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## Persuasion Among the Powerful and Powerless

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THE FLORIDA STATE UNIVERSITY  
COLLEGE OF ARTS AND SCIENCES

PERSUASION AMONG THE POWERFUL  
AND POWERLESS

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## **ABSTRACT**

Feeling powerful or powerless can affect the manner in which one processes persuasive appeals. Previous research suggests that people who lack power tend to engage in careful, deliberate forms of cognition. In contrast, high power has been linked with cognitive strategies, such as stereotyping and heuristic processing, that emphasize speed and simplicity over accuracy. Thus, previous research suggests that powerful people may be persuaded by the heuristic content of appeals more than powerless people, because powerful people may not evaluate those appeals as carefully. The current research, in contrast, presents a more nuanced set of predictions regarding the effects of power on heuristic processing: individuals primed with high versus low power will respond differentially to two commonly used persuasive appeals that rely on different heuristic cues: social proof and scarcity. The social proof appeal is based on making a product or behavior seem popular and consistent with social norms. The scarcity principle is based on making a product seem rare or exclusive. Two studies test the prediction that people primed with high power will be especially responsive to scarcity appeals, whereas people primed with low power will be especially responsive to social proof appeals. In Study 1, participants were primed with high or low power and read a review of a restaurant that contained either a scarcity appeal or a social proof appeal. Participants primed with high power were susceptible to the scarcity appeal, whereas participants primed with low power were susceptible to the social proof appeal. Study 2 tested two possible mechanisms underlying those effects: affiliative motivation and BIS/BAS engagement. Contrary to predictions, no effect of the power prime was found on either of those two putative mediating variables. However, relationships between the mediators and persuasion were observed. As predicted, high levels of affiliative motivation and relatively high BIS were both linked with heightened susceptibility to the social proof appeal. Directions for future research on power and persuasion are discussed.

# **CHAPTER 1**

## **INTRODUCTION**

Power is a pervasive and influential component of social groups. Social power represents an individual's relative control over group resources (Emerson, 1962; Keltner, Gruenfeld, & Anderson, 2003) and power affords the ability to control other people by granting or withholding access to those resources. Both early (French & Raven, 1959; Hunt & Nevins, 1974; Milgram, 1963) and recent research (Anderson & Galinsky 2006; Galinsky, Gruenfeld, & Magee 2003; Magee, Galinsky, & Gruenfeld 2007; Smith & Trope 2006) suggest that having power has profound consequences for how people perceive and act in the world around them.

Understanding how power affects decision-making is particularly vital because the decisions made by powerful individuals can have enormous consequences. Politicians make decisions about the merit of policies that can affect entire countries; business leaders make decisions about hiring or firing employees; and generals make decisions about military operations that have life or death consequences for their subordinates. Fortunately, a rapidly expanding literature is examining the influence power can have over its holder.

### **1.1 The Power-Approach Theory**

The Power-Approach Theory (Keltner et al., 2003) provides an overarching theory about the antecedents and consequences of power. Having heightened access to resources tends to engage the behavioral activation system (BAS), a neurobiological system that encourages one to seek reward, take risks, and be active (Gray 1981). The BAS tends to be engaged in situations that contain ample rewards and positive stimuli. The brain region activation, neurochemistry, emotions, and behavior associated with BAS engagement encourage quick, uninhibited pursuit of goals (Carver & White, 1994). Thus, Keltner and colleagues hypothesized that, because holding high power positions involves relatively uninhibited access to rewards, having power would engage the BAS and promote its associated affective, behavioral, and cognitive consequences. That is, experiencing a state of social power was hypothesized to promote patterns of cognition emphasizing attention to reward and behavior marked by increased action, agency, and risk-taking.

In many cases, the predictions made by the power-approach theory have been supported. Research has demonstrated that power leads to approach behaviors (Anderson & Berdahl, 2002; Maner, Kaschak, & Jones, 2010; Smith & Bargh, 2008), risk taking (Anderson & Galinsky, 2006), disinhibited behavior (Hirsh, Galinsky, Zhong, 2011), and goal pursuit (Gruenfeld, Inesi, Magee, & Galinsky, 2008; Guinote, 2007). Not only does power cause approach-related behavior, it is also linked to some of the cognitive and affective manifestations of BAS engagement including narcissism (Mead, Baumeister, & Vohs, 2009), confidence (Briñol, Petty, Valle, Rucker & Becerra, 2007), positive emotion (Keltner et al., 2003), attention to rewards (Maner, Gailliot, Menzel, & Kunstman, 2012; Pettit & Sivanathan, 2012), stereotyping (Guinote, Willis, & Martellotta, 2010), and illusions of control (Fast, Gruenfeld, Sivanathan, & Galinsky, 2009). Overall, these findings support the hypothesis that power affects behavior through the engagement of the BAS.

The BAS is often contrasted with the behavioral inhibition system (BIS), which is characterized by anxiety, attention to threats, risk-aversion, and behavioral inhibition (Carver & White, 1994; Gray, 1981; Gray, 1987). BIS engagement is theorized to be a functional response to a threatening environment, ultimately protecting the organism from danger and other negative outcomes. Keltner's power-approach theory suggests that lacking power engages the BIS because a lack of power is associated with a relative vulnerability to punishment and susceptibility to threat (Ellyson & Dovidio, 1985; Schwartz, Dodge, & Coie, 1993). However, recent research testing the BIS-related effects of low power has been scarce (c.f. Wilkinson, Guinote, Weich, Molinari, & Graham, 2010). The majority of research on power in social psychology has focused on the effects of having power, rather than the effects of lacking it.

While the power-approach theory has been generative, some of its predictions have received mixed support (Schmid Mast, Jonas, & Hall, 2009). For example Keltner et al. (2003) proposed that power would increase reliance on quick, effortless, and efficient modes of cognition in order for powerful people to gain the most benefit from a relatively safe and accommodating social environment. Conversely, lacking power is associated with susceptibility to punishment and threats in one's environment, so low power is hypothesized to lead to more cautious and deliberate cognitive processing.



However, the evidence for these hypotheses has been equivocal (Smith & Trope, 2006). For example, consider the effect of power on stereotypes and heuristics – both types of mental shortcuts that allow people to make judgments and decisions in a quick and easy fashion. Stereotypes conserve mental effort because individuals using them rely on their pre-existing beliefs about groups when judging individuals, a less demanding cognitive task than gathering information about people as individuals. Although most studies have suggested that power increases simplistic stereotyping of social targets (Fiske, 1993; Fiske, 2001; Goodwin, Gubin, Fiske, & Yzerbyt, 2000; Goodwin, Operario, & Fiske, 1998; Guinote et al., 2010), there is some evidence that giving people a sense of power increases the extent to which they see other people as individuals (Overbeck & Park, 2001). This suggests that the experience of power does not inevitably or universally lead to reliance on cognitive simplification strategies.

Similarly, the literature on power and decision heuristics has produced mixed findings. Heuristics are simple rules that people use to quickly evaluate information and make decisions. For example, people tend to trust the word of self-proclaimed “experts” without thinking critically about the content of what the purported experts are saying (Chaiken, Liberman, & Eagly, 1989). Instead of evaluating the arguments on their inherent strength or logic (a cognitively demanding task), people often use the simple cue of perceived source expertise to judge the quality of a persuasive message. That is, they respond to the “expert” label by taking at face value whatever arguments are voiced. By simplifying judgments and decisions, heuristics can increase the ease and speed with which people process information, although heuristics may also sacrifice accuracy (Kahneman, 2003; Kahneman, Tversky, & Slovic, 1982).

Some research suggests that power promotes reliance on heuristics. For example, powerful individuals are more likely than individuals primed with low power to rely on the ease-of-retrieval heuristic (Weick & Guinote, 2008). When instances are easy to recall, powerful individuals are more likely than low-power individuals to judge those events as common. Power primes also increase reliance on the anchor-and-adjustment heuristic (i.e., relying too heavily on a first impression) and increase the extent to which participants were persuaded by the mere length of a persuasive argument (Menzel & Maner, unpublished data).

However, not all research has supported the hypothesis that power leads to cognitive simplification strategies such as heuristics. For instance, the amount of effort powerful

individuals put into cognitive tasks depends on how they judge the task. If participants view the task as unimportant, power does seem to decrease effort and increase reliance on heuristics. However, when participants view a task as important, power increases effort and reduces their reliance on heuristics (DeWall, Baumeister, Mead, & Vohs, 2011). Thus, depending on the situation, power can either increase or decrease people's use of mental shortcuts. Moreover, the cognitive and behavioral consequences of power have also been shown to depend specifically on the stability and legitimacy of power (Lammers, Galinsky, Gordijn, & Otten, 2008; Sligte, de Dreu, & Nijstad, 2011). In fact, the effects of power can reverse themselves depending on the stability of the hierarchy (Maner, Gailliot, Butz, & Peruche, 2007).

Another set of explanations for the inconsistent effects of power may involve individual differences in how people respond to power. The effect of power is not uniform across individuals. Dominance motivation, relationship orientation, cultural background, anxiety, moral identity, one's sense of responsibility, and testosterone levels have all been shown to moderate the effect of power (Chen, Lee-Chai & Bargh, 2001; DeCelles, DeRue, Margolis, & Ceranic, 2012; Lammers, Stoker, & Stapel, 2009; Maner et al., 2012; Menzel & Maner, unpublished data; Ronay & Von Hippel, 2009; Zhong, Magee, Maddux, & Galinsky, 2006). In sum, across situations and individuals, the effects of power can be complex and diverse.

If the effects of power can vary so greatly across people and situations, gaining a more nuanced understanding of its effects is particularly important. One domain that deserves empirical attention is the influence of power on the processing of persuasive messages. Because powerful people control resources, they are often the target of persuasive appeals (e.g., an alumni donor being persuaded to give money to his alma mater). The manner in which powerful people evaluate those appeals affects their decisions, which can ultimately have profound consequences for the entire group.

