Power, optimism, and risk-taking

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Abstract

Five studies investigated the hypotheses that the sense of power increases optimism in perceiving risks and leads to more risky behavior. In Studies 1 and 2, individuals with a higher generalized sense of power and those primed with a high-power mind-set were more optimistic in their perceptions of risk. Study 3 primed the concept of power nonconsciously and found that both power and gain/loss frame had independent effects on risk preferences. In Study 4, those primed with a high-power mind-set were more likely to act in a risk-seeking fashion (i.e., engage in unprotected sex). In Study 5, individuals with a higher sense of power in a face-to-face negotiation took more risks by divulging their interests. The effects of power on risk-taking were mediated by optimistic risk perceptions and not by self-efficacy beliefs. Further, these effects were attenuated when the high-power individual felt a sense of responsibility. Copyright © 2006 John Wiley & Sons, Ltd.

Power fascinates. People spend an inordinate amount of time attending to, thinking about, and discussing the thoughts and behaviors of powerful and prestigious individuals—be they heads of state, CEOs, or prominent members of their local church, club, or community (Chance, 1967; Fiske, 1993; Hall, 1984; Kelmer & Robinson, 1997). Though typically viewed as frivolous and the province of gossip and gawking, this interest in powerholders is often important and useful. On a practical level, understanding the minds of those with power helps people appreciate how their leaders make decisions—decisions that impact people’s own lives. The behaviors of the powerful have inordinate pull, in that their actions have greater impact and matter more compared to those without power. On a theoretical level, understanding powerholders’ behavior can also provide a window into human nature more broadly; for only when people possess power do some of their deepest desires and motivations reveal themselves in the light of day.

Research on the possession of power has shown that power affects diverse psychological processes, from stereotyping (Fiske, 1993) to styles of dress (Pfeffer, 1992). To help integrate these disparate findings, a recent theory proposed that power influences the relative activation of two broad and fundamental behavioral systems: the behavioral approach and inhibition systems (Kelmer, Gruenfeld, & Anderson, 2003). As we discuss below, these two behavioral systems help individuals pursue

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Received 28 June 2004
Accepted 22 September 2005

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rewards and avoid threats, respectively, by coordinating diverse affective, cognitive, and behavioral processes. Although a number of recent studies have begun to provide empirical support for this theory (Anderson & Berdahl, 2002; Galinsky, Gruenfeld, & Magee, 2003), many of its tenets and implications have yet to be directly examined.

In the current investigation, we explore the implications of this Approach/Inhibition model by examining the effects of possessing power on risk perceptions and risk-taking behavior. Intuitively, it might seem that lacking power would be associated with more risky behaviors, and there is some empirical evidence to support this intuition. For example, low levels of socioeconomic status (SES) have been associated with higher rates of risky sexual behavior, drug use, and behavioral habits (Adler et al., 1994; Capaldi, Stoolmiller, Clark, & Owen et al., 2002; Marmot, Shipley, & Rose, 1984). Social exclusion has been shown to produce more risky, self-defeating behaviors (Twenge, Catanese, & Baumeister, 2002). Some additional evidence emerges from primate studies in which lower-status male vervet monkeys tend to be more impulsively violent compared to their higher status peers (Fairbanks, Melega, Jorgensen, Kaplan, & McGuire, 2001). In fact, this violent impulsivity is one mechanism by which a low-status monkey can climb the status hierarchy. Thus, low-power individuals might be more risk-seeking because they are willing to do anything to get out of their disadvantaged position.

This notion also brings into sharp relief the fact that low-power individuals have less to lose by behaving in a risky manner. The powerful may lose access to and control over valued resources if the downside of risk is realized, and thus the powerful might fear losing what they have (i.e., their gains), and act more conservatively. This logic of the powerless having less to lose by taking risks would also appear to be consistent with prospect theory (Kahneman & Tversky, 1979), which states that being in the domain of losses produces risk-seeking behavior. If the lack of power puts people in the domain of losses and possessing power puts people into the domain of gains, then power should have a negative relationship with risky behavior.

However, based on the idea that possessing and lacking power differentially activate the behavioral approach and inhibition systems, we propose that power increases, rather than decreases, risk-taking behavior. As we will argue, possessing power should lead individuals to pay more attention to the potential payoffs inherent in risky actions and devote less attention to the potential dangers. And as we detail in Study 3, the value function of prospect theory is conceptually independent of the optimism people feel toward potential outcomes, and therefore our hypotheses are independent of those from prospect theory. Therefore, power should increase optimism when perceiving risks, which should lead to an increased propensity to engage in risks.

We tested the path from power to optimism to risky behavior in five studies, using multiple instantiations of the sense of power, and multiple measures of optimism, risk perception, and risk preference. Across these studies, we examined whether power leads to more optimistic risk perceptions and to a preference for riskier paths of action, regardless of how the sense of power is activated or assessed (semantically, through a recall task, with an individual difference measure, or a context-specific measure), or the nature of the risk involved (minor or major, relevant to self or not, controllable or uncontrollable). Further, we aimed to rule out alternative explanations for the findings, such as self-efficacy based accounts, and to identify boundary conditions—specifically, we aimed to show that when powerful individuals feel a sense of responsibility they become less risk-seeking.

POWER, APPROACH, AND INHIBITION

Power is often defined as the capacity to influence others and it primarily stems from the control over valuable resources and the ability to administer rewards and punishments (Emerson, 1962; French &
Raven, 1959; Goldhamer & Shils, 1939; Keltner et al., 2003; Lewin, 1951). Thus, power is a relational variable, in that individuals’ power can be understood only in relation to another person or a group (Emerson, 1962; Thibaut & Kelley, 1959).

According to the Approach/Inhibition Theory of power, possessing power triggers the relative activation of the behavioral approach and inhibition systems (Carver & White, 1994; Fowles, 1980; Gray, 1982, 1987, 1991; Higgins, 1997, 1998; Newman, 1997; Sutton & Davidson, 1997). The behavioral approach system is posited to regulate behavior associated with rewards, such as food, achievement, sex, safety, and social attachment. For example, positive emotion motivates approach-related behavior, scanning for rewards in the environment, and forward locomotion (Carver & White, 1994; Gray, 1994; Higgins, 1997, 1998). The behavioral inhibition system has been equated to an alarm system. Once activated by threats or potential punishments, this system triggers affective states such as anxiety, heightened vigilance for threats in the environment, and avoidance and response inhibition (Gray, 1991; Higgins, 1997).

Having high power is posited to activate the approach system for two reasons. First, elevated power is associated with increased access to rewards. When people have power they have access to more material resources such as financial resources and physical comforts, as well as social resources such as higher esteem, praise, and positive attention (Buss, 1996; Chance, 1967; Derber, 1979; Eibl-Eibesfeldt, 1989; Ellis, 1993; French & Raven, 1959; Keltner, Young, Heerey, Oenig, & Monarch, 1998; Mazur, 1973; Operario & Fiske, 2001; Savin-Williams, 1979; Weisfeld, 1993). Second, when people have power they encounter less interference from others when pursuing rewards (Keltner et al., 1998; Weber, 1947; Winter & Stewart, 1983). For complementary reasons, having low power is proposed to activate the inhibition system. When people have low power they are subject to more social and material threats, especially the threat of losing favor among the powerful (e.g., Anderson & Berdahl, 2002; Chance, 1967; Fiske, 1993; Hall & Halberstadt, 1994; Whitney & Smith, 1993), and they are acutely aware of the constraints these threats place upon their behavior (Anderson, John, & Keltner, 2005; Keltner et al., 2003).

