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# Squeezed in the Middle: The Middle Status Trade Creativity for Focus

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# Squeezed in the Middle: The Middle Status Trade Creativity for Focus

## **Abstract**

Classical research on social influence suggested that people are the most conforming in the middle of a status hierarchy as opposed to the top or bottom. Yet, this promising line of research was abandoned before the psychological mechanism behind middle status conformity had been identified. Moving beyond the early focus on conformity, we propose that the threat of status loss may make those with middle status more wary of advancing creative solutions in fear that they will be evaluated negatively. Using different manipulations of status and measures of creativity, we found that when being evaluated, middle status individuals were less creative than either high status or low status individuals (Studies 1 & 2). In addition, we found that anxiety at the prospect of status loss also caused individuals with middle status to narrow their focus of attention and to think more convergently (Study 3). We delineate the consequences of power and status both theoretically and empirically by showing that, unlike status, the relationship between power and creativity is positive and linear (Study 4). By both measuring status (Studies 2 & 3) and by manipulating it directly (Study 5), we demonstrate that the threat of status loss explains the consequences of middle status. Finally, we discuss the theoretical implications of our results for future research on status and problem solving on tasks that require either focus or flexibility.

## **Keywords**

status, creativity, conformity, convergent thinking

## **Comments**

### **Suggested Citation**

Duguid, M. M., & Goncalo, J. A. (2015). *Squeezed in the middle: The middle status trade creativity for focus* [Electronic version]. Retrieved [insert date] from Cornell University, ILR School site: <http://digitalcommons.ilr.cornell.edu/articles/950>

### **Required Publisher Statement**

The final version of this paper is forthcoming in *Journal of Personality and Social Psychology*, published by the American Psychological Association.

RUNNING HEAD: Middle Status and Creativity

Squeezed in the Middle: The Middle Status Trade Creativity for Focus

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### Abstract

Classical research on social influence suggested that people are the most conforming in the middle of a status hierarchy as opposed to the top or bottom. Yet, this promising line of research was abandoned before the psychological mechanism behind middle status conformity had been identified. Moving beyond the early focus on conformity, we propose that the threat of status loss may make those with middle status more wary of advancing creative solutions in fear that they will be evaluated negatively. Using different manipulations of status and measures of creativity, we found that when being evaluated, middle status individuals were less creative than either high status or low status individuals (Studies 1 & 2). In addition, we found that anxiety at the prospect of status loss also caused individuals with middle status to narrow their focus of attention and to think more convergently (Study 3). We delineate the consequences of power and status both theoretically and empirically by showing that, unlike status, the relationship between power and creativity is positive and linear (Study 4). By both measuring status (Studies 2 & 3) and by manipulating it directly (Study 5), we demonstrate that the threat of status loss explains the consequences of middle status. Finally, we discuss the theoretical implications of our results for future research on status and problem solving on tasks that require either focus or flexibility.

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### **Squeezed in the Middle: Middle Status, Creativity and the Threat of Status Loss**

Research on the antecedents and outcomes of social status has become one of the most vibrant streams of research in social psychology and related disciplines (Fiske, 2010; Fiske & Berdahl, 2007; Hall, Coats, & LeBeau, 2005; Keltner, Gruenfeld, & Anderson, 2003; Magee & Galinsky, 2008). Status is defined as the prominence, respect, honor, and influence that individuals enjoy in the eyes of others (Anderson, Srivastava, Beer, Spataro, & Chatman, 2006). A reasonable and widely held assumption in the status literature is that most individuals strive to attain status because of the many benefits that accrue as one moves up the status hierarchy (Fan & Gruenfeld, 1998; Podolny, 2003; Ridgeway & Walker, 1995; Sivanathan & Pettit, 2010). Those attaining higher status are given more control over group decisions (Berger, Rosenholtz & Zelditch, 1980), more attention and influence over lower status group members (Ridgeway and Walker, 1995), more choice over whom to collaborate with (Hardy & Van Vugt, 2006) and more credit when those collaborations result in successful outcomes (Fan & Gruenfeld, 1998; Podolny, 2003). Presumably all of these psychological and material benefits of status should also make individuals more confident and more self-assured (Adler, Epel, Castellazzo & Ickovics, 2000), but do the benefits of acquiring status accrue in a straightforward, linear fashion?