## **1.2 Social Influence Heuristics**

People can process persuasive messages using different mental strategies, often termed heuristic versus systematic strategies (Chaiken & Trope, 1999). A systematic strategy relies on the careful consideration of content and the logical evaluation of arguments. A heuristic strategy relies on

cues that are largely irrelevant to the strength of the arguments. For example, all else being equal, attractive speakers are more persuasive than unattractive speakers and adding the letters “Ph.D.” to a message increases its persuasiveness when the recipient is processing heuristically (Chaiken & Trope, 1999). When people are pressed for time or lack motivation to form an accurate judgment, they are particularly likely to use heuristic processing because heuristics can save time and energy (Finucane, Alhakami, Slovic, & Johnson, 2000). However, some individuals are less susceptible to heuristic cues and are more likely to rely on systematic cognitive strategies (Cacioppo & Petty, 1984). The tendency to display systematic thinking reflects a person’s high “need for cognition” (Rosen, 1963). Individuals high in need for cognition are less persuaded by arguments utilizing heuristic cues than individuals low in need for cognition (Cacioppo, Petty, & Morris, 1983).

The current research focuses on two commonly used social influence techniques that rely on heuristic cues: social proof and scarcity. The social proof appeal is based on making a product or decision seem popular (Cialdini, 1993). When deciding how to act, people often look to their social group for normative information and subsequently conform to group norms (Tesser, Campbell, & Mickler, 1983). One particularly striking example is Asch’s (1951) classic line study. Participants distorted their responses about the relative length of lines to match the group consensus, even when they privately knew the correct answer. Conforming to group norms appeared to be a strategy for increasing group acceptance. Research in persuasion and marketing has found that the group does not even need to be present for the social influence to be felt. Messages that merely contain cues of popularity (“The best-selling car in America”) increase behavioral conformity (Wooten & Reed, 1998). The tendency to conform to one’s group is shared by many species, in part because group cohesion is often a source of protection against threats (Alcock, 1998). Therefore, under conditions of threat and uncertainty, the tendency to follow group norms is particularly strong (Griskevicius, Goldstein, Mortensen, Cialdini, & Kenrick, 2006; Latané & Darley, 1968).

The scarcity heuristic involves the fact that people view rare, exclusive, or difficult-to-obtain products as more valuable (Cialdini, 1993). Scarcity cues (“Limited-time offer”, “Special edition”) increase perceived value for two main reasons. First, difficult-to-obtain items or opportunities often are objectively more valuable or rewarding. Over time, people form an

automatic association between scarcity and value (Lynn, 1989). Second, the difficulty of pursuing a scarce opportunity can be perceived as a loss of behavioral freedom. When people feel that their behavior is being constrained, they often display reactance, an attempt to act counter to their situational constraints (Brehm, 1966). Therefore, when perceived scarcity interferes with their behavior, people react by valuing the item even more than they would otherwise (Cialdini, 1993).

Social proof and scarcity both reflect appeals that are effective in persuasion, yet they rely on different mechanisms and decision heuristics. Cues of scarcity influence the perceived value of items. Thus, a scarcity appeal may be particularly effective for people who are attuned to rewarding stimuli in the environment. Power evokes attunement to rewards, so powerful people may be especially persuaded by scarcity appeals. In contrast, social proof appeals are based on conformity and seeking group acceptance. Social proof appeals may be effective among people – such as those lacking power – who are motivated to seek acceptance and be part of their group, especially when circumstances signal the presence of threat.

### **1.3 The Current Research**

The current research tests the overall hypothesis that power affects people's reliance on the social proof and scarcity heuristics. A review of the literature supports two different predictions about the effects of power on the use of heuristics in evaluating persuasive messages. One possible hypothesis is that experiencing a state of power could lead to greater susceptibility to all heuristic appeals (Keltner et al., 2003). This hypothesis stems from the basic tenets of the power-approach theory. Power is associated with relative access to rewards and immunity from punishment and it generally reduces the effort that people devote to mental tasks. In order to efficiently exploit rewards in the environment, powerful individuals may increase reliance on all time-saving heuristics (e.g. Weick & Guinote, 2008; Menzel & Maner, unpublished data). This reasoning leads to the prediction that power will increase the extent to which people use both the social proof and scarcity heuristics. Conversely, lacking power is associated with susceptibility to threats. Inaccurate decisions may be more likely to be punished when one lacks power than when one has power. Thus people who lack power might be expected to evaluate the messages more systematically, thus decreasing their reliance on both heuristics.

Alternatively, an analysis based on the BAS and BIS related effects of high and low power offers a different prediction. The relatively accommodating environment associated with high power engages the BAS system (Keltner et al., 2003), which increases attention to rewards in one's environment (Carver & White, 1994). Cues of scarcity ("Limited time offer" "Unique") may be particularly noticeable while BAS engagement is high because when items are rare, unique, or exclusive they are perceived as more valuable than when they are common (Lynn, 1989; Cialdini, 1993). By attuning individuals to rewarding stimuli in their environment, BAS engagement may increase the salience and cognitive impact of scarcity cues. Therefore, I hypothesize that scarcity, a heuristic cue that indicates value, will be particularly effective at persuading powerful people, who are generally attuned to rewards and value in their environment.

Conversely, social proof may be an effective technique for persuading low power individuals, rather than high power individuals. There are two main reasons for this prediction. Lacking power engages the BIS, which is associated with increased attention to threats and punishments (Carver & White, 1994). Under threatening conditions, conforming to and being accepted by one's group is especially important because group membership can be a protective buffer against threats. Indeed, previous research has shown that the perception of a threatening environment tends to increase the effectiveness of a social proof appeal (Griskevicius et al., 2009). Thus, powerless people may respond to social proof because they are especially attuned to the presence of threat.

Social proof appeals may also be more influential for low power individuals than high power individuals because lacking power is associated with increased attention to the behavior of others (DePaulo & Friedman, 1998). Social proof appeals highlight that one's social group is acting in a particular way, thus establishing a descriptive norm that powerless individuals are more likely to notice than high power individuals (Chance, 1967). Low-power people also lack independent access to resources and thus may rely on their social connections to a greater degree than powerful individuals (Keltner et al., 2003). One way to increase acceptance from one's group is by conforming to group norms (Jones, 1965). Indeed, research has shown that people with low power are more likely than those with high power to follow behavioral norms (Ellyson & Dovidio, 1985). In sum, feelings of low power may lead individuals to pay high levels of

attention to the behavior of others, feel reliant on the acceptance of one's group, and ultimately follow social norms. Thus, I expect that social proof, a heuristic cue that indicates social norms, will be particularly effective at persuading people who lack social power.

Two experiments were designed to test the effect of social proof and scarcity appeals on people primed with high or low power. In Study 1, participants wrote an essay prompt to prime feelings of high or low power and then evaluated messages that contained cues of social proof or scarcity. The design allows us to test if high power participants rely on both heuristics more than low power participants or if the effect depends on the specific nature of the heuristic appeals.

In Study 2, the effect of power on persuasion was tested by examining a behavioral dependent variable. Participants primed with high or low power were given the option to choose a poster as a prize after the study ostensibly is over. The researcher casually remarked that one of the posters is either scarce or popular, a manipulation of the scarcity or social proof heuristics. Study 2 also tested if the effects of high power or low power were mediated by engagement of the BIS or BAS systems or other potential mechanisms.

## CHAPTER 2

### STUDY 1

#### 2.1 Method

##### 2.1.1 Participants

Participants were 56 undergraduate students (41 female, 15 male) enrolled in introductory psychology classes. Participants received partial credit toward a research requirement in exchange for their participation.

##### 2.1.2 Design and Procedure

There is evidence that need for cognition can affect reliance on heuristics (Cacioppo, Petty, & Morris, 1983). Therefore, I assessed individual differences in need for cognition for use as a covariate. Participants first filled out the Need for Cognition Scale (NCS), a well-validated self-report scale measuring how often participants engage in effortful cognition (Rosen, 1963). The questionnaire included 18 items on a nine-point scale ( $M = 5.69$ ,  $SD = 1.38$ , Cronbach's  $\alpha = .92$ ), such as "I find satisfaction in deliberating hard and for long hours" and "I only think as hard as I have to" (reverse scored).

Participants were then randomly assigned to condition in a 2 (Power: High vs. Low) X 2 (Persuasive Appeal: Social Proof vs. Scarcity) between-subjects factorial design. Participants were primed with power using an autobiographical essay adapted from previous research (Galinsky et al., 2003). Participants wrote an essay about one of two randomly assigned scenarios. In the high power condition, participants wrote about a time they had power over another individual or group. In the low power condition, participants wrote about a time they were subordinate to another individual. Vividly remembering a past behavior elicits many of the same emotions and cognitions as the original experience. This essay manipulation has been shown to reliably prime feelings of power and affect behavior in ways that are similar to structural manipulations of power (i.e., giving the participants power over a partner in the lab; e.g., Guinote, Willis, & Martellotta, 2010; Lammers & Stapel, 2009; Maner et al., 2012).

After the priming task, participants were randomly shown one of two ostensible reviews of a fictitious restaurant. The review in the social proof condition included cues of how popular the restaurant was. The review in the scarcity condition included cues about how exclusive and unique the restaurant was. The essays were adapted from previous research studying the social proof and scarcity heuristics (Griskevicius et al., 2009).