A number of recent studies have begun to provide support for the Approach/Inhibition Theory. Individuals randomly assigned to high-power conditions through a variety of means have been shown to pay more attention to positive and rewarding information, experience more positive affect, express themselves more freely in social interactions, pursue rewards more assertively, and show to be more of an action-orientation toward the material and social environment compared to individuals in low-power conditions (Anderson & Berdahl, 2002; Galinsky et al., 2003; Langner et al., 2005; Smith & Bargh, 2005).

**POWER AND RISK**

Based on the Approach/Inhibition Theory, we propose that possessing power increases people’s proclivity for risk. When people have power and their behavioral approach system is more active, they attend more to reward-laden information; thus, powerful people presented with a choice to engage in a risky course of action should focus more on the potential payoffs of that risk. At the same time, when people have power and their behavioral inhibition system is less active, they should attend less the potential dangers inherent in that risk. Focusing on rewards and being less aware of dangers should propel the powerful toward risky behavior. For example, individuals with power should be more likely to engage in behaviors such as gambling or unprotected sex, because they would be more focused on money they could win or the physical pleasure involved in the sexual encounter, and less focused on the possibility of losing the gamble or contracting a sexually transmitted disease. That is, power might
make people less aware of the risks in the first place. Furthermore, they might be more optimistic of their chances of winning and of avoiding a disease—basically, power would induce a perceived reduction in the probability of experiencing the downside of risk.

In support of our hypotheses, previous work has shown that optimism, the behavioral approach system, and past successes lead to riskier behavior. First, anger and happiness, two emotions that differ with regard to valence but are considered to be part of the behavioral approach system (BAS), both lead to more optimism which in turn translates into risky behavior. These emotions increase risk-taking because their cognitive appraisal ‘traces’ entail high certainty and raise the subjective probabilities of positive outcomes; in addition, a sense of control mediates the effects of BAS emotions on optimism and risk (Lerner & Keltner, 2001). Second, past successes and the accumulation of rewards can also lead to optimism and risky behavior. In the stock market arena, previous capital gains have been shown to increase investors’ optimism and risk-taking, whereas previous market losses have increased risk aversion by exacerbating the fear of incurring further losses (Barberis, Huang, & Santos, 2001). Similarly, the house-money effect, a situation in which ‘beating the house’ leads to riskier gambles, also suggests that prior gains increase risk-taking (Thaler & Johnson, 1990). Finally, the number of stock options given to a CEO (which can serve both as a source of wealth—and thus power—and as a risk-encouraging incentive system) is positively related to investment in risky projects (Guay, 1999; Rajgopal & Shevlin, 2002). In sum, because power activates BAS emotions and is often the product of recent successes at acquiring resources, it should be positively connected to both optimism and risk.

Our hypotheses are also consistent with prior theorizing that low-power individuals and members of low-power groups behave in less distinctive ways than high-power individuals (Brauer, 2001; Brauer & Judd, 2000; Guinote, Judd, & Brauer, 2002; Hollander, 1938). For example, Guinote and colleagues (2002) found that members of low-power groups behave more similarly to each other than members of high-power groups, who behave in ways more distinct from each other. Inasmuch as behaving in distinctive and nonconforming ways represents risky social behavior (because of the potential social backlash nonconformity can incur), this work provides indirect evidence that high-power individuals behave in a more risky fashion.

THE SENSE OF POWER

Although power is often conceived of as a structural variable (Ng, 1980) and as a property of social relationships (Emerson, 1962), power can also be regarded as a psychological property of the individual (Anderson, John, & Keltner, 2005; Bargh, Raymond, Pryor, & Strack, 1995; Bugental, Blue, & Cruzcoa, 1989; Chen, Lee-Chai, & Bargh, 2001; Galinsky et al., 2003). Individuals can form internal representations of their power relative to others in specific contexts or relationships (Bugental et al., 1989), and in general, across contexts and relationships (Anderson et al., 2005). Because power, by definition, is a structural and relational concept, the sense of power is anchored in relational experiences and is a psychological extension of the socio-structural landscape. The sense of power can be activated whenever individuals to the possession of power are implied, consciously or non-consciously, in the environment or when past experiences with power are recalled (Chen et al., 2001; Galinsky et al., 2003). Once activated, the sense of power has been shown to influence individuals’ behavior in meaningful and predictable ways.

For example, Bargh and his colleagues (Bargh, Raymond, Pryor, & Strack, 1995; Chen et al., 2001) were the first to activate the concept of power and observe its effects on behavior. They invoked the auto-motive model (Bargh, 1990) to explain how mental constructs—from semantic constructs to
goals—can be stored in memory and thus be subject to the principles of general construct activation: Whenever a goal or construct, such as power, is activated, associated concepts and behavioral tendencies are also activated. In one study, Bargh et al. (1995) found that activating the concept of power through a word-fragment completion task led those with a predisposition toward sexual harassment to view women in sexual terms. Because power and sex were strongly associated for these men, simply activating power automatically activated their sexual desire.

Galinsky et al. (2003) used a mind-set priming method to activate the sense of power. In their method, participants recalled either a situation in which they either possessed power over someone else, or a situation in which someone else possessed power over them. Simply recalling a time one possessed power increased manifestations of action in the service of personal desires; high-power participants were more likely to act on an annoying fan in a situation where it was unclear whether one was permitted to do so, and tended to act on a common social fund, regardless of whether doing so had prosocial or antisocial consequences (Galinsky et al., 2003).

Finally, Anderson and colleagues (2005) developed a measure that assesses individuals' sense of their power. They created different versions of the scale. One version was tailored to assess individuals' power in a specific context, group, or relationship. Another version assesses an individuals' power in general, across their social relationships and groups. They found that these measures correlated with people's standing in power hierarchies and whether they occupied powerful roles (Anderson et al., 2005).

In the current work, we instantiated the psychological state of power using the four different methods mentioned above: measuring individual differences in the sense of power (Studies 1 and 2), recalling a time in which one possessed or lacked power (Studies 2 and 4), activating the semantic construct of power (Study 3), and measuring context-specific differences in the sense of power (Study 5).

**STUDY 1: OPTIMISTIC PERCEPTIONS OF PERSONALLY RELEVANT RISKS**

We began our investigation in Study 1 by examining the link between power and optimistic risk estimates. Specifically, we tested whether people with a higher generalized sense of power would show more optimistic perceptions of risk than people with a lower generalized sense of power. We focused on individuals' estimates of the likelihood that specific positive and negative events would occur in their own life. Thus, we were first focused on risk assessments when probabilities are unknown and when outcomes are personally relevant.

**Methods**

**Participants**

Participants were 44 undergraduates at Northwestern University (28 men, 16 women) who received course credit. The average age was 20 years (SD = 1.82). Twenty-five were Caucasian, fourteen were Asian or Asian-American, four were African-American, and one was of another ethnicity.

**Sense of Power Scale**

The generalized version of the Sense of Power scale (Anderson et al., 2005) asks participants to report their generalized beliefs about the power they have in their relationships with others. Participants were
asked to rate their agreement with eight items such as 'In my relationships with others, I think I have a great deal of power,' on a scale from 1 ('Strongly disagree') to 7 ('Strongly agree'). These items are shown in Appendix A. As in previous research, the scale showed high internal consistency, alpha = 0.88 (M = 5.16, SD = 0.91).

Optimism Measure

To assess participants’ optimistic perceptions of future events, we used an adapted version of Weinstein’s (1980) optimism scale (see Lerner & Keltner, 2001). Participants were asked to estimate their own chances of experiencing 15 different life events, such as ‘Enjoying your post-graduation job,’ ‘Having your achievements displayed in the newspaper,’ ‘Having your home double in value in 10 years,’ and ‘Having gun problems’ (reverse-scored) on a scale from −4 (‘Extremely unlikely’) to 4 (‘Extremely likely’). After reverse-scoring the negative events, these items were intercorrelated, alpha = 0.72, and were thus combined to form one measure of optimism (M = 0.03, SD = 0.90). There were no effects for sex or ethnicity. However, there was a significant effect for age, standardized regression coefficient β = −0.45, t(43) = −3.25, p < 0.01. This indicates older individuals were less optimistic than younger individuals in their perceptions of future events. Therefore, we controlled for age in our analyses.