Classical research on social influence suggests not, purporting instead that individuals with middle status are in fact more insecure and more conforming than those with either high or low status (Dittes & Kelley, 1956; Homans, 1961; Kelley & Shapiro, 1954). Homans (1961: 357) dubbed this curvilinear effect “middle status conservatism” which, he argued, “reflects the anxiety experienced by one who aspires to a social station but fears disenfranchisement.” The early findings pointing to middle status conformity were promising but the methodological approaches to studying status were imprecise, the results somewhat inconsistent and the line of

research abandoned before the phenomenon was clearly understood (Homans, 1961; Philips & Zuckerman, 2001). For example, some of the studies were correlational or qualitative (e.g. Blau, 1955) leaving open the possibility that more conforming individuals seek out middle status positions. Other studies conflated status and power. For example, Bartos (1958) simply used existing leadership positions as proxies for status, positions that may have also included power over others. Moreover, though the early research theorized that middle status conformity stems from a sense of insecurity (Kelley & Shapiro, 1954; Dittes & Kelley, 1956), there was no direct evidence to corroborate the psychological process that was assumed to be triggered by middle status. Thus, an important question remains—do middle status individuals gain confidence having escaped the bottom of the hierarchy or do they face a unique set of pressures at the middle that trigger a sense of insecurity and a fear of rejection?

In the current research, we attempt to address this question by investigating how middle status impacts creative task performance. We do so with two important objectives in mind. First, we build on the early research on middle status conformity by specifying the psychological process underlying this phenomenon—the threat of status loss—and by measuring it directly. Elucidating the underlying psychological mechanism associated with middle status provides a starting point for investigating interesting new questions about the psychological and behavioral consequences of status that were not proposed in the early research which was focused narrowly on conformity to a group majority. Hence, our second objective is to broaden the focus of existing research to investigate the consequences of middle status for problem solving and task performance. We suggest that the threat of status loss may make those with middle status more wary of advancing creative solutions out of fear that they will be evaluated negatively.

### **Middle Status and the Threat of Status Loss**

A growing stream of research investigates the consequences of status, but existing research has almost exclusively compared the perceptions, attitudes and behaviors of those with high and low status. There are in fact many situations in which individuals may find themselves in a middle status position; knowing that they are not the most respected, influential and prestigious person in a group but also that they are more respected, influential and prestigious than others (Homans, 1961). Those with middle status may be an important but overlooked segment of the social hierarchy in modern psychological research. Indeed, the idea of middle status conformity was intriguing but largely forgotten in social psychology by the early 1970's (Phillips & Zuckerman, 2001). And, though the concept of middle status conformity has attracted some attention in the sociological literature (Phillips & Zuckerman 2001), that work has not yet addressed or identified the underlying psychological process that causes individuals with middle status to more readily conform to a group majority.

The early research on status and conformity yielded inconsistent results and when middle status conformity did emerge, it was not clear why. For example, Kelley and Shapiro (1954) conducted a seminal experiment in which participants were shown to a room in small groups and asked to introduce themselves to each other. They were asked to rate, based on this brief initial interaction, how acceptable they found each of the other participants as a potential co-worker. Each participant was then led to believe that they were viewed by the others as either not at all acceptable (low status) or highly acceptable (high status). Finally, the participants were asked to complete a task that measured their willingness to conform to the group with which they had just briefly interacted. The results showed that the participants who thought their group viewed them as unacceptable co-workers were also the least likely to conform to the group's opinion. There

was much more unexplained variance, however, among participants who believed that they were viewed as highly acceptable co-workers—some readily conformed while others were more likely to resist majority pressure.

In a follow-up experiment, Dittes and Kelley (1956) replicated the procedure of the previous experiment but introduced a more fine-grained manipulation of status that led some participants to believe they were highly acceptable to the group, not at all acceptable to the group or about average. This latter middle status category was missing from the previous experiment. After each participant clearly understood their relative standing in the group, they were then asked to complete a decision-making task that measured their propensity to conform to the group's decision, a decision that was clearly incorrect given the available evidence.

The results showed that the participants with the highest status were less likely to conform and more likely to dissent from the group judgment compared to participants in the middle status condition. Unlike the previous experiment, however, conformity in the low status condition was not as low as conformity in the high status condition. In other words, taken together the results of the two studies pointed toward middle status conformity though neither study demonstrated it cleanly.

We suggest that the threat of status loss may tie together and explain these inconsistent early results pointing to an inverted U-shaped relationship between status and conformity (Bartos, 1958; Blau, 1955; Dittes & Kelley, 1956; Kelley & Shapiro, 1954). The threat of status loss is a particularly potent threat because individuals are more motivated to maintain their status when faced with the prospect of losing it than to gain status in situations where there is an opportunity to acquire it. Indeed, individuals are willing to pay more money and to exert more effort to avoid losing status than to gain it (Pettit, Yong & Spataro, 2010).