#### Scarcity Review:

##### *The Bergamot Café: A Unique Place Off The Beaten Path*

*Fresh is the name of the game at this café that could easily go head-to-head with the best restaurants in any city. This one-of-a-kind place that is yet to be discovered by others serves a variety of delectable dishes. The menu features the season's best and changes monthly. Think tender lamb, fresh wild salmon, appetizers that melt in your mouth, a scrumptious assortment of organic produce and salads, as well as heavenly pastries and desserts. If you're looking for a great dining experience different from any other, look no further than the Bergamot Café.*

#### Social Proof Review:

##### *The Bergamot Café: Popular and Delicious*

*Fresh is the name of the game at this café that could easily go head-to-head with the best restaurants in any city. Many people gather here to enjoy the variety of delectable dishes the restaurant offers. The menu features the season's best and changes monthly. Think tender lamb, fresh wild salmon, appetizers that melt in your mouth, a scrumptious assortment of organic produce and salads, as well as heavenly pastries and desserts. If you want to know where everyone goes for a great dining experience, come join them at the Bergamot Café.*

After reading the reviews, participants answered six questions assessing their impressions of the restaurant. “What are your feelings toward the restaurant?” (1 = “Very Bad” 9= “Very Good”); “What are your feelings toward the restaurant?” (1 = “Very Unfavorable” 9 = “Very Favorable”); “What are your feelings toward the restaurant?” (1 = “Very Negative” 9 = “Very Positive”); “To what extent would you like to find out more about the restaurant?” (1 = “Not at all” 9 = “Very much”). “How likely are you to consider going to the restaurant?” (1 = “Not at all likely” 9 = “Very likely”). “If the Bergamot Cafe came to Tallahassee, how likely is it you would actually go to the restaurant?” (1 = “Not at all likely” 9 = “Very likely”). Responses to these



six items were averaged to form a composite index of persuasion ( $M = 6.74$ ,  $SD = 1.77$ , Cronbach's  $\alpha = .95$ ). This index was the primary dependent variable.

## 2.2 Results

The main effects and interaction between power priming condition and persuasive appeal condition were tested using an Analysis of Covariance (ANCOVA) that included need for cognition as a covariate. Individual differences in need for cognition affected persuasion ( $F(1, 51) = 4.24$ ,  $p = .05$ ,  $\eta^2 = .08$ ), such that participants high in need for cognition showed less persuasion than participants low in need for cognition ( $\beta = -.28$ ,  $p = .05$ ,  $sr = -.27$ ). No main effects of power priming condition ( $F = .186$ ,  $p = .67$ ) or appeal condition ( $F = .003$ ,  $p = .96$ ) were observed. However, persuasion was affected by the interaction between power and appeal condition ( $F(1, 51) = 4.44$ ,  $p = .04$ ,  $\eta^2 = .08$ ). Probing this interaction further, I found that participants primed with high power were descriptively (though not significantly) more persuaded by the scarcity appeal ( $M = 7.32$ ) than the social proof appeal ( $M = 6.42$ ,  $F(1, 51) = 2.40$ ,  $p = .13$ ,  $\eta^2 = .05$ ). The opposite pattern was found for participants primed with low power (social proof  $M = 7.12$ , scarcity  $M = 6.27$ ,  $F(1, 51) = 2.08$ ,  $p = .15$ ,  $\eta^2 = .04$ ). See Figure 1.

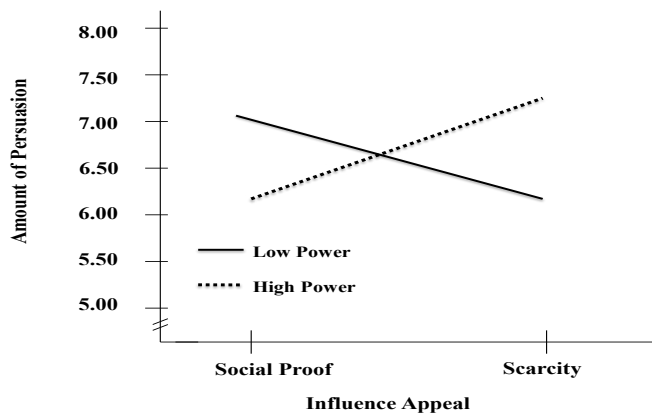


Figure 1: The interaction between power prime and type of influence appeal on restaurant judgments. High power participants were more persuaded by scarcity appeals than social proof appeals. Low power participants were more persuaded by social proof appeals than scarcity appeals.

### 2.3 Discussion

Results from study 1 suggest that the effectiveness of social proof and scarcity appeals depended on the power prime. Trends suggest that high power participants were susceptible to the scarcity appeal, whereas low power participants were susceptible to the social proof appeal. Thus the effect of power on the use of persuasion heuristics depended on the specific content of the heuristic. The results for the low power condition are particularly noteworthy. Low power is hypothesized to be linked with more deliberate cognitive strategies (Keltner et al., 2003), yet we found evidence of heuristic processing when the heuristic cue corresponds to the psychological state of powerlessness.

Study 1 offers intriguing evidence that high and low power people may be susceptible to different types of heuristic appeals. However, the limitations of study 1 offer important opportunities for further investigation. First, although the theoretical framework implies that people's decisions and behavior would be affected by the interaction of power and persuasive appeal, Study 1 did not directly measure behavior. Participants merely indicated their feelings toward the restaurant on a questionnaire; they did not actually choose a product or visit a restaurant. Additionally, the scarcity appeal focused on cues of exclusivity and uniqueness. These concepts are closely related to scarcity, but not synonymous. A more direct manipulation of scarcity would strengthen the research. Finally, the mechanisms underlying the different responses of high and low power individuals were not directly tested. Study 2 addresses these concerns.

## CHAPTER 3

### STUDY 2

Although Study 1 provided evidence consistent with the idea that power affects susceptibility to different persuasive appeals, it fell short of identifying the psychological processes responsible for that effect. The mechanism underlying the effect needs to be examined directly in order to better understand why and how power might affect decision-making. In Study 1, high power was theorized to increase BAS engagement, which increased attention to reward, and ultimately made the scarcity appeal more effective because scarcity is a heuristic cue of value. Conversely, low power was theorized to increase BIS engagement, leading to increased attention and adherence to the group norms established by the social proof appeal. Unfortunately, Study 1 did not include a measure of BIS/BAS engagement, making it difficult to determine if it was the mechanism by which power affects persuasion. Study 2 includes a measure of relative BIS/BAS engagement between the power prime and evaluation of the persuasive messages to test for mediation.

A simple method of determining relative levels of BIS/BAS engagement based on their neuroanatomical underpinnings has been developed. BAS engagement is associated with increased activity and production of dopamine in the left hemisphere of the brain, while BIS engagement is linked with increased activity and production of norepinephrine in the right hemisphere (Davidson, 1992). This asymmetry in hemispheric activity changes the allocation of attention to the environment (Kinsbourne, 1993). Specifically, the visual field on the same side as the more active hemisphere suffers from attentional neglect. People with relatively active right hemispheres (compared to those with more hemispheric symmetry) pay less attention to stimuli in their right visual field (Nicholls, Loftus, Mayer, & Mattingley, 2007). This bias in attention can be measured using a line bisection task. People are shown a series of horizontal lines and asked to mark the mid-points. Comparing line bisection errors with EEG readings, researchers have determined that errors to the right of the objective midpoint are indicative of left-hemisphere activation and BAS engagement, while errors to the left are indicative of right-hemisphere activation and BIS engagement (Nash, McGregor, & Inzlicht, 2010).

The line bisection measure of BIS/BAS engagement has already been used within the power literature. People primed with low power tend to make leftward errors and show

inattention to obstacles on their right, both indicators of BIS engagement (Wilkinson, Guinote, Weich, Molinari, & Graham, 2010). The current research tests the hypothesis that BIS/BAS engagement, as measured with the line bisection task, will mediate effects of power on persuasion. Specifically, relative BAS engagement from the high power prime is expected to increase susceptibility to scarcity appeals, whereas relative BIS engagement from the low power prime is expected to increase susceptibility to social proof appeals.

The effect of power on BIS/BAS stems directly from Keltner's power-approach theory, but the relationship between power and susceptibility to persuasive appeals may also be mediated by affiliative motivation. Some evidence suggests that power elicits a sense of independence and reduces people's interest in affiliating with others (Conlon, Maner, & Case, under review). Consistent with this hypothesis, previous research has shown that power causes individuals to prefer socially distant interactions and decreases the motivation to cooperate with group members (Lammers, Galinsky, Gordjin, & Otten, 2012). In contrast, the reliance on others associated with low power may increase the need to belong.

Individuals who are highly motivated to affiliate may pay more attention to group norms and conform because following group norms is a successful affiliation strategy (Asch, 1951; Turner, 1991). Thus, an individual with a high level of affiliative motivation may be particularly susceptible to social proof appeals because social proof appeals highlight the descriptive norms of one's group. In support of this hypothesis, individuals who are highly interdependent with other group members tend to be particularly susceptible to social proof appeals (Cialdini, Wosinska, Barrett, Butner, & Gornik-Durose, 1999). Therefore, the tendency shown in Study 1 for low power individuals to respond to social proof appeals more strongly than scarcity appeals may be mediated by the individual's affiliative motivation, a possibility I test in Study 2 using a state measure of affiliative motivation.

The reduction in affiliative motivation caused by the power prime may be particularly pronounced for individuals high in dominance. Individuals high in dominance desire control over their social environments. They seek out positions of power and want other group members to listen and defer to them (Cassidy & Lynn, 1989). Attaining power may signal to dominant individuals that their social environment is safe and rewarding, encouraging pursuit of egocentric goals and a reduction in affiliation motivation. Conversely, power is often perceived as a threat

and burden by individuals low in dominance, often causing increases in anxiety and its hormonal correlates (e.g., cortisol; Schultheiss, 2007; Wirth, Welsh, & Schultheiss, 2006). Previous research has shown that experiencing anxiety can increase affiliative desire because social support acts as a protective buffer (Cohen & Willis, 1985). Thus, I predict that power will lead to a larger reduction in affiliation motivation for participants high in dominance than participants low in dominance.