Results and Discussion

As expected, there was a significant relation between the generalized Sense of Power and optimism in perceiving future events, β = 0.52, t(43) = 4.48, p < 0.01. People who had a higher sense of power in general had more optimistic perceptions of the future. In addition, this relation held up whether the future events were positive or negative; the relation between the Sense of Power and optimism for positive events was β = 0.59, t(42) = 4.73, p < 0.01, and for avoiding negative events was β = 0.47, t(42) = 2.72, p < 0.01. In a moderated multiple regression (Aiken & West, 1991), we found that sex did not moderate the relation between the sense of power and optimistic risk perceptions; the standardized coefficient for the interaction was −0.13, t(39) = −1.10, ns Therefore, both men and women with higher generalized senses of their power were more optimistic in their perceptions.

Also intriguing is that the Sense of Power was related to individuals’ optimism in estimating events that could be considered more within their control and to events seemingly more outside their control. For example, events such as avoiding turbulence on an airplane ride and avoiding an encounter with a dangerous snake while on vacation are somewhat outside individuals’ control, yet both were perceived optimistically by individuals with a higher sense of power (β’s = 0.24 and 0.19, respectively), just as more controllable events were, such as having their achievements displayed in newspaper (β = 0.58) and enjoying their post-graduation job (β = 0.47). As the optimism exhibited by people with a higher sense of power extended to events that seemed outside their control, in the next study, we wanted to further examine the extensiveness of powerful individuals’ optimism in their perceptions of risk.

STUDY 2: OPTIMISTIC PERCEPTIONS OF DANGERS IN THE WORLD

Study 1 demonstrated that a sense of power as assessed by an individual difference measure predicted how optimistic individuals were about positive and negative possibilities that were personally relevant.
In Study 2, we examined whether powerful individuals’ optimism in their risk perceptions would extend to outcomes beyond their own lives. That is, if power increases attention toward positive aspects of the environment and decreases attention to negative aspects of the environment, one should expect people with power to not only be more optimistic when estimating the likelihood of personally relevant events, but also to view the world in general as less dangerous and threatening. In short, individuals with power compared to individuals with less power should perceive that all people face less risk. To test this hypothesis, we used Johnson and Tversky’s (1983) measure of risk perception, which asks people to estimate the number of fatalities per year in the United States due to various causes of death (e.g., tornadoes, plane crashes, lung cancer).

Moreover, to allow causal inference between power and perceptions of risk, in addition to measuring the generalized Sense of Power, we manipulated individuals’ power mind-set by asking participants to either recall a time in which they had power over someone else, or a time when someone else had power over them (see Galinsky et al., 2003). Thus, we expected two independent effects: first, a negative correlation between the generalized sense of power and perceptions of risk, and second, a negative effect for the power mind-set manipulation.

Methods

Participants

Participants were 36 undergraduates at Northwestern University (22 men, 14 women) who received course credit. The average age was 20 years (SD = 1.97). Twenty-eight were Caucasian, 11 were Asian or Asian-American, 1 was African-American, and 1 was of another ethnicity.

Generalized Sense of Power Scale

Following the power mind-set manipulation, we again administered Anderson et al.’s generalized Sense of Power measure (2005) to assess participants’ generalized beliefs about the power they had in their relationships with others. The scale again showed internal consistency, alpha = 0.88 (M = 5.16, SD = 0.91).

Power Mind-set Manipulation

Galinsky et al.’s (2003) manipulation of power asks participants to write a narrative essay about a particular incident in their lives. Participants assigned to the high-power condition were instructed to recall a particular incident in which they had power over another individual or individuals. Power was defined for them as a situation in which they controlled the ability of another person or persons to get something they wanted, or were in a position to evaluate those individuals. Participants assigned to the low-power condition were instructed to recall a particular incident in which someone else had power over them; power was defined in the same way as in the high-power condition.

To check for the effectiveness of the manipulation (i.e., the power essays), an independent coder who was blind to the study’s hypotheses coded the essays on how much power the participant reported having on a 7-point scale. As expected, the power manipulation led participants to describe themselves as having different levels of power in their essays, t(34) = 8.61, p < 0.01. Those participants who were asked to write about a time they had power over someone were coded as having more power in the
essay \( (M = 4.19, SD = 0.75) \) than were participants asked to write about a time someone had power over them \( (M = 1.50, SD = 1.05) \). To check the reliability of these codes, a second independent coder rated all 36 power essays; the inter-judge correlation was high, \( r = 0.86 \) \((p < 0.01)\). There was no relation between the power mind-set manipulation and the generalized Sense of Power scale \((F(1,34) = 0.17, ns)\). This null relation was expected, as the generalized Sense of Power is designed to tap into enduring, stable individual differences in the Sense of Power, and therefore should be unaffected by experimental manipulations. This is similar to the work on self-esteem, which demonstrates that generalized or trait-level self-esteem measures are typically unaffected by experimental manipulations, whereas state-level or context-specific measures of self-esteem are responsive to experimental manipulations (Heatherton & Polivy, 1991).

Perceptions of Risk

Johnson and Tversky’s (1983) measure of risk perception tells participants ‘About 50,000 in the United States die in motor vehicle accidents per year,’ and asks them to ‘estimate the number of annual fatalities due to each of the remaining 17 causes of death.’ It lists 17 causes of death, such as tornadoes, lung cancer, and airplane accidents. Because these estimates tend to span several orders of magnitude and produce skewed distributions (Johnson & Tversky, 1983), we converted participants’ estimates into logarithmic form, which produces a more normal curve. There were no significant main or interaction effects for sex or ethnicity on perceptions of risk. There was again a significant effect for age, however, \( \beta = 0.55, t(34) = 3.82, p < 0.01 \), indicating that older people perceived more risk in the environment than younger people. Therefore, we again controlled for participants’ age in our analyses.

Results and Discussion

In a simultaneous regression, we predicted estimated fatalities with the power mind-set prime and the generalized Sense of Power scale. As hypothesized, participants primed with the high-power power mind-set estimated a lower number of fatalities from the causes of death (log-transformed \( M = 9.27, SD = 0.67 \)) than participants primed with the low-power mind-set (log-transformed \( M = 10.20, SD = 1.64 \)), \( \beta = -0.30, t(35) = -2.27, p < 0.05 \). The raw-mean differences across the two conditions (before being log-transformed) are shown in Figure 1. These results demonstrate that individuals who were simply placed in a high-power mind-set perceived the world as less dangerous and filled with fewer risks than individuals in a low-power mind-set. In addition, there was a significant correlation between the level of power the participants were coded to have possessed in their essays and their estimates of fatalities, \( r(36) = -0.37, p = 0.05 \). Thus, the more power participants recalled possessing, the lower their estimates of fatalities.

Participants with a higher generalized sense of power also estimated a lower number of fatalities due to the 17 causes of death than participants with a lower generalized sense of power, though this effect was marginally significant, \( \beta = -0.25, t(35) = -1.88, p = 0.07 \). Thus, this suggests that individuals with a higher generalized sense of power in their relationships with others tend to perceive less risk in the environment more broadly.

In a moderated multiple regression (Aiken & West, 1991), we did not find a significant interaction (standardized coefficient \(-0.09, ns\)) between generalized Sense of Power and the power mind-set manipulation. Moreover, there were no sex differences in the effects of the power mind-set prime on risk perceptions, or in the relation between the generalized sense of power and risk perceptions. Both
men and women who were in the high-power condition and who had higher generalized senses of power perceived less risk in the world.

