X

board
authority
executive
coffee
clock
boss
influence
house
rich
control

Word-Search Puzzle

Instructions

Below you can see a letter-matrix, as well as a list of target-words on the right. We would like to ask you to find and circle each word shown in the list in the letter-grid below. The words may be written forwards, backwards, up and down, horizontally, or diagonally. Those orientations are illustrated in the graph below.



O	B	U	I	L	D	I	N	G	R	Z
R	S	O	E	M	P	A	H	L	K	E
E	V	K	A	W	G	N	I	F	F	T
T	O	S	C	D	Z	K	L	A	H	C
A	W	M	R	T	H	A	L	E	P	O
W	R	A	S	E	M	B	O	A	R	F
A	O	G	A	P	Z	E	P	H	O	F
B	H	A	U	I	L	D	S	M	W	E
P	O	Z	P	M	T	A	W	U	L	E
H	U	I	U	A	E	K	D	G	O	K
O	S	N	E	G	L	Z	U	N	J	H
Z	W	E	L	D	K	C	O	L	C	R
E	F	T	E	L	E	P	H	O	N	E
C	H	A	W	T	I	N	E	S	O	U

board
coffee
clock
house
chalk
building
telephone
magazine
lamp
water

Appendix 7:

Statements Employed in Study 7

List of easy statements (i)

True statements

'Euro' is the joined European currency*

Cars drive on the left in UK*

Uranium is radioactive*

A day consists of 24hours*

Copper conducts electricity*

'Windows' is a software operating system*

Fish 'n' chips were traditionally sold wrapped in newspaper

Dolphins belong to the mammals*

The Olympic Games were founded in Greece*

The RMS Titanic sank on its maiden voyage*

The formula for carbon dioxide is CO2

The English flag is the St George's Cross

Margaret Thatcher was Prime Minister in UK*

Diamond is a form of carbon*

Petrol is produced in oil refineries*

London is the capital city of England*

The formula for water is H2O*

Sunlight contains ultraviolet radiation*

Kung Fu is a Chinese martial art

Tony Blair is member of the Labour Party*

The Eiffel Tower stands in Paris**

English is the national language in Australia*

France is member of the European Union*

Vatican City is located in Rome**

Earth orbits the Sun*

The Quran is the central religious text of Islam*

'eBay' is the name of an auction and shopping website

Dan Brown is the author of 'The DaVinci Code'

James Bond is also known as 007

Note: * statements taken directly from Unkelbach (2007); ** statements adopted with minor changes

List of easy statements (ii)

False statements

David Cameron is leader of the French National Party**

Kangaroos belong to the reptiles*

There are three TV channels in UK*

Sigmund Freud discovered Penicillin*

The statue of liberty stands in the harbour of Lisbon*

Pluto is the largest planet in the solar system*

Albert Einstein was born in 1592**

French is the national language in New Zealand

Lead is lighter than aluminium*

Greenland is an unpopulated country*

Birds are viviparous*

Yuri Gagarin was the first man on the Moon*

Christianity is the largest religion in Japan**

Aristotle was a Japanese philosopher*

Karl Marx was a Buddhist monk*

A leap year has 400 days**

A football match consists of three periods of 20 minutes*

Brighton is the county town of Kent

The Pope is head of the protestant church*

The Thames is the largest river on Earth*

The French Revolution took place in 1998

Picasso wrote 'Romeo and Juliet'

The capital of Spain is Kuala Lumpur

Alaska is part of Europe

Michael Jackson won this year's Celebrity Big Brother

The first iPod was launched in 1901

Lion King is the title of the last Harry Potter book

Champs-Élysées desscribes a class of French chansons

Sean Connery is a famous Great Highland Bagpipe artist

Gold is the only corroding metal*

Note: * statements taken directly from Unkelbach (2007); ** statements adopted with minor changes

List of difficult statements (i)

True statements

The Three Musketeers are Athos, Porthos, and Aramis

Iridium has the atomic number 77 in a periodic table*

K2 is the second-highest mountain on Earth*

A grand piano has 88 keys*

Mussolini became Prime Minister of Italy in 1922*

The Nobel Prize is awarded annually since 1901*

Werther is a character in a Goethe novel**

The River Severn is the longest British river*

One calorie equals a 1 °C temperature increase of 1 gram of water*

Three aggregate states can be distinguished*

Mass is the amount of matter and energy in a given object*

Cleopatra and Caesar were lovers

Odin is the chief god in Norse mythology*

The Book of Revelation is wholly composed of apocalyptic literature*

The capital of Nepal is Kathmandu

Boats flow higher in saltwater compared to freshwater

The search-engine Google was founded by two students

Big Brother is a character in the novel Nineteen Eighty-Four

The House of Common houses 646 members*

More than 4 of the world's 6.5 billion people live in Asia*

'United in diversity' is the official EU motto*

One hertz means one cycle per second*

pH is a measure of acidity in chemistry*

Salt consists of ions in a lattice structure*

Semiotics is the study of signs and symbols*

Methuselah was the grandfather of Noah*

There is a London in Canada

Michael Jackson's middle name is Joseph

The whale shark is the largest fish in the world

Electrons flow from the negative to the positive pole

Note: * statements taken directly from Unkelbach (2007); ** statements adopted with minor changes