Similarly, dominance may moderate the BAS-related effects of the high power prime. BAS is normally engaged when the environment is perceived to have ample rewards and few threats. For dominant individuals, the acquisition of power is a positive state, indicating the attainment of a strongly desired position. In contrast, individuals low in dominance may be more likely to perceive power as a burden or responsibility (Cassidy & Lynn, 1989). Low-dominance individuals display anxiety after gaining power (Schultheiss, 2007), possibly reflecting their concerns about being responsible for group members. Power can also place individuals in the social spotlight and individuals low in dominance may not desire the amount of attention linked with high power positions. Gaining power may actually be perceived as a threat for individuals low in dominance, leading to BIS engagement. Thus, I predict that the participant's dominance will moderate the BIS/BAS response to the power prime, such that individuals high in dominance will respond to power with greater BAS engagement.

In sum, Study 2 tests several hypotheses related to power, affiliative motivation, BIS/BAS engagement, and susceptibility to specific persuasive appeals. First, I predict an interaction between the power prime and type of persuasive appeal. High power participants (compared to low power) are expected to prefer the scarce poster whereas low power participants (compared to high power) are expected to prefer the popular poster. This pattern would replicate that observed in Study 1. Second, participants primed with high power are predicted to have greater BAS activation (rightward line bisection errors) than low power participants. Third, participants primed with high power are predicted to have a lower motivation to affiliate than low power participants. Both of these effects are expected to be relatively more pronounced among highly dominant participants than those who lack dominance.

Fourth, the effectiveness of the persuasive appeals is expected to depend on the participant's affiliative motivation. Participants with a strong affiliative motivation are expected

to be more susceptible to the social proof appeal than participants with a relatively weak affiliative motivation. Finally, relative levels of BIS/BAS engagement are expected to affect susceptibility to the persuasive appeals. High BAS engagement is expected to increase susceptibility to the scarcity appeal, whereas high BIS engagement is expected to increase susceptibility to the social proof appeal.

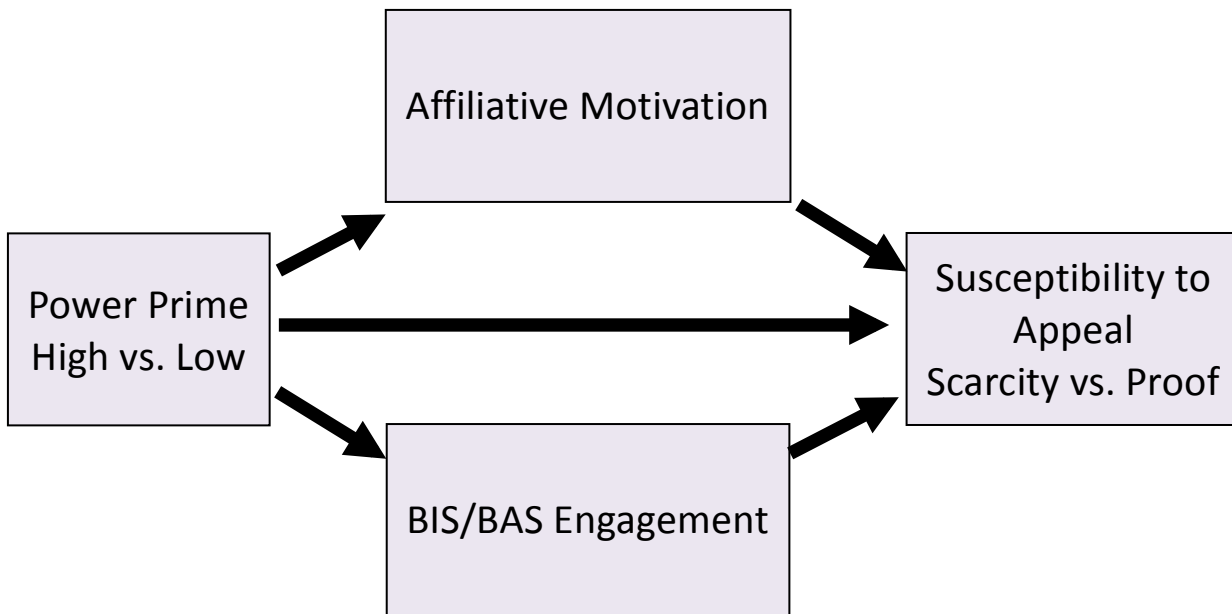


Figure 2: The hypothesized relationships between power priming, affiliative motivation, BIS/BAS engagement and susceptibility to the scarcity or social proof persuasive appeals. High power is hypothesized to decrease affiliative motivation, increase BAS engagement, and increase susceptibility to the scarcity appeal. Low power is hypothesized to increase affiliative motivation, increase BIS engagement, and increase susceptibility to the social proof appeal.

### 3.1 Method

#### 3.1.1 Participants

Participants were 160 undergraduate students (113 female, 47 male) enrolled in introductory psychology classes. Nine participants were excluded from analysis: four for failing to properly complete the line bisection task; three for failing to choose a poster; two due to experimental error. Participants received partial credit toward a research requirement in exchange for their participation.

### 3.1.2 Design and Procedure

After providing informed consent and filling out the need for cognition questionnaire, participants completed a measure of dominance (the dominance subscale of the Achievement Motivation Scale, Cassidy & Lynn, 1989). Participants indicated their agreement (1 = strongly disagree; 7 = strongly agree) to seven items such as: “I think I would enjoy having authority over other people” and “I like to give orders and get things going.” I averaged the responses to form a composite measure of dominance (Cronbach’s  $a = .84$ ,  $M = 4.97$ ,  $SD = .85$ ). After completing the dominance questionnaire, participants were primed with power using the same autobiographical essay used in Study 1.

After the priming task, participants performed a task designed to measure relative BIS/BAS engagement: the line bisection task (Nash, McGregor, & Inzlicht, 2010). Participants completed the line bisection task by marking the perceived center point of 6 staggered horizontal lines, each approximately 23 centimeters long. The distance from each line’s true midpoint was measured in millimeters and leftward errors were scored as negative values. A mean line bisection score was calculated by averaging the scores across the 6 lines. Positive values indicate relative BAS engagement. After completing the line bisection task, participants filled out the ten-item Need to Belong Scale (Leary et al., 2008). The NTB has participants indicate their agreement (1 = strongly disagree; 5 = strongly agree) to items such as: “I try hard not to do things that will make other people avoid or reject me” and “I need to feel there are other people I can turn to in times of need.” After reverse-scoring the correct items, I averaged the responses to form a composite measure of affiliative motivation (Cronbach’s  $a = .72$ ,  $M = 3.55$ ,  $SD = .79$ ).

With the completion of the Need to Belong scale, participants thought their participation in the study was complete. The experimenter returned to the room and said “As a gift for participating in our experiment, you may take home a poster.” The participant was given the option to choose between two posters, a depiction of Van Gogh’s “Starry Night” or Hokusai’s “Great Wave off Kanagawa”. Using a 5-point rating scale (1 = not desirable at all, 5 = very desirable), the posters were pre-tested to be similarly desirable ( $M_{Wave} = 3.87$ ,  $M_{Night} = 4.17$ ,  $F(1, 46) = 1.11$ ,  $p = .18$ ). In the scarcity appeal condition, the experimenter indicated the Great Wave poster and casually said, “The manufacturer only made a limited number of these, so there aren’t very many left.” In the social proof condition, the experimenter indicated the Great Wave poster and casually said, “It seems like almost all of the participants before you have been choosing this

poster.” The participant indicated their preference between the posters on a seven point scale ranging from: 1 = definitely prefer Starry Night; 4 = no preference; 7 = definitely prefer Great Wave. The participant then chose a poster. The preference and choice of poster serve as the primary dependent variables.

### 3.2 Results

Preliminary analyses show that participants somewhat preferred the Starry Night poster over the Great Wave poster. 84 participants chose Starry Night and 67 participants chose the Great Wave. Examining the preference dependent variable (1 = definitely prefer Starry Night; 7 = definitely prefer Great Wave) shows a similar pattern ( $M = 3.81$ ,  $SD = 1.99$ ).

The potential moderator of participant dominance and the potential mediators of affiliative motivation and BIS/BAS engagement are continuous variables, so regression analyses were used. First, to replicate Study 1, I tested the hypothesis that poster preference would depend on an interaction between power condition and appeal type. Power condition, persuasive appeal, and the centered interaction term were entered as predictors with the participant’s poster preference as the dependent variable. The predicted interaction was not significant ( $\beta = -.08$ ,  $t(149) = 1.03$ ,  $p = .31$ ). The main result from Study 1 was not replicated (See Figure 3). Analyses also showed an effect of appeal type that approached significance ( $\beta = .159$ ,  $t(149) = 1.93$ ,  $p = .06$ ). The trend indicates that social proof appeal tended to be somewhat more persuasive than the scarcity appeal. The power prime did not affect which poster the participants preferred ( $\beta = -.07$ ,  $t(149) = .83$ ,  $p = .41$ ). Similar results were obtained when using logistic regression with actual poster choice as the dependent variable. No significant effects were found (interaction  $B = .65$ ,  $\text{Wald } \chi^2(149) = 1.00$ ,  $p = .32$ ; appeal,  $B = .65$ ,  $\text{Wald } \chi^2(149) = 3.63$ ,  $p = .06$ ; power prime,  $B = .27$ ,  $\text{Wald } \chi^2(149) = .63$ ,  $p = .43$ ).