Building from the findings of Study 1, these results suggest that when people have a heightened sense of power, they are not only more optimistic about risks inherent in their own lives, but also about the risks in the world in general, the risks that confront everyone as they go through life. Across the first two studies, a sense of power, whether activated or measured, made participants more optimistic in their risk perceptions. The next three studies turn to whether a sense of power actually increases risky behavior.

STUDY 3: POWER, GAIN-LOSS FRAME, AND RISK PREFERENCES

Study 3 was designed to extend the findings from the previous studies in four important ways. First, given our previous studies established a link between power and optimistic risk perceptions, we examined whether power influences individuals' actual preference for risk.

Second, we have emphasized the effects of high power on individuals' preference for risk. However, as our comparisons so far have been between individuals with a high or low sense of power, we do not know whether possessing power is associated with risk, lacking power is associated with risk aversion, or both. To tease apart the effects of possessing and lacking power on risk preferences, we included a neutral condition in Study 3 so that we could examine the effects of high- and low-power separately and independently.

Third, we wanted to address the apparent contradiction between our hypothesis and prospect theory (Tversky & Kahneman, 1981). Prospect theory proposes that individuals are more risk-seeking in the
domain of losses and more risk averse in the domain of gains. As we have pointed out, if powerless individuals are more focused on threats and negative outcomes (Keltner et al., 2003), this seems to suggest they are cognitively operating in the domain of losses, and thus that they should be more risk-seeking than powerful individuals. Similarly, if powerful individuals are more focused on rewards and positive outcomes as we have argued, this seems to imply that they are cognitively operating in the domain of gains, and thus that they should be more risk averse.

However, we believe this to be only an apparent contradiction. Prospect theory, in essence, argues that the value of gains and losses are experienced differently; for example, people are more likely to take risks in the domain of losses because of diminishing sensitivity to large losses, producing a convex portion of the value function (Tversky & Kahneman, 1981). Thus, framing an outcome in terms of a gain or loss shapes the value people assign to certain and uncertain outcomes, leading to acute avoidance of sure losses (i.e., risk-seeking) or an attraction to sure gains (i.e., the risk-averse choice). However, the value function of prospect theory is conceptually independent of the probabilities that people assign to potential outcomes (Gonzalez & Wu, 1999). Our argument of relating power to increased proclivity to risk is about perceived probability. Given the powerful were more optimistic in the first two studies, they should act in a more risky manner because they will be assigning higher probabilities to positive possibilities and lower probabilities to the possibility of negative outcomes regardless of how the outcomes are valued or framed. The independence of the value function and optimistic probabilities is supported by a set of findings by Lerner and Keltner (2001), which showed two independent effects for framing and emotion on risk preferences. In addition to finding the typical framing effect, they found that fearful participants were more risk averse because they were less optimistic about risky options paying off. In the current experiment, we predicted that power and a loss frame would both independently and additively increase preferences for risk.

To test these two independent effects, we used the classic framing paradigm. In Tversky and Kahneman’s Asian Disease Problem (1981), participants are presented with one of two set of choices between a sure outcome and an uncertain, risky outcome in deciding how to deal with a health epidemic. Although the expected outcomes do not differ, these choices are presented in one of two frames. In the gain frame, the emphasis is on lives saved and in the loss frame the emphasis is on lives lost. Despite no differences in expected values, people tend to be risk-seeking (i.e., choose the gamble) in the domain of losses and risk averse (choose the certain outcome) in the domain of gains. These framing effects tend to be quite robust and reliable (see Dawes, 1998 for a review).

Fourth and finally, we wanted to go further in our attempts to avoid demand characteristics. Thus, we went the additional step of priming power with a method that does not do so (Bargh et al., 1995). In short, the prime we used involves presenting participants with word fragments and asking them to complete the words by filling in the missing letters; in the power-prime condition, five of the words they complete can only be completed with a word related to power (e.g., authority, control); in the neutral condition, the words are unrelated to power (e.g., automobile, book); in the low-power condition, the words are related to lacking power (e.g., subordinate, defer).

**Methods**

**Participants and Design**

Participants were 86 students from Northwestern University. Demographic information could not be obtained for these participants. The experiment had a 3(power: high vs. neutral vs. low) × 2(framing: gain vs. loss) between participants design.

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Power Priming Manipulation

Participants were given 15 word fragments and instructed to 'please complete the following word fragments with the first word that comes to mind.' In the high-power condition five of the word fragments could only be completed with words related to power (authority, boss, control, executive, influence; see Bargh et al., 1995). In the neutral condition, words were selected to be similar in length and difficulty to the power words but they could only be completed with words unrelated to power. In the low-power condition five of the word fragments could only be completed with words related to low power (subordinate, dependent, defer, underling, submit).

Risk Preference

We used an adaptation of Tversky and Kahneman's (1981) Asian Disease Problem. Specifically, participants were told 'Imagine that you work for a large car manufacturer that has recently been hit with a number of economic difficulties. It appears as if three plants need to be closed and 6000 employees laid off. As vice president of production, you have been exploring alternative ways to avoid this crisis.' In the gain frame, participants were told 'Plan A will save one of the three plants and 2000 jobs. Plan B has a 1/3 probability of saving all three plants and all 6000 jobs, but has a 2/3 probability of saving no plants and no jobs.' In the loss frame, participants were told 'Plan A will result in the loss of two of the three plants and 4000 jobs. Plan B has a 1/3 probability of losing no plants and no jobs, but has a 2/3 probability of resulting in the loss of all three plants and 6000 jobs.' Participants were asked 'Please indicate the extent to which you would favor one option over the other, if at all.' Responses ranged from 1 ('Very much prefer program A') to 6 ('Very much prefer program B').

Results and Discussion

We conducted a 3(power: high vs. neutral vs. low) × 2(framing: gain vs. loss) between participants ANOVA. Consistent with previous research, and as shown in Figure 2, participants in the loss frame (M = 3.30, SD = 1.22) preferred the riskier Plan B more than participants in the gain frame (M = 2.76, SD = 0.99), F(1, 80) = 6.44, p < 0.05.

More germane to our hypothesis, however, there was an independent main effect of the power prime, F(2, 80) = 3.98, p < 0.05. Planned comparisons showed that participants in the high-power condition (M = 3.50, SD = 1.05) preferred the riskier Plan B more than participants in the neutral condition (M = 2.79, SD = 1.35), F(1, 47) = 5.55, p < 0.05, and more than participants in the low-power condition (M = 2.86, SD = 0.97), F(1, 47) = 6.97, p < 0.05. However, participants in the low-power condition did not differ in their risk preferences from participants in the neutral condition, F(1, 55) = 0.15, ns This suggests that activating high-power drove individuals to be more risk-taking, but that activating low-power did not lead individuals to be more risk averse. There was not a significant interaction between power-prime condition and gain-loss frame, F(1, 47) = 0.01, ns Importantly, these findings further support the link between power and risk-taking, this time providing evidence using a nonconscious power-prime manipulation.

STUDY 4: POWER AND RISK: ENGAGING IN UNPROTECTED SEX

So far, we have demonstrated that power is associated with more optimistic risk perceptions and with preferences for risk. In Study 4, we examined whether powerful individuals' prefer risks because they...
are more optimistic. That is, do powerful individuals engage in more risky behavior because they are more confident their gamble will reap rewards? An alternative explanation is that the effects of power on risk-taking might be due to differences in self-efficacy beliefs. Self-efficacy is defined as a perception of one’s capability to attain a specified level or type of performance in a given setting (Bandura, 1982). Thus, power might increase individuals’ self-efficacy beliefs because power provides people with confidence in their skills and abilities. If so, the link between power and risk would be less about perceptions of risk, per se, than about individuals’ beliefs in their abilities to overcome obstacles if their risky behaviors result in disaster. We manipulated power by administering Galinsky et al.’s (2003) power mind-set manipulation that we used in Study 2. To measure the potential mediators of perceived risk and perceived self-efficacy, we asked individuals at the end of the vignette about their perceptions of the risky behavior (i.e., their thoughts about the risks inherent in unprotected sex), and coded the power vignettes for how much they exhibited high self-efficacy beliefs.