List of difficult statements (ii)

False statements

In Greek mythology Thor, Erebos, and Kreon are among the Twelve Olympians*

Saturn has 24 individual moons*

A chiasmus is made up of two opposing clauses*

In plants encephalon is the basis for photosynthesis*

A pentameter measures the number of syllabi in classic poetry*

Snails reproduce asexually

Knesset is the legislature of Russia

The speed of sound is independent of temperature*

Kinetic pressure is measured in water altitude per square-meter*

A millisecond (ms) is the basic unit of time*

The strength of magnetic fields is measured in Henry (hy)*

The religion with the largest number of adherents is Hinduism*

River Shannon is the longest river in Wales*

Mushrooms are fungi that belong to the class of Dipnoi*

The coastal taipan is Australia's most venomous snake*

One astronomic unit corresponds to the distance between Earth and Moon*

In sound waves frequency and amplitude are correlated*

Swedish-born Dag Hammarskjöld was the first UN secretary*

The countries forming Oceania have no land borders*

The Philippine trench is the deepest known submarine trench*

Oscillation described the molecular cohesion of materials**

The Sun's photosphere can only be observed with a cerograph*

A galactic year approximates 1 billion Earth years**

Ashi-Waza is a leg striking technique in karate*

Stuart Sutcliffe was member of the band ‚The Rolling Stones'*

John Tolkien constructed the languages Shu-Bu and Sheemish

The capital of Mongolia is Brunei**

Chameleons are the only reptiles that can change colour

The Scottish flag is the St Mary's Saltire

Actress Liz Taylor has been married seven times to five husbands

Note: * statements taken directly from Unkelbach (2007); ** statements adopted with minor changes

Appendix 8:
Examples of Stimulus Materials Used in Study 9

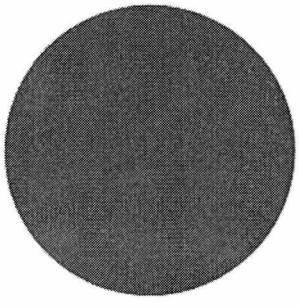
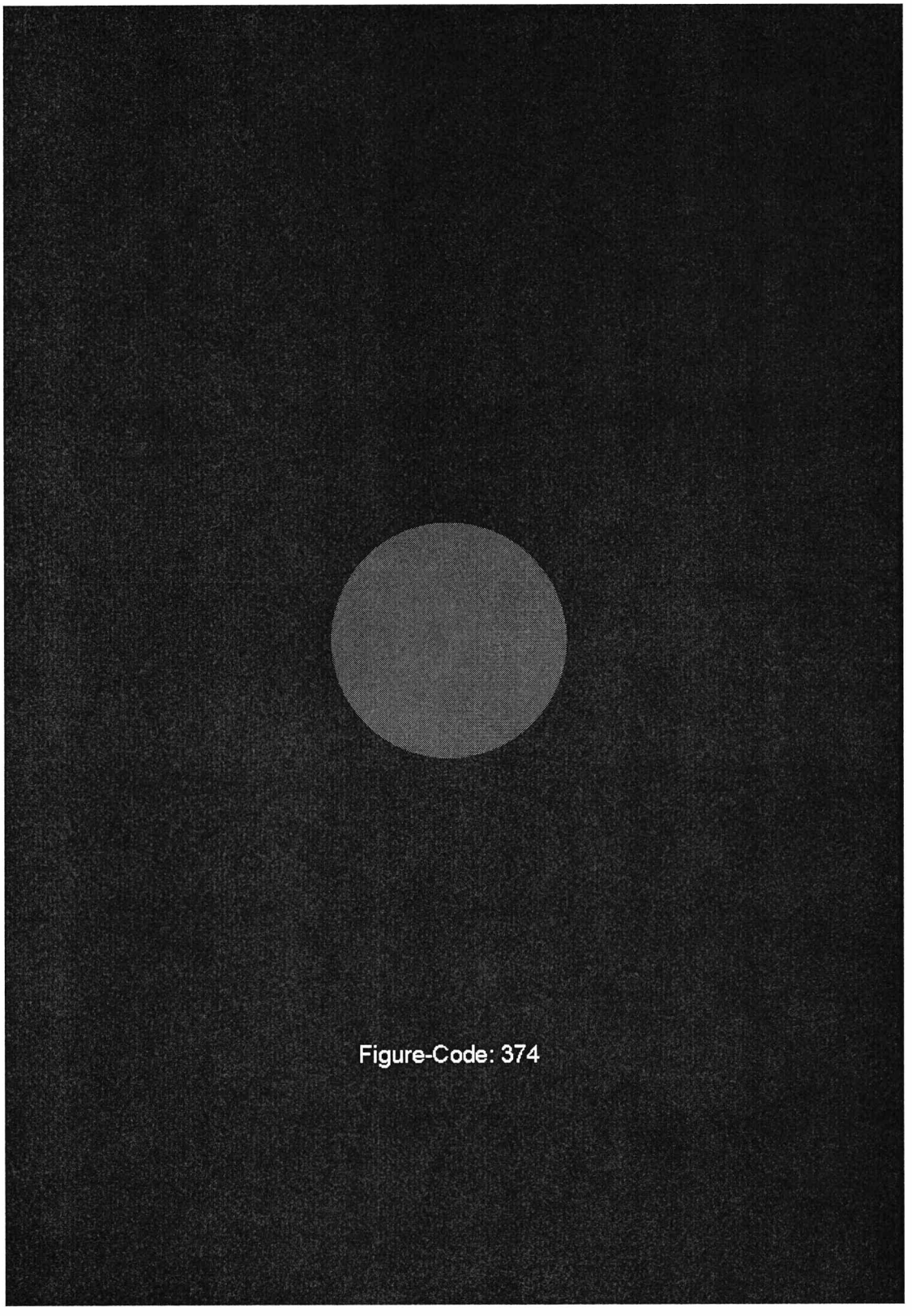