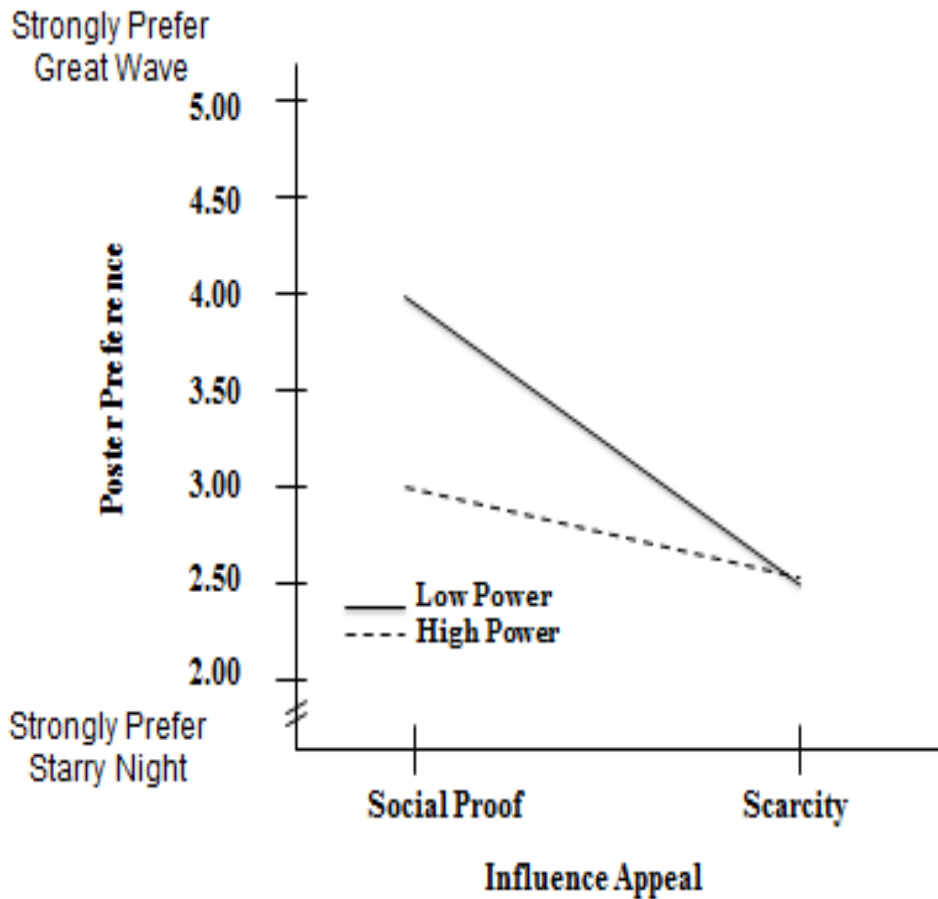


Figure 3: The interaction between power prime and type of influence appeal on poster preference. High and low power participants did not significantly differ in their responses to the two influence appeals.

The effect of power may have depended on participant dominance, so next I included participant dominance as a moderator. Power prime, appeal type, participant dominance, and all the centered interaction terms were entered as predictors. However, there was no evidence of moderation by dominance. The three-way interaction between power prime, appeal type, and dominance did not approach significance ( $\beta = -.04, t(146) = -.40, p = .69$ ). Although the social proof appeal was more persuasive than the scarcity appeal, ( $\beta = .17, t(145) = 1.99, p = .05$ ) no

other main effects or interactions approached significance (all  $ps > .22$ ). A logistic regression revealed similar results (appeal prime  $B = .70$ , Wald  $\chi^2(145) = 3.93$ ,  $p = .05$ ; all other  $ps > .24$ )

Because the main interaction between power prime and appeal type was not significant, a typical mediation analysis cannot be performed. However, the research design still allows tests of the effect of power on BIS/BAS and affiliative motivation. To test the effect of power on BIS/BAS engagement, I regressed the line bisection score on the power prime condition. The power prime had no effect on the participants' line bisection scores ( $\beta = -.05$ ,  $t(149) = -.62$ ,  $p = .53$ ). To test if dominance moderated the effect of power on line bisection scores, a regression was run with power prime, dominance score, and the centered interaction term as predictors of line bisection scores. No evidence of moderation was found ( $\beta = -.06$ ,  $t(149) = -.77$ ,  $p = .44$ ). Study 2 did not support the hypothesis that the power prime would affect BIS/BAS engagement.

In order to test the effect of the power prime on affiliative motivation, I regressed NTB scores on the power prime. No main effect was present ( $\beta = .02$ ,  $t(149) = .284$ ,  $p = .78$ ), so I tested if the effect of the power prime was moderated by participant dominance. A regression was run with power prime, participant dominance, and the centered interaction term as predictors and NTB scores as the dependent variable. There was no main effect of power prime or dominance on participants' affiliation motivation (power prime,  $\beta = .03$ ,  $t(149) = .31$ ,  $p = .76$ ; dominance,  $\beta = -.03$ ,  $t(149) = -.31$ ,  $p = .76$ ). However, a significant interaction between power prime and dominance emerged ( $\beta = -.18$ ,  $t(149) = -2.25$ ,  $p = .03$ ). To interpret this interaction, I tested the simple effect of dominance within the high and low power prime conditions. For participants primed with high power, higher levels of dominance predicted marginally lower affiliative motivation ( $\beta = -.21$ ,  $t(149) = -1.70$ ,  $p = .09$ ). For participants primed with low power, no significant effect emerged, although the trend was in the opposite direction ( $\beta = .16$ ,  $t(149) = 1.47$ ,  $p = .14$ ). Another way to probe this interaction is by testing the effect of the power prime for participants high versus low in dominance (1 SD above or below the mean). For participants high in dominance, a non-significant trend suggested that the high power prime may have reduced affiliative motivation compared to the low power prime ( $\beta = -.25$ ,  $t(149) = -1.39$ ,  $p = .17$ ). For participants low in dominance, a marginally significant trend suggested that the high power prime (relative to the low power prime) may have increased affiliative motivation ( $\beta = .33$ ,  $t(149) = 1.81$ ,  $p = .07$ ). See Figure 4.

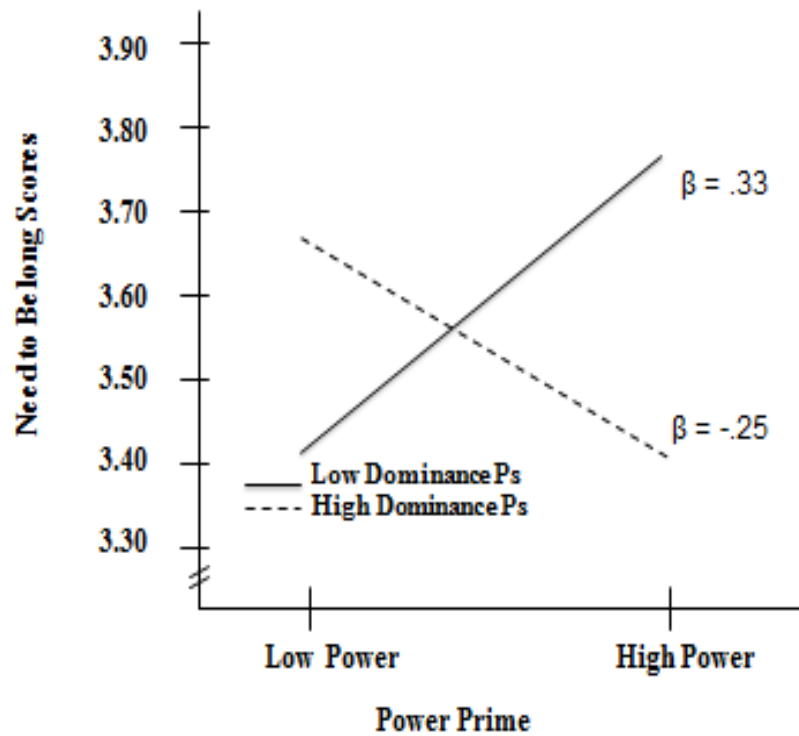


Figure 4: The interaction between the power prime and participant dominance on affiliation motivation. High dominance participants showed less affiliative motivation after the high power prime than the low power prime. Participants low in dominance showed more affiliative motivation after the high power prime than the low power prime.

I also tested potential relationships between affiliative motivation (NTB scores) and BIS/BAS engagement and susceptibility to the two persuasive appeals. First, regression was used to test the effect of affiliative motivation on susceptibility to the different persuasive appeals. Participant NTB scores, persuasive appeal type, and the centered interaction term were entered as predictors; the participants' poster preference was the dependent variable. Affiliative motivation and appeal type did not predict poster preference (NTB,  $\beta = .06$ ,  $t(149) = .73$ ,  $p = .47$ ; Appeal,  $\beta = .15$ ,  $t(149) = 1.89$ ,  $p = .06$ ). Additionally, no effect of the interaction term was found ( $\beta = .12$ ,  $t(149) = 1.41$ ,  $p = .16$ ). The logistic regression with poster choice as the dependent variable showed a similar pattern (NTB,  $B = .20$ , Wald  $\chi^2(149) = .66$ ,  $p = .42$ ;

Appeal,  $B = .34$ , Wald  $\chi^2(145) = 3.52$ ,  $p = .06$ ; Interaction,  $B = .73$ , Wald  $\chi^2(145) = 2.09$ ,  $p = .15$ ). For both analyses, the direction of the non-significant trend was consistent with the hypothesis that participants high in affiliation motivation may be more susceptible to the social proof appeal, so I proceeded to test the simple effect of appeal type for participants high versus low in affiliative motivation (1 SD above or below the mean). Participants low in affiliative motivation did not show susceptibility to one appeal over the other ( $\beta = .03$ ,  $t(149) = .286$ ,  $p = .78$ ;  $B = .07$ , Wald  $\chi^2(149) = .02$ ,  $p = .89$ ). However, as predicted, participants high in affiliative motivation were persuaded by the social proof appeal more than the scarcity appeal ( $\beta = .275$ ,  $t(149) = 2.31$ ,  $p = .02$ ;  $B = 1.22$ , Wald  $\chi^2(149) = 5.11$ ,  $p = .02$ ). See Figure 5.