To measure risky behavior, participants were asked the likelihood that they would engage in sexual intercourse without a condom (MacDonald, Fong, Zanna, & Martineau, 2000). An advantage of using this decision-making context is that it confronts participants with a situation which is relevant to their own lives, a dilemma with which they could easily be faced. As research has shown, sexual activity among college students is quite prevalent and unprotected sex is widespread (MacDonald et al., 2000). Following the procedure of MacDonald et al. (2000), we created an inhibiting cue by reminding participants that they would be having sex without a condom if there were to engage in sexual intercourse.

In using the mind-set manipulation again, however, we also wanted to rule out a potential confound: when we ask individuals in the high-power condition to write about a time in which they had power over someone else, it is possible that they will write more about risk-taking in their essays than people in the low-power condition. Thus, the effect of the high-power mindset manipulation on risk-taking might occur because it directly primes the concept of risk. If this were the case, then engaging in risky
behavior might simply be an example of semantic priming. To address this potential confound, we coded the power vignettes for how much they discussed engaging in risky behaviors.

Finally, we also wanted to examine factors that moderate the effects of power on risky behavior. As other theorists have pointed out, the effects of power often depend on whether individuals have a sense of responsibility to others (Chen et al., 2001; Overbeck & Park, 2001). For example, individuals are less likely to behave in self-interested ways if they feel responsible for others’ outcomes. Thus, we hypothesized that individuals in the high power condition would be less likely to take risks if, while writing about the time they were in a powerful position, they had written also about the responsibilities that went along with that position of power.

Methods

Participants

Participants were 66 undergraduates (35 men, 31 women) at Northwestern University who were paid $10. Ethnicity data were not collected in this sample.

Power Mind-set Manipulation

We again used Galinsky et al.’s (2003) manipulation of power and then coded the essays for how much power the participant possessed using a 7-point scale. Checking for the effectiveness of the manipulation (i.e., the power essays), we again found that those in the high-power condition were coded as having more power in the essay ($M = 3.77$, $SD = 1.02$) than participants in the low-power condition ($M = 1.03$, $SD = 0.17$), $t(64) = 15.65, p < 0.01$. In addition, we coded essays for how much the protagonist discussed self-efficacy related beliefs (i.e., the ability to achieve his/her goals) using a 7-point scale, from 1 (‘Definitely not’) to 7 (‘Yes, definitely’), and for how much the protagonist discussed engaging in risky behavior, from 1 (‘Very little’) to 7 (‘A lot’). Finally, in the high-power condition, we coded the essays for how much they described the responsibilities of occupying a high-power role, from 1 (‘Very little’) to 7 (‘A lot’). To check for the reliability of these four codes, a second coder rated 20% of the essays. The two judges showed agreement on all four codes: the correlation between the two coders’ ratings was 0.96 ($p < 0.01$) for ‘power’ ratings, 0.59 ($p < 0.01$) for ‘self-efficacy’ ratings, 1.00 ($p < 0.01$) for mentions of risk-taking, and 0.90 ($p < 0.01$) for mentions of responsibility.

Risky Behavior Vignette

Following the essay task and a number of filler tasks that lasted approximately 15 minutes, participants were presented with the following scenario: ‘Imagine that you are single and that you run into a very attractive acquaintance while ordering a drink at the bar. The two of you begin to talk, and both of you find the conversation very enjoyable. She (or he) has a good sense of humor, and seems genuinely interested in what you are saying. It is clear that there is definite chemistry between you and that you are interested in this person. You continue to spend time together throughout the night. When the bar closes, she (he) offers to walk you home. When you get home, she (he) kisses you goodnight at the door. You decide to go inside and talk for a while. After talking, you and she (he) begin to make out on the couch. Things progress and you realize that you are both very interested in having sex with each other. She is (you are) on the pill, but neither of you have a condom. You discuss the possibility of
going to a store, but there is not one nearby. You awkwardly discuss your sexual history, and she (he) tells you that she (he) does not sleep around.

**Intention to have Unprotected Sex**

As in the MacDonald et al. (2000) study, participants were then asked to rate the statement ‘If I were in this situation, I would have sex without a condom,’ on a scale from 1 (‘Very unlikely’) to 7 (‘Very likely’). Similar to the ‘inhibiting cue’ condition in MacDonald et al., we placed the phrase ‘without a condom’ in bold typeface to provide an inhibiting environmental cue.

**Optimistic Perceptions of Risk**

We used items from the MacDonald et al. (2000) study, that asks participants about their perceptions of having sex without a condom: ‘Because she is (I am) on the pill and won’t get pregnant, there’s little for me to worry about if we have sex without a condom,’ ‘Because she (he) looks totally healthy, it’s alright if we have sex without a condom,’ ‘Because I can tell that she (he) is not the type who sleeps around, it’s alright if we have sex without a condom,’ ‘There’s no reason for me to be worried about using a condom if she’s (he’s) not,’ and ‘A situation like this only occurs once in a while, so it would be worth the risk involved for me to have sex without a condom,’ on a scale from 1 (‘Strongly disagree’) to 7 (‘Strongly agree’). The five items showed high internal consistency, alpha = 0.88, and were thus combined to form one measure of risk-perception. Again, in all the questions the phrase ‘without a condom’ was in bold typeface. Higher numbers indicate more optimistic perceptions of risk.

At the end of the study, participants were asked ‘It is helpful to us to know if you think any of the earlier tasks influenced your performance on any subsequent tasks. Please take a moment to record any thoughts you had (If any) about such an influence.’ No participant reported suspicions that the power mind-set prime was related to the risky behavior vignette.

**Results and Discussion**

As men and women likely differ in their willingness to have casual sex in general (Clark & Hatfield, 1989), we conducted a 2(power: high vs. low) × 2(sex of participant: male vs. female) between participants ANOVA. As shown in Figure 3, participants in the high-power condition were more likely to have sex without a condom than participants in the low-power condition, $F(1, 62) = 5.82, p < 0.05$. There was also a marginal main effect for sex of participant, $F(1, 62) = 3.10, p = 0.08$, suggesting that women were less likely to engage in unprotected sex than men. However, there was not a significant interaction between power condition and sex of the participant, $F(1, 62) = 0.01$, suggesting that power made men and women equally likely to engage in unprotected sex. Finally, there was a significant correlation between the level of power the participants reported possessing and their likelihood of engaging in unprotected sex, $r(66) = 0.32, p = 0.05$. Thus, the more power participants were coded to have possessed in the situation they recalled, the more likely they were to have sex in the current vignette.

**Optimistic Perceptions of Risk as a Mediator**

If optimistic perceptions of risk mediated the effect of power, four conditions must be met (Baron & Kenny, 1986). First, power must affect the likelihood of having sex, which we have already shown. Second, power must affect the optimism with which participants perceived the risk involved; participants
in the high-power condition ($M = 2.17, SD = 1.28$) were more optimistic in their perceptions of risk in having sex without a condom than participants in the low-power condition ($M = 1.55, SD = 1.05$; $\beta = 0.26, t(64) = 2.18, p < 0.05$), thus satisfying the second condition. Third, perceptions of risk need to be related to the likelihood of having sex, while controlling for the effects of power. Controlling for power, optimistic perceptions of risk predicted the likelihood of having sex, $\beta = 0.77, t(63) = 10.10$, $p < 0.01$, thus satisfying the third condition. Fourth, the effect of power on the likelihood of having sex needs to be reduced when taking into account the perceptions of risk. Controlling for perceptions of risk, the effect of power dropped to $\beta = 0.12, t(63) = 1.55$, ns A Sobel test showed that the reduction in the association between power and having unprotected sex was significant, $Z = 2.12, p < 0.05$. Thus, optimistic perceptions of risk mediated the effects of power on the preference for risk.