Individuals at the very bottom of the status hierarchy may feel that they have very little or nothing left to lose in terms of esteem that had not already been taken from them. Thus, they are less likely to be threatened by further status loss (Blau, 1955; Dittes & Kelley, 1956).

Conversely, being at the top of the social hierarchy may mitigate the threat of status loss by infusing individuals in this position with confidence. High status actors enjoy greater psychological well-being (Adler, Epel, Castellazzo & Ickovics, 2000), ego satisfaction (Barkow, 1989) and self-esteem (Emerson, 1962). Given this stream of positive social interaction and feedback, high status individuals are also more likely to trust others (Lount & Pettit, 2012).

In contrast to both the low and high status individuals, the threat of status loss may be most salient in the middle of the status hierarchy. Research on social mobility lends support to the notion that middle status individuals feel threatened in situations where status loss is possible. Socially mobile individuals are those who manage to gain more status than their lower status counterparts but still remain on the periphery of the high status group (Chattopadhyay, Tluchowska, & George, 2004). These individuals strive to maintain their middle status position or increase their status and are very cautious not to act in ways that might interfere with this goal (Davis & Watson, 1982; Duguid, 2012; Ibarra, 1995; Phinney, 1990). For example, there is evidence that women who make it into the top tiers of their organizations but still feel like they are perceived as peripheral or marginal group members make a point of emphasizing behaviors not associated with being female because they do not want to be classified as a member of a group which generally has lower status in most organizational contexts (Ellemers, 2001; Ely, 1994). In sum, middle status individuals may be particularly threatened by the prospect of losing status. This concern with status loss may have significant implications for problem-solving and task performance.

## **Creativity and Status**

Middle status conformity is not necessarily dysfunctional—indeed one of the attractive features of a status hierarchy is that it serves to reduce destructive forms of conflict and promote voluntary cooperation and coordination between group members (Halevy, Chou & Galinsky, 2011). In organizations, individuals with middle status may be called upon to implement decisions made by those higher up—thus a rebellious and non-conforming middle manager would not necessarily serve the needs of the group (Huy, 2001). Yet, particularly when the majority is in error, it is sometimes important for individuals to defy convention to pursue novel ideas that depart from the status quo (Goncalo & Staw, 2006; Galinsky, Magee, Gruenfeld, Whitson, & Liljenquist, 2008; Goncalo & Duguid, 2012).

If the threat of status loss causes those with middle status to more readily conform to convention, then they may be at a significant disadvantage in situations that demand creative solutions as opposed to those that demand obedience or cooperation. The distinguishing characteristic of a creative idea over and above ideas that are merely practical is that creative ideas diverge in a novel direction from what is known (Amabile, 1983). Because creative solutions are novel, they often run counter to existing knowledge (Ward, 1994) and are thus likely to be controversial, at least initially (Mueller, Melwani & Goncalo, 2012). Creative solutions may also encounter more subtle resistance from evaluators who may state explicitly that they desire creativity but in the end favor more practical solutions (Mueller, Goncalo & Kamdar, 2011). In other words, individuals who express a creative idea must be willing to risk criticism and resist substantial pressure to conform to existing solutions (Förster, Friedman, Butterbach, & Sassenberg, 2005; Kim, Vincent, & Goncalo, 2012; Nemeth & Staw, 1989). The potential for negative evaluation impedes creativity because, even if individuals are able to

generate creative solutions, they may be reluctant to share them if they fear that their ideas will be criticized (Diehl & Stroebe, 1987). For example, groups composed of dispositionally anxious individuals generated fewer ideas when brainstorming compared to groups composed of less anxious individuals (Camacho & Paulus, 1995). Moreover, this difference was not apparent when individuals brainstormed alone, suggesting that the fear of being evaluated was what caused anxious individuals to withhold their ideas (Camacho & Paulus, 1995).

Individuals with middle status may be particularly threatened by the prospect that their ideas will be evaluated negatively by others and these feelings of threat may inhibit their willingness to share creative ideas. These feelings of threat are appropriate given individuals who express creative ideas, as opposed to purely practical ideas, risk appearing quirky and unpredictable; impressions that may prevent them from maintaining their position or may cause them to move down the status hierarchy (Mueller, Goncalo, & Kamdar, 2011). In other words, middle status individuals operate just outside the warm glow of social acceptance that high status provides, yet they are high enough in the status hierarchy to fear the loss of status. Thus, the prospect of being criticized and negatively evaluated for suggesting a creative idea may be particularly salient to individuals with middle status.