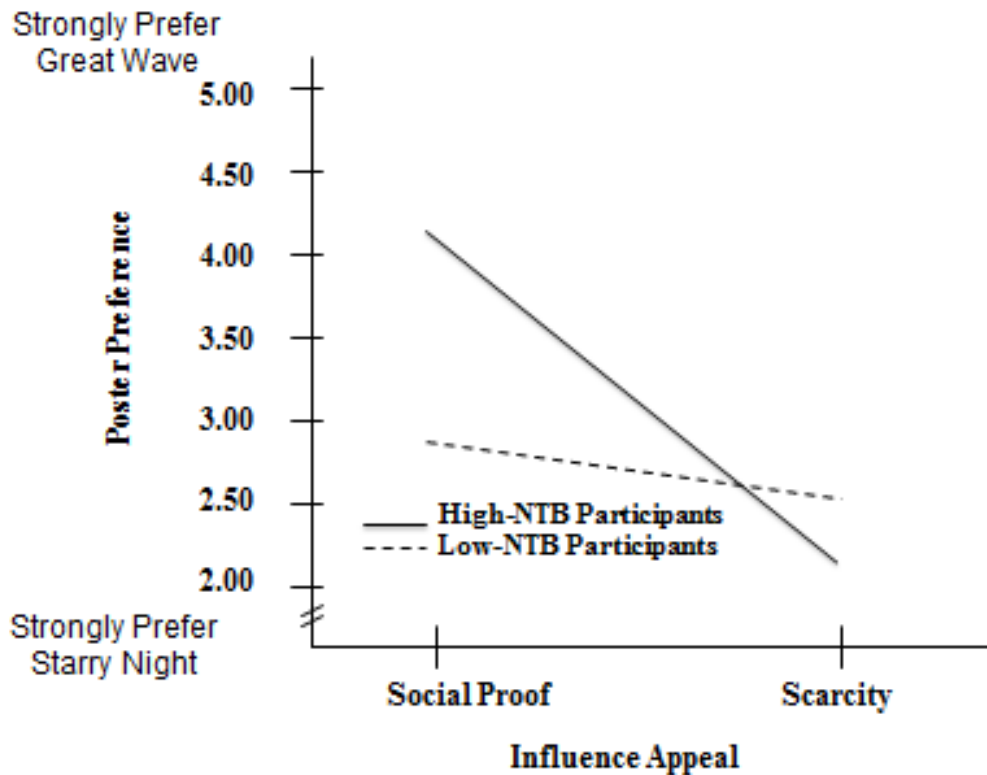


Figure 5: The interaction between affiliative motivation and appeal type on poster preference. Participants high in affiliative motivation were more persuaded by the social proof appeal than the scarcity appeal.

Lastly, the effect of BIS/BAS engagement on susceptibility to the different persuasive appeals was tested using multiple regression and logistic regression. Line bisection errors, persuasive appeal type, and the centered interaction term were entered into the model. The participant's line bisection scores had no main effect on poster preference ( $\beta = .01$ ,  $t(149) = 1.41$ ,  $p = .16$ ;  $B = .02$ , Wald  $\chi^2(149) = 1.89$ ,  $p = .17$ ). However, a significant interaction between line bisection errors and appeal type was found ( $\beta = .17$ ,  $t(149) = 2.07$ ,  $p = .04$ ;  $B = .06$ , Wald  $\chi^2(149) = 4.05$ ,  $p = .05$ ). To interpret this interaction, I tested the simple effect of appeal type for participants with BAS engagement (1 SD to the right of the midpoint) or BIS engagement (1 SD to the left of the midpoint). For participants with high BAS engagement, the persuasive appeals did not differ in effectiveness ( $\beta = .03$ ,  $t(149) = .32$ ,  $p = .75$ ;  $B = .10$ , Wald  $\chi^2(149) = .05$ ,  $p = .82$ ). For participants with high BIS engagement, the poster was preferred more when it was perceived to be popular than when it was perceived to be scarce ( $\beta = -.37$ ,  $t(149) = 2.94$ ,  $p < .01$ ;  $B = -1.59$ , Wald  $\chi^2(149) = 7.82$ ,  $p = .01$ ). These results indicate that relatively high BIS engagement was associated with greater susceptibility to social proof appeals. See Figure 6.

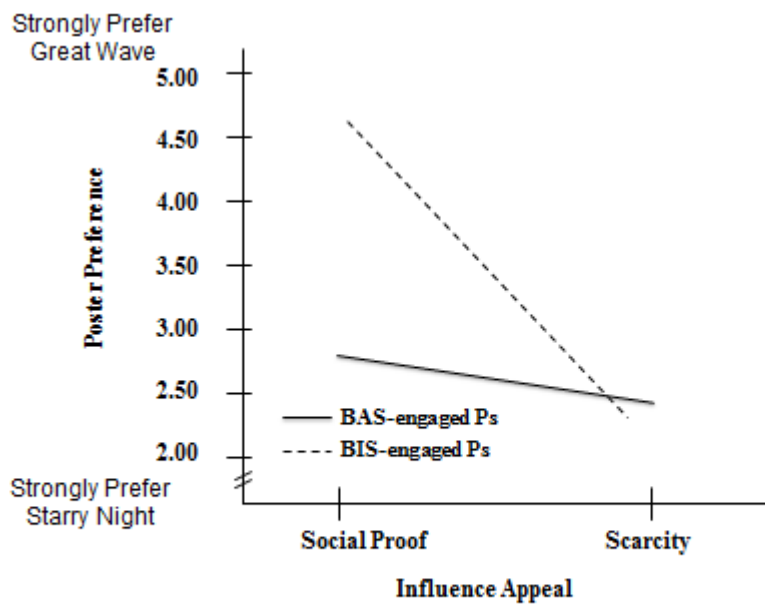


Figure 6: The interaction between BIS/BAS engagement and appeal type on poster preference. Participants high in BIS engagement were more persuaded by the social proof appeal than the scarcity appeal.

### 3.3 Discussion

The primary predicted interaction between power prime and persuasive appeal was not found. Study 2 was not able to replicate the finding from Study 1 that high power and low power primes, respectively increase susceptibility to scarcity and social proof primes. There are a few possible explanations for this failure to theoretically replicate Study 1. The selection of the posters used for the dependent variable may have been flawed. The posters were pre-tested to be of similar desirability ( $M_{\text{Wave}} = 3.87$ ,  $M_{\text{Night}} = 4.17$ ,  $F(1, 46) = 1.11$ ,  $p = .18$ ). However, one of the posters, *Starry Night*, depicted an arguably more famous and popular painting than *The Great Wave off Kanagawa*. Indeed, post-testing indicated that a separate group of 23 FSU undergraduates rated *Starry Night* as more “popular” than *The Great Wave* ( $M_{\text{Wave}} = 3.09$ ,  $M_{\text{Night}} = 4.91$ ,  $F(1, 22) = 42.17$ ,  $p < .01$ ). This pre-existing difference in perceived popularity may have confounded the social proof persuasive appeal. The effect of telling participants that the *Great Wave* has been popular with previous participants may have been minimal if the participants already believed *Starry Night* to be the more popular poster/painting. The selection of more obscure posters, still pre-tested for similar desirability, could resolve this problem.

One unexpected result from Study 2 was the greater effectiveness of the social proof appeal compared to the scarcity appeal. The wording of the scarcity appeal may explain this unexpected result. The experimenter described the poster in the scarcity condition by saying, “The manufacturer only made a limited number of these, so there aren’t very many left.” I chose this wording because I thought it represented the clearest depiction of scarcity. However, participants may have inferred the poster was less valuable from the plausibly negative wording. By using a different wording, such as “limited edition,” scarcity may have been evoked more effectively, and I would not have found the main effect of persuasive appeal type.

Additionally, Study 2 did not support the hypothesis that power primes would affect BIS/BAS engagement. This result was somewhat unexpected, because the method replicated a previous, successful study (Wilkinson et al., 2010). It is unlikely that insufficient power can explain this result; the current study included a greater number of participants (160 vs. 72). However, personality differences between the two samples may explain the failure to replicate. For example, neither study measured the participants’ trait levels of anxiety, which has been shown to buffer some of the cognitive and behavioral effects of power. In particular, the BAS-

related effects of power (attention to rewards, flirtatious and risky behavior) do not seem to occur for participants' high in anxiety (Maner, Gailliot, Menzel & Kunstman, 2012). These findings suggest that power may lead to BAS engagement (and rightward line bisection errors) only among participants low in trait anxiety. If the sample from Study 2 had a greater number of anxious individuals than the sample used in Wilkinson et al. (2010), the predicted effect of power on BAS activation may have been more difficult to detect. Future research may benefit by testing the moderating effect of participant anxiety (and other individual differences) on BAS engagement, potentially using the line bisection task, EEG, or other measures to assess BIS/BAS.

Some of Study 2's hypotheses were supported. The power prime interacted with participants' level of dominance to affect affiliation motivation. Dominant participants showed less desire to affiliate after being primed with power than did participants lower in dominance. This finding is consistent with previous research showing that powerful individuals prefer socially distant interactions and perceive themselves as separate from other group members (Lammers, Galinsky, Gordijn, & Otten, 2012; Lee & Tiedens, 2001; Magee & Smith, 2011). Power gives people independent access to resources, causing powerful individuals to prioritize affiliation to a lesser extent than low power individuals, who often must rely on other group members to pursue their goals (Conlon, Maner, & Case, under review). Moreover, these effects of power are likely to be especially strong among individuals high in dominance. For people high in dominance, gaining power is a reward in itself, which gives them the control over their own and other people's outcomes that they desire. Therefore, dominant individuals may be more likely to respond to power with reduced interest in and need for other people. People low in dominance are less interested in gaining power because it makes them nervous or uncomfortable. Consequently, they might not react to power with the same level of independence that dominant people do.