**Alternative Explanations**

We next examined the alternative explanations that self-efficacy beliefs or that writing about risk-taking in the essays might account for the effects of power on risk preferences. These two explanations did not receive support. Although there was an effect of power on self-efficacy beliefs, $t(64) = 2.55$, $p < 0.05$, self-efficacy beliefs were not related to the likelihood of engaging in unprotected sex, $\beta = -0.20, t(64) = -1.66$, ns Further, there was no effect of power on writing about risk-taking in the vignettes, $t(64) = 1.04$, ns, nor was the amount of risk-taking described in the essays related to the amount of risk-taking in the condom scenario $\beta = -0.09, t(64) = -0.74$, ns.

**Moderating Conditions: The Sense of Responsibility**

Finally, we examined whether a sense of responsibility would attenuate the effects of power on risk preference. We only coded power essays in the high-power condition for how much they spoke about
the responsibilities that went along with their power, as such responsibilities by definition only come with being in a powerful position. Thus, we tested whether there was a negative relation between how much individuals in the high-power condition wrote about their responsibilities and their likelihood of engaging in unprotected sex. We found a marginally significant negative relation, $r(31) = -0.25$, $p = 0.08$, suggesting that a sense of responsibility had an attenuating effect on risky behavior.

Summary

The findings in Study 4 showed that power leads to a heightened tendency to engage in risky behavior. Importantly, the power-induced preference for risk-taking was due to a more optimistic perception of risky behavior: people in the high-power condition saw engaging in unprotected sex as less risky than people in the low-power condition. Further, we did not find evidence that this effect was due to differences in self-efficacy beliefs or in how much individuals in each condition had written about risk-taking in their vignettes. The alternative explanation—that the essays semantically primed risk-taking—did not receive any support. Finally, we found evidence consistent with the notion that the preference for risk was attenuated when individuals had a higher sense of responsibility to their constituents.

STUDY 5: RISK-TAKING IN FACE-TO-FACE NEGOTIATIONS

In Study 5, we extended our investigation of the link between the sense of power and risk-taking by examining individuals' behavior in actual face-to-face interactions. Specifically, we examined risk-taking in the context of a dyadic negotiation.

Negotiations are an ideal setting in which to examine power and risk-taking because virtually all negotiations provide individuals with opportunities to take risks or to behave more conservatively. Most negotiations offer the opportunity to make both individuals better off, typically by 'expanding the pie' or 'creating value' at the bargaining table. Doing so, however, requires that the negotiators divulge information about their preferences and priorities (Lax & Sebenius, 1992)—a risky proposition because it makes the negotiator vulnerable to the other side's claiming tactics. Thus, a tension exists in every negotiation: the competitive strategies used to claim value tend to undermine cooperation, whereas a cooperative approach makes one vulnerable to competitive bargaining tactics. This tension has been called 'the negotiator's dilemma,' because like in the classic prisoner's dilemma, individually rational (i.e., risk averse) decisions to emphasize claiming tactics can lead to mutually undesirable outcomes. Therefore, negotiators have an important decision to make: whether to take a risk and communicate information to the other party, or to protect themselves by withholding information. As it turns out, taking such risks depends on optimistic assessments of the other sides' intentions (Anderson & Thompson, 2004; Bazerman & Neale, 1992; Raiffa, 1982). In the current study, we assessed risk-taking by measuring how much individuals' divulged information about their preferences and priorities, and assessed optimism by measuring how much risk they perceived in doing so.

Second, we have argued that individuals' sense of power is a psychological extension of their socio-structural position. In Study 5, we examined the relation between the sense of power and socio-structural variables by experimentally manipulating individuals' power in the negotiation, expecting that this would shape their context-specific sense of power in the negotiation setting. In turn, we expected their sense of power in this specific setting to dictate their risk-taking behavior. An additional benefit of taking
this approach is that rather than focus on the sense of power in general as we did in Studies 1 and 2, we observed the effects of individuals' sense of power in a specific face-to-face context.

Methods

Participants and Design

Participants were 36 masters of business administration (MBA) students at Northwestern University who were enrolled in a course on negotiations (25 men, 11 women). Ethnicity data were not collected. The study was conducted in the 2nd week of the course.

Procedure

Participants negotiated in dyads as part of a class exercise. Each dyad comprised a job candidate and a job recruiter negotiating during a job interview (Neale, 1997). The negotiation involved issues such as salary, signing bonus, and starting occupational level. Participants received their role instructions before the exercise began. They were given 40 minutes to negotiate; after the negotiation, participants privately completed a questionnaire.

Power Manipulation

To experimentally manipulate power, we used the common method of making one dyad member more dependent on the other for valued resources than vice-versa (e.g., Pinkley, Neale, & Bennett, 1994). For example, in half the dyads, recruiters were put in a low-power position by telling them they had no other job candidates available, and thus that they were dependent on this negotiation and on this candidate to fill the vacancy; the candidates they negotiated with, however, were put in a high-power position by telling them they had a second, equally attractive job offer and thus were not totally dependent on the recruiter for employment. In the other half of the dyads, recruiters were put in a high-power position and candidates put in a low-power position; thus, there were an equal number of high-power and low-power recruiters and high-power and low-power candidates (9 in each condition).

Sense of Power Measure

Participants' sense of power in the negotiation was measured with a context-specific version of Anderson et al.'s eight item (2005) sense of power scale. In particular, we adapted each of the eight items so that each addressed participants' power in the specific negotiation context. For example, participants rated their agreement with statements such as 'I think I had a great deal of power in the negotiation,' 'I had a great deal of influence or control in the negotiation, and 'I could get the other party to do what I wanted in the negotiation' on a scale from 1 ('Disagree strongly') to 7 ('Agree strongly'). The scale showed internal consistency, alpha = 0.79. The mean was 5.46 (SD = 0.64). There were no sex differences.

Optimism

Participants rated their agreement with five items, 'S/he cared about my interests and needs,' 'S/he worked hard to maximize the pie,' 'I trusted the other party,' 'S/he was only looking out for him or
herself,' and 'S/he worked hard to maximize his/her slice of the pie,' on a 1 ('Disagree strongly') to 7 ('Agree strongly') scale. After reverse-scoring the latter two items, the five items showed internal consistency, alpha = 0.64, and were thus combined into an overall measure of optimism \( M = 4.92, SD = 0.80 \). There were no sex differences.

**Risk-taking**

To measure how much participants took risks in sharing information, they rated their agreement with five items: 'I communicated my interests and preferences openly,' 'I told the other party some information first, hoping they would reciprocate by telling me some information,' 'I was wary of trusting the other party,' 'I did not want to take risks on giving them too much information,' 'I did not want to tell the other party anything until they gave me information first' on a scale from 1 ('Disagree strongly') to 7 ('Agree strongly'). After reverse-scoring the latter three items, all five items showed satisfactory internal consistency coefficient alpha reliability = 0.68; \( M = 5.00, SD = 1.06 \). There were no sex differences.