Figure-Code: 525

Note: Picture is reduced in size; original picture appears in DinA4 without a frame.



Note: Picture is reduced in size; original picture appears in DinA4 without a frame.

Appendix 9:
Rating Scales Used in Study 9

Situational Perception & Image Preferences

This section is concerned with aesthetic judgments. In the following you will be presented with a series of pictures. The pictures show circles on a dark and light background. Your task is simply to indicate how much each of the circles appeals to you (i.e. whether you think the picture is pretty or not). There are no right or wrong answer and we are simply interested in your subjective liking of the pictures.

In the left column please note down the figure code. In the right column please indicate you rating.

	Figure-Code	How pretty is the picture?
1		*Not at all pretty* 1 2 3 4 5 6 7 8 9 *very pretty*
2		*Not at all pretty* 1 2 3 4 5 6 7 8 9 *very pretty*
3		*Not at all pretty* 1 2 3 4 5 6 7 8 9 *very pretty*
4		*Not at all pretty* 1 2 3 4 5 6 7 8 9 *very pretty*
5		*Not at all pretty* 1 2 3 4 5 6 7 8 9 *very pretty*
6		*Not at all pretty* 1 2 3 4 5 6 7 8 9 *very pretty*
7		*Not at all pretty* 1 2 3 4 5 6 7 8 9 *very pretty*
8		*Not at all pretty* 1 2 3 4 5 6 7 8 9 *very pretty*
9		*Not at all pretty* 1 2 3 4 5 6 7 8 9 *very pretty*
10		*Not at all pretty* 1 2 3 4 5 6 7 8 9 *very pretty*
11		*Not at all pretty* 1 2 3 4 5 6 7 8 9 *very pretty*
12		*Not at all pretty* 1 2 3 4 5 6 7 8 9 *very pretty*
13		*Not at all pretty* 1 2 3 4 5 6 7 8 9 *very pretty*
14		*Not at all pretty* 1 2 3 4 5 6 7 8 9 *very pretty*
15		*Not at all pretty* 1 2 3 4 5 6 7 8 9 *very pretty*
16		*Not at all pretty* 1 2 3 4 5 6 7 8 9 *very pretty*
17		*Not at all pretty* 1 2 3 4 5 6 7 8 9 *very pretty*
18		*Not at all pretty* 1 2 3 4 5 6 7 8 9 *very pretty*
19		*Not at all pretty* 1 2 3 4 5 6 7 8 9 *very pretty*
20		*Not at all pretty* 1 2 3 4 5 6 7 8 9 *very pretty*