The predicted interaction between participants' affiliation motivation and the type of persuasive appeal was not found. However, by probing the simple effects I found partial support for the hypothesis. Individuals with a strong motivation to affiliate were more susceptible to the social proof appeal than the scarcity appeal. This finding may reflect an adaptive affiliative strategy because when the desire to affiliate is strong, conforming to group behavior is an

effective way to avoid ostracism and gain acceptance (Asch, 1951; Turner, 1991). Individuals strongly motivated to affiliate may have been more susceptible to social proof because they paid more attention to the social norms delineated in the appeal or because they felt stronger social pressure to conform to popular behavior. Future research could investigate the relative contributions of these processes on susceptibility to persuasion.

Lastly, BIS/BAS engagement predicted poster preference. Participants who made leftward line bisection errors, indicative of BIS engagement, were more likely to prefer the popular poster than participants with relative BAS engagement. This finding supports the hypothesis that the effectiveness of social influence appeals may depend on the relative engagement of the behavioral activation and behavioral inhibition systems. When an organism is primed to notice and respond to threats, reflected in BIS engagement, the behavior of other individuals has greater influence. A similar phenomenon occurs in many species, such that threats lead to behavioral conformity (Alcock, 1998).



## **CHAPTER 4**

### **GENERAL DISCUSSION**

Across two studies, the hypothesis that power would affect susceptibility to persuasive appeals received mixed support. Study 1 showed the predicted interaction between power prime and type of persuasive appeal, with high power individuals being more susceptible to scarcity appeals and low power individuals being more susceptible to social proof appeals. Study 2 did not replicate this main finding, but did find evidence for how power reduces affiliative motivation for dominant individuals. In addition, there was some evidence that the level of BIS/BAS engagement and affiliative motivation were associated with the participants' responses to the persuasive appeals. In particular, relatively high BIS engagement, as well as high levels of affiliation motivation, were both associated with susceptibility to social proof appeals.

The current studies extend research investigating the factors that cause influence appeals to work or backfire (Cialdini, 2003; Griskevicius et al., 2006; Petrova & Cialdini, 2005). A number of factors have been shown to affect the evaluation of persuasive appeals: personality traits such as intelligence and need for cognition and temporary states of distraction and depletion (Cacioppo, Petty, & Morris, 1983; Petty, Wells, & Brock, 1976; Rholes & Wood, 1994; Wheeler, Brinol, & Hermann, 2007). Just as previous research (Griskevicius et al., 2009) has shown that the evocation of emotional states like fear and sexual desire can alter the effectiveness of persuasive appeals, the current research provides some evidence to suggest that the experience of high or low power can have important consequences for how people respond to persuasion.

The current research tests hypotheses derived from the power-approach theory (Keltner et al., 2003). The results highlight the importance of empirically testing the hypothesized effects of power on cognition and behavior. A simplistic reading of the power-approach theory might predict that high power individuals will be more susceptible to all persuasive appeals because of their tendency to rely on less demanding cognitive strategies (Weick & Guinote, 2008). However, by critically examining the BIS/BAS systems and how they relate to the specific content of persuasive appeals, the theory tested in the current research paints a more nuanced picture of the relationship between power and persuasion. The effectiveness of persuasive

appeals on powerful and powerless individuals may depend on the specific content of the appeal. Future research would benefit from testing further the possibility that individuals who lack power sometimes may be more susceptible – not less – to heuristic appeals than high power individuals, particularly when the appeals match the psychological state of powerlessness.

#### **4.1 Limitations of the Current Research**

Power was manipulated in this study through an essay prime. Although this is a common manipulation in the field (Galinsky et al., 2003; Weick & Guinote, 2007), experiencing power through a retrospective essay is not necessarily the same as experiencing power in the current situation. To increase the ecological validity of this work, future research would benefit from examining more closely the responses to persuasive attempts of individuals actually experiencing power over others. Moreover, in addition to laboratory manipulations of power, research would benefit from directly examining the cognitive consequences of power within extant social hierarchies.

The samples used in both studies were limited to the participant pool of Florida State University undergraduates enrolled in psychology classes. The sample was limited in both educational background and age ( $M = 19.54$ , ranging from 18 – 36). Thus, participants may have had limited experience in powerful positions, which could have reduced the effectiveness of the autobiographical power primes. Future research would benefit from examining the effect of power primes on more diverse samples.

Studies 1 and 2 may also have been limited by the narrow range of judgments and choices that the participants were asked to make. In Study 1, participants read about a fictitious restaurant and then indicated their feelings toward it. In Study 2, participants indicated their preference between two posters and subsequently chose one. The participants may have considered these judgments unimportant and inconsequential. Previous research studying persuasion has shown that the perceived importance and personal relevance of an argument can affect the motivation to consider and respond to persuasive appeals (Chaiken & Trope, 1999). When high power individuals consider a task unimportant they tend to view it with disdain, leading to reduced cognitive effort and possibly increased susceptibility to heuristic appeals

(DeWall et al., 2011). Future research could manipulate the importance and personal relevance of the persuasive appeal to see if those factors moderate participants' responses.

## **4.2 Implications and Extensions**

Study 2 contained a measure of BIS/BAS engagement, the line bisection task, which was imported from research in neuroscience and cognitive science (Nash, McGregor, & Inzlicht, 2010). Participants' errors in locating a line's midpoint predicted which persuasive appeal would be more effective. Specifically, participants with high BIS engagement were susceptible to the social proof appeal. Extending the line bisection task to a computer could produce potential applications in a variety of contexts such as health psychology and marketing. Merely by having a patient or customer indicate their perception of the midpoints of lines, marketers or health intervention specialists could target the type of persuasive appeal that is most likely to be effective. For example, if a patient makes a leftward error, indicating BIS engagement and susceptibility to social proof concerns, they could be shown a message highlighting social norms (i.e., a social proof appeal) associated with condom use, flossing, or other health behaviors.

The two studies presented in this dissertation provided a test of how high and low power states affect susceptibility to two social influence techniques: social proof and scarcity. However, there are many other persuasive strategies that were not tested. According to Cialdini (1993), at least four additional social influence strategies play a key role in social influence processes: liking, reciprocity, authority, and commitment/consistency. A more complete analysis of the effect of power on persuasion would focus on the remaining social influence strategies.

The liking principle states that people tend to be more persuaded by sources that they like than those toward whom they have neutral or negative feelings. In experimental studies, liking is usually manipulated by varying the physical attractiveness or similarity of the target. Generally, people like (and are persuaded by) attractive and similar individuals more than unattractive and dissimilar individuals (Berscheid, 1966; Eagly & Chaiken, 1975). A review of the literature suggests that power may affect an individual's susceptibility to highly liked sources. Specifically, high power has been linked with high levels of attention to and interest in attractive opposite-sex individuals because power activates a mating motive (Bargh, Raymond, Pryor, & Strack, 1995, Kunstman & Maner, 2011). The increased attention paid to attractive opposite-sex

individuals may increase susceptibility to persuasive appeals. Pharmaceutical companies seem to believe in the power of attractiveness for persuasion. Pharmaceutical sales representatives, who are tasked with persuading a predominantly powerful, middle-aged, male demographic, tend to be attractive, young women (Gray, Hoffman, & Mansfield, 2010). Additionally, the tendency to rely on emotional states when making decisions (“affect as information”) may be greater for high power than low power individuals (Keltner et al., 2003; Menzel, unpublished data). Thus, the positive emotion felt toward an attractive or similar source may have a greater persuasive impact for high power than low power individuals.

One of the most effective persuasive techniques is reciprocity; the exchange of goods and services with the expectation of future repayment. Social influence tacticians will often exploit the reciprocity rule by giving a target a gift (often of very little value) and then requesting that the target repay the debt by purchasing a product. People do not like to feel indebted to someone else, and are often motivated to reciprocate the favor (Cialdini, 2001). Reciprocity is also a strategy that fosters affiliation. Performing and repaying favors is an integral part of group membership and people who violate reciprocity norms are severely censured by the group (Leahey & Lewin, 1978). The interdependence of low power individuals likely makes them strongly value group acceptance and follow reciprocity norms. High power people feel less constrained by others, and therefore may be more likely to de-value or ignore reciprocity norms. In line with this hypothesis, previous research has shown that high power individuals are less likely to abide by a number of social norms. Powerful individuals are more likely to eat with their mouths open, interrupt others, invade personal space, cheat, and act aggressively (DePaulo & Friedman; Galinsky et al., 2003; Haney, Banks, & Zimbardo, 1973; Keltner et al., 2003; Lammers, Stapel, & Galinsky, 2008). This tendency for powerful individuals to violate norms and eschew affiliation suggests they may also be less susceptible to persuasive appeals based on the reciprocity principle.

When the source of a persuasive message is perceived to have authority, people have a strong tendency to obey (Milgram, 1963). Similarly, when persuasive sources wear lab coats or display other trappings of authority, they are perceived as more trustworthy and have a larger persuasive impact than sources lacking perceived authority (Chaiken & Trope, 1999). Survey research outside of the lab suggests that low power individuals express more trust in authority

than high power individuals (Jost, Pelham, Sullivan, & Sheldon, 2001). In contrast, high power individuals may question the power of an authority figure to constrain their behavior because high power is usually associated with relative freedom of action (Galinsky et al., 2003; Keltner et al., 2003). Conversely, low power individuals show more attention to high-status group members (DePaulo & Friedman, 1998) and may fear the repercussions of disobedience more than individuals with power. Thus, I predict that persuasive appeals based on authority will be more effective for low power individuals than high power individuals.