**Analyses**

Data collected in dyads can violate assumptions of independence. According to Kenny and LaVoie (1985), if such non-independence exists, it is best to analyze data at the dyad level. However, if the data within dyads are not dependent, they suggest that individual data should be used and effects should be interpreted at the individual level. In analyzing dyadic data, therefore, they suggest that one should first test the intraclass correlation of each variable for evidence of nonindependence. If the intraclass correlations are significant, then the data should be analyzed at the group or dyad level; if they are nonsignificant, then the data should be analyzed at the individual level. Specifically, they argue: 'If there is no group variance, it does not seem sensible to compute group means and then correlate measures at the group level' (p. 344; although they use the term 'group,' their argument applies to dyads as well). Following Kenny and LaVoie (1985), we determined the proper level of analysis for each dependent variable using the ANOVA method. These analyses showed that no intraclass correlation was significant for any variable under consideration, or that no variable was dependent within dyads. Therefore, as they suggest, we conducted all analyses on the individual level.

**Results and Discussion**

**Structural Position and the Sense of Power**

To examine whether the manipulation of power affected participants' sense of power, we conducted an ANOVA with power (high vs. low) and role (recruiter vs. candidate) as the two factors. As expected, individuals in the high-power condition had a higher sense of power in the negotiation than individuals in the low-power condition \( M = 5.70, SD = 0.49 \) compared to \( M = 5.21, SD = 0.69 \), \( F(1,32) = 5.77, p < 0.05 \). There was no effect for occupying the recruiter vs. candidate role and no interaction between the power manipulation and role. Participants' sense of power in the negotiation was affected solely by the power manipulation.
The Sense of Power and Risk

Regressing optimistic risk perceptions on the sense of power, we found a significant effect, $\beta = 0.35$, $t(34) = 2.15$, $p < 0.05$. The more participants perceived themselves to be powerful in the negotiation, the more optimistic they were in their perceptions of risk. We next regressed participants’ risk-taking behavior on their sense of power, and also found a significant effect, $\beta = 0.33$, $t(34) = 2.01$, $p = 0.05$. The more participants perceived themselves as powerful in the negotiation, the more risks they were willing to take by divulging information.

Did participants’ perceptions of risk in the negotiation mediate the effect of individuals’ sense of power on their risk-taking behavior? As we have already shown, the sense of power significantly predicted both the mediator (optimistic perceptions of risk), and the dependent variable (risk-taking behavior). The effect of perceptions of risk on risk-taking behavior remained significant when controlling for the sense of power, $\beta = 0.48$, $t(33) = 3.11$, $p < 0.01$. The effect of the sense of power on risk-taking behavior decreased when controlling for perceptions of risk, $\beta = 0.16$, $t(33) = 1.04$, ns. A Sobel test showed that the reduction was marginally significant, $Z = 1.76$, $p = 0.07$. These results suggest, therefore, that the sense of power on risk-taking behavior was partially mediated by perceptions of risk.

In terms of the direct effects of the power manipulation on risk-taking, there was a tendency among those with high power toward taking more risks ($M = 5.18$, $SD = 1.83$) than those with low power ($M = 4.82$, $SD = 1.24$), though this was not statistically significant. Our model proposes that the relationship between the power manipulation and risk will be driven by the sense of power. Thus, the two relationships discussed above, a) that the power manipulation increased individuals’ sense of power and b) that the sense of power predicted optimism in perceptions of risk and risky behavior, provide evidence in support of our model. Shrot and Bolger (2002) and others (Collins, Graham, & Flaherty, 1998; Mackinnon, 2000) have argued that evidence of a mediated relationship does not always require a statistically significant relationship between the independent variable and the dependent variable (i.e., the direct relationship between power and risk-taking), as Baron and Kenny (1986) have proposed. They argue that situations with a subtle independent variable which has a distal relationship with the dependent variable will produce weak direct relationships that require extraordinarily large samples to detect (Shrot & Bolger, 2002). The negotiation process in the present experiment is one such situation where there is a long temporal period between the minimal manipulation of power and assessments of risk-taking and a significant mediating variable, the sense of power, which is more proximal to the outcome.

GENERAL DISCUSSION

The Link between Power and Risk

Across five studies we have found converging evidence that a heightened sense of power increases individuals’ optimism in viewing risks and their propensity to engage in risky behavior. In Study 1, individuals with a higher generalized Sense of Power were more optimistic regarding personally relevant future events, such as enjoying their post-graduation job and avoiding gum disease. This increased optimism occurred regardless of whether the events were positive or negative, controllable or uncontrollable. In Study 2, both a high generalized Sense of Power and a mind-set manipulation of power led to more optimistic estimates of dangers in the world at large, such as floods, fires, or heart disease. In Study 3, power was nonconsciously primed via a word completion task and power
increased actual preferences for risk. Specifically, in the Asian disease paradigm, people in the high-power condition were more likely to choose a riskier option than people in the neutral and low-power conditions; further, this effect was independent of the classic gain/loss framing effect that is typical of prospect theory (Tversky & Kahneman, 1981). In Study 4, individuals placed in a high-power mindset saw less danger in engaging in unprotected sex, and were more willing to engage in this risky behavior. In Study 5, individuals who had a higher context-specific sense of power in a face-to-face negotiation perceived less risk in divulging information to their opponent and in fact divulged more information than did individuals with a lower sense of power.

In Study 3, in which we aimed to tease apart the effects of possessing and lacking power, we found that assigning individuals to the high-power condition made them more risk-seeking, but that assigning individuals to the low-power condition did not make them more risk-averse. This is suggestive, at least, that powerful individuals are more lured by the potential rewards inherent in risky behaviors, and more optimistic about their risks paying off, whereas powerless individuals do not seem to be dissuaded by the potential dangers of risky behaviors.

The positive association between power and risk that we consistently found seems to contradict empirical evidence suggesting that low status and the lack of power can be associated with risk-taking behaviors; for example, the finding that low SES is associated with risky behaviors such as unprotected sex or eating unhealthily. However, we believe these two sets of findings can be reconciled. Lower socioeconomic status, while associated with a lower generalized sense of power (Anderson et al., 2005), also involves lower education levels. Perhaps education moderates our observed relationship between power and risk; it is highly possible that people low in SES are less educated about, and thus aware of, the risks inherent in dangerous behaviors such as unprotected sex or eating unhealthy diets. Further, economic poverty and low buying power may also limit the capacity to buy condoms and better quality foods. Future research should certainly tease apart the role of education and poverty from the sense of power in determining the prevalence of risky behavior.

Mediating Mechanisms

Given our studies demonstrate that power leads to increased preference for risk, a critical question concerns the underlying mechanisms. We can think of at least three possible mediating variables. First, as we argued in the Introduction, power might increase risk propensity because it leads people to attend more to the potential rewards of a risky behavior and less to the dangers inherent in that action; in other words, outside of any deliberative calculation of probabilities, powerful people might be impulsively drawn to risky behaviors because of the lure of potential rewards (e.g., they are so focused on the prospect of winning a bet that they do not bother to calculate the risks involved). Second, power might lead people to be more optimistic in their risk estimates, in assessing the probability of experiencing the downside of risk. Powerful individuals might be just as likely to implicitly calculate the expected value of a risky behavior, but they will estimate a higher likelihood of avoiding the risks. Third, power might not affect perceptions of risk, but increase risk propensity because it leads people to be confident in their abilities to capture the upside of risk or to deal with negative consequences should their risky behavior fail to pay off (e.g., they believe they can easily pay off their debts, or talk others out of enforcing the bet). The powerful may feel more self-efficacious in using their abilities to get the rewards or to deal with the downside of risk.