Bolstered by the social acceptance of others (Lount & Pettit, 2011; Magee & Galinsky, 2008), high status individuals may be more confident that, even if their creative ideas are evaluated negatively, they will not feel threatened by the prospect of status loss. Hence, confidence in the security of their position in the group will embolden high status individuals to risk suggesting creative ideas. Compared to individuals with middle status, having low status may also be somewhat liberating for two reasons. First, knowing that they are at the very bottom of the status hierarchy, and therefore not likely to make a significant move further down than

they already are, may substantially reduce low status individuals' evaluation concerns (Blau, 1955). Second, a viable way to gain status may be by suggesting ideas that are very novel and thus distinguishable from others (Clydesdale, 2006; Merton, 1968; Sutton & Hargadon, 1996). Though the middle status could, in theory, improve their status position by being creative, doing so would entail much more risk compared to the risks faced by those with low status. If the middle status diverge too far from existing solutions they could be criticized, rejected and be relegated to a lower status position—this risk would be particularly salient given the prospect of status loss looms larger than the opportunity for status gain (Petit et al, 2010). Low status group members may risk moving from “low” to “lower” but doing so would not constitute a meaningful change in status position—particularly compared to moving from “middle” to “low” (Phillips & Zuckerman 2001). This relative lack of evaluation apprehension combined with the potential for acquiring status by standing out from the group could liberate low status individuals to suggest novel solutions.

### **The Present Research**

In sum, we hypothesize that the threat of status loss should make individuals with middle status less creative than individuals at the top or the bottom of the status hierarchy. In Study 1, we manipulated status level and then asked participants to generate new ideas. We expected that middle status individuals would be most vulnerable to the threat of status loss when there was the prospect of evaluation and would therefore generate the least creative ideas under conditions of expected evaluation but not under the cover of anonymity. Accordingly, we also manipulated whether participants expected that their ideas would be evaluated after the experiment or whether they would generate ideas anonymously. In Study 2, we tested the robustness and replicability of this effect using a different status manipulation and a different measure of creativity. In

addition, in Study 2, we measured the threat of status loss directly in order to trace the underlying psychological process. In Study 3, we investigated the possibility that having middle status might narrow rather than broaden attention and improve performance on a task that demands convergent rather than divergent thought. We again investigated the role of threat of status loss by both manipulating expected evaluation and measuring threat of status loss directly.

One implication of our theoretical perspective is that the curvilinear relationship between creativity and status is unique to status as opposed to power. Because power is derived from control over resources rather than conferred by the group, individuals with middle power should feel less susceptible to the threat of status loss (Blader & Chen, 2012). Hence, in Study 4, we manipulated power level (high, middle and low) and expected evaluation. Finally, in Study 5, we investigated the threat of status loss directly, by manipulating the stability of the status hierarchy. We expected that individuals with middle status would experience less status threat and hence be just as creative as their counterparts with high or low status when they are assured that they cannot move further down the hierarchy.

The current set of studies extends existing research in at least two important ways. First, our findings extend the classical research on middle status conformity to the realm of problem solving and creative task performance. Second, by manipulating expected evaluation and measuring threat of status loss directly, we demonstrate mediating evidence of the underlying psychological mechanism that might explain how status might influence a wide range of outcomes yet to be investigated in existing research. In sum, we present evidence suggesting that middle status is a unique psychological experience that has yet to be fully explicated.

## Study 1

### Method

**Participants and design.** Two hundred and twelve participants (Mean age = 20.13; females = 43%) took part in the study which consisted of a 3 (status: high vs. middle vs. low) x 2 (evaluation: yes vs. no) between-participants design. Participants were undergraduate students who were given course credit for taking part in the study.

**Procedure.** The study involved two phases. In phase 1, we manipulated status using an adapted version of Bowles and Gelfand's (2010) psychological experience of status. Specifically, participants were told that, "In this study, we were interested in how groups interact to solve difficult problems. Before you interact as a group, however, we would first like to learn more about you as an individual. Please read and respond to the following question:" Participants then read:

Status determines the extent to which people respect and look up to you or defer to your opinion because you have a lot of experience or competence. Please recall a particular incident in which you were part of a group and in that group your status relative to others was *"HIGH," that is at the top of the status hierarchy/ around the "MIDDLE," that is neither the top nor the bottom of the status hierarchy/"LOW," that is at the bottom of the status hierarchy.* Please describe this situation in which you had *high/middle/low* status - what happened, how you felt, etc.