One social influence strategy, commitment/consistency, is based on classic cognitive dissonance research (Cialdini, 1993). Research on cognitive dissonance has shown that people have a strong desire to have thoughts, feelings, and behavior that are consistent with one another (Aronson, 1992). Lacking consistency is aversive and individuals will change their thoughts, feelings, or behavior in order to achieve consistency (Harmon Jones, Brehm, Greenberg, Simon, & Nelson, 1996). Social influence tacticians have exploited this desire by having people perform a relatively minor task (putting a small “drive safely” sticker in their window) that commits them to a certain way of perceiving themselves. Subsequently, the social influence target is asked to perform a more demanding task that is consistent with the first request (place an enormous “drive safely” sign in their front yard). People are more likely to acquiesce to the large request if they had previously shown commitment and if they believe their behavior was freely chosen or unconstrained by other individuals (Cooper & Fazio, 1984). Experiencing high power may increase susceptibility to social influence strategies based on commitment/consistency because powerful people show more consistency between with their self-concept and behavior than low-power individuals (Kraus, Chen, & Keltner, 2011). Powerful people are also more likely than low-power people to think that their behaviors are freely chosen (Galinsky et al., 2003). Both of these factors are hypothesized to increase cognitive dissonance and, consequently, the effectiveness of commitment/consistency appeals for high power individuals.

### **4.3 Conclusion**

The current studies contribute to a growing field of research examining the cognitive, affective, and behavioral consequences of power. Additionally, the influence of low power on cognition and behavior, a less explored domain of research, was also investigated. Two novel findings emerged from my examination of potential mediators. Affiliative motivation and BIS

engagement both affected the persuasiveness of social proof appeals. These results add to the growing list of factors that affect susceptibility to persuasion and have potential implications outside of the lab.

Unfortunately, the results contained in this dissertation provide only mixed support for the guiding hypotheses regarding power and susceptibility to persuasive appeals. These ambiguous results suggest that the effects of power on cognition are complex and may be moderated by a number of factors. Future research would benefit from considering the influence of individual differences such as anxiety and dominance on people's responses to power.

## APPENDIX A

### DOMINANCE SUBSCALE OF THE AMS

Please indicate the degree to which you agree or disagree with the following statements.

I think I would enjoy having authority over other people.

1	2	3	4	5	6	7
Strongly Disagree	Disagree	Disagree Slightly	Neither Agree nor Disagree	Agree Slightly	Agree	Strongly Agree

If given a good chance I would make a good leader of people.

1	2	3	4	5	6	7
---	---	---	---	---	---	---

I think I am usually a leader in my group.

1	2	3	4	5	6	7
---	---	---	---	---	---	---

I enjoy planning things and deciding what other people should do.

1	2	3	4	5	6	7
---	---	---	---	---	---	---

I like to give orders and get things going.

1	2	3	4	5	6	7
---	---	---	---	---	---	---

People take notice of what I say.

1	2	3	4	5	6	7
---	---	---	---	---	---	---

When a group I belong to plans an activity I would rather direct it myself that just help out and have someone else organize it.

1	2	3	4	5	6	7
---	---	---	---	---	---	---

## APPENDIX B

### THE NEED TO BELONG SCALE

Please indicate the degree to which you agree or disagree with the following statements.

If other people don't seem to accept me, I don't let it bother me.

1	2	3	4	5
Strongly Disagree	Moderately Disagree	Neither Agree Nor Disagree	Moderately Agree	Strongly Agree

I try hard not to do things that will make other people avoid or reject me.

1	2	3	4	5
---	---	---	---	---

I seldom worry about whether other people care about me.

1	2	3	4	5
---	---	---	---	---

I need to feel that there are people I can turn to in times of need.

1	2	3	4	5
---	---	---	---	---

I want other people to accept me.

1	2	3	4	5
---	---	---	---	---

I do not like being alone.

1	2	3	4	5
---	---	---	---	---

Being apart from my friends for long periods of time does not bother me.

1	2	3	4	5
---	---	---	---	---

I have a strong need to belong.

1	2	3	4	5
---	---	---	---	---

It bothers me a great deal when I am not included in other people's plans.

1	2	3	4	5
---	---	---	---	---

My feelings are easily hurt when I feel that others do not accept me.

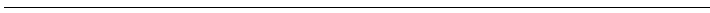
1	2	3	4	5
---	---	---	---	---



## APPENDIX C

### LINE BISECTION TASK

Please make a single vertical mark with your pen at the midpoint of the following lines. Do not use a ruler or any other tool to perform this task; just make your best visual estimate.



## APPENDIX D

### STARRY NIGHT AND GREAT WAVE POSTERS

Starry Night



Great Wave off Kanagawa



## APPENDIX E

### IRB APPROVAL MEMORANDUM AND INFORMED CONSENT

The Florida State University  
Office of the Vice President For Research  
Human Subjects Committee  
Tallahassee, Florida 32306-2742  
(850) 644-8673 · FAX (850) 644-4392

Date: 9/14/2012

To: Andrew Menzel

Address: 1107 W Call St. Tallahassee, FL 32306-4301  
Dept.: PSYCHOLOGY DEPARTMENT

From: Thomas L. Jacobson, Chair

Re: Use of Human Subjects in Research  
Power, Heuristics, and Persuasion

The application that you submitted to this office in regard to the use of human subjects in the proposal referenced above have been reviewed by the Secretary, the Chair, and one member of the Human Subjects Committee. Your project is determined to be Expedited per per 45 CFR § 46.110(7) and has been approved by an expedited review process.

The Human Subjects Committee has not evaluated your proposal for scientific merit, except to weigh the risk to the human participants and the aspects of the proposal related to potential risk and benefit. This approval does not replace any departmental or other approvals, which may be required.

If you submitted a proposed consent form with your application, the approved stamped consent form is attached to this approval notice. Only the stamped version of the consent form may be used in recruiting research subjects.

If the project has not been completed by 9/12/2013 you must request a renewal of approval for continuation of the project. As a courtesy, a renewal notice will be sent to you prior to your expiration date; however, it is your responsibility as the Principal Investigator to timely request renewal of your approval from the Committee.

You are advised that any change in protocol for this project must be reviewed and approved by the Committee prior to implementation of the proposed change in the protocol. A protocol change/amendment form is required to be submitted for approval by the Committee. In addition, federal regulations require that the Principal Investigator promptly report, in writing any unanticipated problems or adverse events involving risks to research subjects or others.

By copy of this memorandum, the Chair of your department and/or your major professor is reminded that he/she is responsible for being informed concerning research projects involving human subjects in the department, and should review protocols as often as needed to insure that the project is being conducted in compliance with our institution and with DHHS regulations.

This institution has an Assurance on file with the Office for Human Research Protection. The Assurance Number is FWA00000168/IRB number IRB00000446.

Cc: Jon Maner, Advisor  
HSC No. 2012.8809

## INFORMED CONSENT FORM

I freely and voluntarily and without element of force or coercion, consent to be a participant in the research project entitled "Evaluating Messages" This research is being conducted by Andrew Menzel, a graduate student in the Department of Psychology at Florida State University working with Dr. Jon Maner, Professor in the Department of Psychology at Florida State University. I understand that I will be asked to write a brief autobiographical story. I understand that I will be asked to answer questions about my personality. I understand that I will be asked to respond to a review of a restaurant. I understand that all my answers will be confidentially analyzed, meaning my data will not be linked to me in any manner and will be kept completely anonymous. I have the right to stop my participation in this study at any time I wish.

I understand that I must be at least 18 years of age in order to participate. The total time commitment would be about 30 minutes and I will be compensated by receiving one half of a credit point. I understand that my participation is totally voluntary and I may stop participation at any time. If I decide to stop participation, I will still receive my credit. All my answers to the questions will be completely confidential and will not be connected to me by name or other identifying information. In addition, my name will not appear on any of the results. No individual responses will be reported, only group findings will be reported. I understand that all data relevant to the study will be kept in a locked file cabinet in a laboratory space provided by the FSU psychology department for 10 years.

I understand that there is a possibility of a minimal level of risk involved if I agree to participate in this study. I might experience anxiety when completing some of the questionnaires. The research assistant will be available to talk with me about any emotional discomfort I may experience while participating. I am also able to stop my participation at any time I wish.

I understand that there are educational benefits for my participation in this study. I will learn about types of persuasive appeals and directly experience social psychological research. I understand that I will earn partial completion of course credit.

I understand that this consent may be withdrawn at any time without prejudice, penalty, or loss of benefits to which I am otherwise entitled. I have been given the right to ask and have answered any inquiry concerning the study. Questions, if any, have been answered to my satisfaction.

I understand that I may contact Andrew Menzel, Florida State University, Department of Psychology, Psychology building room A303, menzel@psy.fsu.edu or Dr. Jon Maner, Florida State University, Department of Psychology Room 323a, 645 – 1409, for answers to questions about this research or my rights. Group results will be sent to me upon my request. If I have questions about my rights as a subject/participant in this research, or if I feel I have been placed at risk, I can contact the Chair of the Human Subjects Committee, Institutional Review Board, through the Office of the Vice President for Research, at (850) 644-8633.

I have read and understand this consent form.

\_\_\_\_\_  
Name

\_\_\_\_\_  
Date

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## **BIOGRAPHICAL SKETCH**

Andrew Menzel earned a B.S. in psychology from Arizona State University. His undergraduate mentors include Doug Kenrick, Robert Cialdini, and Vidas Griskevicius. His graduate mentor at Florida State University is Jon Maner. Andrew earned his M.S. from Florida State University in 2010. His research interests include social cognition, social influence, persuasion, power, and decision making.