Although our findings do not address the first explanation, they provide suggestive evidence in support of the second explanation and against the third. That is, our findings do not speak to whether powerful individuals, in their daily lives, tend to impulsively take risks in a less calculated, reasoned manner. Our findings do suggest, however, that powerful individuals are more risk-seeking at least in
part because they are more optimistic in their risk estimates. Studies 1 and 2 showed that power was associated with more optimistic perceptions of risks, and Studies 4 and 5 showed that the effect of power on risk preferences was mediated by optimistic perceptions of risk. The third explanation, that power provides individuals with heightened self-efficacy beliefs, was not supported using a measure of self-efficacy themes in the power essays in Study 4. Of course, this is not to say that self-efficacy beliefs do not contribute to risk preferences in other contexts; we simply did not find evidence here.

The finding that optimism plays an important role in leading the powerful to engage in risky behavior also solves an apparent contradiction with prospect theory. Although the powerful may appear to be in the domain of gains and therefore would be expected to be risk averse, they produce more optimistic probabilities. As pointed out and demonstrated in Study 3, decisions related to risk independently depend both on how outcomes are framed (a characteristic of the value function) and on the probabilities that people assign to potential outcomes (Gonzalez & Wu, 1999). Future research should continue to explore how the assessment of probabilities and the value function independently and interactively affect risk.

Moderating Factors

Another important question to address in studying the link between power and risk is, when will the effects of power on risk-taking be exaggerated and when will they be mitigated? In our fourth study, we found some evidence that the relationship between power and risk preferences is moderated by expressions of responsibility, which is consistent with recent work on how power and responsibility influence perceptions of others (Overbeck & Park, 2001). Thus, under conditions in which powerful individuals feel some sense of responsibility for the outcomes of those they lead, one might not observe the same proclivity for risk.

Another factor that might moderate how power influences the preference for risk is the stability of individuals' power (Keltner et al., 2003). That is, someone who possesses power and is unlikely to lose it should be more likely to take risks than someone who possesses power but who could lose it at any moment (Ng, 1980). The stability of power may be one case when the powerful are focused on maintaining their gains and therefore would be risk averse as prospect theory would predict.

It is important to note that sex did not moderate any of our effects. We did not obtain a single interaction between sex of participant and the independent variable of power in our studies. The relation between the generalized Sense of Power and optimism (Study 1), between the power mind-set prime and risk perceptions (Study 2), and between sense of power and tendency toward risk in a negotiation, were equally strong for men and women. In Study 4, the power mind-set prime had similar effects on men's and women's willingness to engage in risky sexual behavior (although sex of participants did have a marginal effect independent of power on risk preferences). These consistent effects across men and women might seem surprising, as men have been shown to be more 'power-oriented' than women in various ways. For example, men show a stronger preference for hierarchical relations (Pratto, Stallworth, & Sidanius, 1997), perceive relationships as more hierarchically organized (Mast and Hall, 2004), and are more likely to assume leadership positions (Bagly, Karau, Miner, & Johnson, 1994). Thus, men might be more prone towards risk when in powerful positions. However, our findings are consistent with previous work that has found men and women to be similarly affected by possessing power (e.g., Anderson & Berdahl, 2002; Dovidio, Brown, Heltman, Ellyson, & Keating, 1988; Galinsky et al., 2003). Together, these findings suggest that while men and women might have traditionally differed in their levels of power on a societal level, and while they might have different value orientations about power, they are similarly affected by power (i.e., behavioral approach system is just as strongly activated) once they possess it.
Implications for the Study of Power

The observed link between power and risk has implications for our understanding of how power, once attained, is maintained (as well as how it is lost). The positive relationship between power and risk-taking could contribute to losses in power. Taking unnecessary gambles might lead one to suffer adverse physical consequences, financial losses, or lose friends and allies if the risky behavior involves engaging in offensive social behavior and violating social norms. In other words, an increase in risk-proneness might be one reason that power often ‘leads to its own demise’ (Winter & Stewart, 1983). On the other hand, however, engaging in risky behavior might instead help individuals maintain or even increase their power in a couple of ways. First, by inducing risky behavior, the powerful may take advantage of high upside opportunities that others avoid. For example, in the case of oil and gas producers, the number of CEO stock options predicts future exploration risk taking (Rajgopal & Shevlin, 2002). These stock option-induced investments in risky projects has been shown to materially pay off, leading to superior firm performance and overall firm value maximization (Cohen, Hall, & Viceira, 2000; Core & Guay, 1999) and this would ultimately lead to increases in CEO wealth and power. By engaging in risky behavior, the powerful often increase their power.

Second, risky behavior may increase power because of the message it implicitly conveys to others: that they can afford to take such risks by virtue of their power (Conniff, 2002). Evolutionary theorists Zahavi and Zahavi (1997) have argued that engaging in such behavior signals to potential mates that one is strong, robust, and can withstand the potential negative consequences inherent in the risk. Conniff (2002) also builds from this idea in his discussions of why exceptionally wealthy people take extreme and unnecessary risks. He proposes that scaling Mt. Everest, taking solo balloon flights around the world, or paying $20 million for a ride into space signals to others that one can afford to do so, which, in turn, helps boost wealthy individuals’ prestige and social status.

Perhaps most important, however, the current work helps build empirical support for the Approach/Inhibition Theory of power (Kelmer et al., 2003). The Approach/Inhibition Theory has received preliminary support in research showing that power leads, for example, to more positive and less negative emotion, higher levels of expressiveness, the pursuit of resources and rewards, and a greater attentiveness to rewarding information and less attention to threatening information (e.g., Anderson & Berdahl, 2002; Galinsky et al., 2003). In the current work, we found that power also leads to a greater tolerance for and preference for risk, and thus, helps begin to examine some of the important social implications of that theory.

Risk-Taking and Metaphors of Power

People have long associated the possession of power with intoxication, crystallized in the phrase ‘drunk with power.’ Inherent in this expression is the idea that power and alcohol produce the same effects on decision making. One intriguing aspect of our findings in Study 4 is that they differed from the effects of alcohol intoxication observed in the MacDonald et al. (2000) study. In their studies, MacDonald et al. found that alcohol intoxication is not dis-inhibiting but leads to alcohol myopia (Steele & Josephs, 1990), meaning that when there are inhibiting cues present, alcohol leads to less risky and more prudent behavior. In Study 4, we created the same inhibiting cue as in MacDonald et al. (2000), yet we found that participants in the high-power condition were dis-inhibited and more likely to take risk. This leads to the intriguing suggestion that, contrary to popular wisdom, power and alcohol may have divergent effects on behavior. Alcohol narrows and restricts attention, leading to a focus on salient cues regardless of whether those cues are based in rewards, whereas power directs attention towards rewards and away from threats. The phrase ‘drunk with power’ may be a misnomer.
The current findings also provide a potential alternative explanatory lens on the notion that ‘power corrupts’ (Kipnis, 1976). Many of the behaviors powerful people engage in have been attributed to the corrupting influence of power: extramarital affairs, shady business dealings, or risky corporate mergers and acquisitions. It is possible, however, that these behaviors are not due to the corrupting influence of power per se, but to the disinhibiting influence of power. Powerful people might be so focused on the payoffs and not focused at all on the consequences of their actions, and more optimistic that they can get away with a range of actions, that their behavior becomes more risky, less inhibited, and more likely to violate social and ethical norms. It might be that optimism, rather than any inherent wickedness, leads powerholders to engage in such egregious acts.

REFERENCES


APPENDIX A

Generalized Sense of Power Scale Items

In rating each of the items below, please use the following scale:

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>Disagree strongly</td>
<td>Disagree</td>
<td>Disagree a little</td>
<td>Neither agree nor disagree</td>
<td>Agree a little</td>
<td>Agree</td>
<td>Agree strongly</td>
<td></td>
</tr>
</tbody>
</table>

In my relationships with others . . .

- I can get people to listen to what I say.
- My wishes do not carry much weight.
- I can get others to do what I want.
- 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.
- If I want to, I get to make the decisions.