In the second phase, participants were told, "Now we would like you to prepare for the group task by generating solutions to a problem. As you complete the task, please keep in mind that (you will get feedback on your ideas from the experimenter, which could affect your role in the group)/(your ideas will remain anonymous and will not affect your role in the group). They

were told that this task involved a scenario in which they would be asked to generate ideas. The scenario was as follows: “A recent survey suggested that students are overwhelming dissatisfied with the current state of the undergraduate lounge. The Dean has decided to get students to generate ideas about how to solve the problem. Your task is to come up with as many ideas as you can about how to improve the undergraduate lounge.” Participants were given seven minutes to complete the task. Finally, participants completed a questionnaire which included the status, power and evaluation manipulation check items.

### **Creativity**

**Number of ideas generated.** A simple indicator of creativity is the sheer number of ideas an individual is able to generate in a fixed amount of time. The more ideas an individual generates, the more likely he is to arrive at a novel solution (Diehl & Stroebe, 1987; Simonton, 1999).

**Idea novelty.** In addition to the sheer number of ideas, we also coded for novelty directly. Two coders who were blind to the experimental condition and predictions of the study coded each idea for novelty, which was defined as “the extent to which the idea resembles the typical undergraduate lounge.” Each coder was given a scale of 1 to 5, with the following definitions for specific points on the scale:

5 = Extremely novel

3 = Average novelty

1 = Not at all novel

The inter-rater correlation was significant, ( $ICC = 0.81, p = 0.006$ ) so the scores were averaged together.

## Results

### Manipulation checks

**Status.** Consistent with previous research (e.g., Galinsky, Gruenfeld, & Magee, 2003; Inesi, 2010; Ronay & von Hippel, 2010), two coders blind to both the experimental condition and our hypotheses categorized the priming essays as high, middle, low status or whether they could not determine which category the essay belonged to. One hundred percent of the essays were categorized correctly in terms of condition.

We verified that our status manipulations did not also influence power. Participants reported to what extent they felt dependent (reverse coded), powerful and dominant (Duguid & Goncalo, 2012). Endpoints were 1 (very little) and 9 (a great deal) ( $\alpha = 0.78$ ). ANOVA revealed no main effect of status,  $F(2, 206) = 0.62$ ,  $p = 0.618$ , partial Eta = 0.001, evaluation,  $F(1, 206) = 0.36$ ,  $p = 0.782$ , partial Eta = 0.001, or interaction between status and evaluation,  $F(2, 206) = 2.01$ ,  $p = 0.128$ , partial Eta = 0.010.

**Evaluation.** Participants indicated whether they would get feedback from the experimenter or that their ideas would remain anonymous. All but two participants reported information that was consistent with the condition to which they were randomly assigned. These two individuals were excluded from the final analyses, however, including their data yielded identical results.

### Creativity

**Number of ideas generated.** Analysis of variance (ANOVA) revealed no significant main effect of status,  $F(2, 206) = 0.16$ ,  $p = 0.849$ , partial Eta = 0.002. There was a main effect of evaluation,  $F(1, 206) = 8.49$ ,  $p = 0.004$ , partial Eta = 0.04, such that participants generated fewer ideas when they assumed they would be evaluated ( $M = 16.08$ ,  $SD = 7.69$ ) than when their ideas were anonymous ( $M = 19.62$ ,  $SD = 10.15$ ). There was also a significant interaction between

status and evaluation,  $F(2, 206) = 3.25$ ,  $p = 0.041$ , partial  $\eta^2 = 0.034$ . Planned contrasts showed that when ideas were being evaluated, middle status participants generated fewer ideas ( $M = 13.42$ ,  $SD = 5.79$ ) than high status participants ( $M = 16.84$ ,  $SD = 8.24$ ),  $t(69) = -2.53$ ,  $p = 0.014$ , and low status participants ( $M = 17.79$ ,  $SD = 8.19$ ),  $t(65) = 2.04$ ,  $p = 0.045$ . There was no significant difference in ideas generated by high and low status participants,  $t(70) = 0.63$ ,  $p = 0.625$ .

In contrast, when ideas were not being evaluated, there was no significant difference in number of ideas generated by middle status participants ( $M = 21.47$ ,  $SD = 10.29$ ) and high ( $M = 18.56$ ,  $SD = 10.51$ ),  $t(70) = -1.14$ ,  $p = 0.260$ , and low status participants ( $M = 18.80$ ,  $SD = 8.41$ ),  $t(69) = -1.13$ ,  $p = 0.263$ . There was also no significant difference in number of ideas generated by high and low status participants,  $t(69) = -0.11$ ,  $p = 0.914$ .

**Idea novelty.** ANOVA revealed no significant main effect of status,  $F(2, 206) = 0.99$ ,  $p = 0.372$ , partial  $\eta^2 = 0.01$  or evaluation,  $F(1, 206) = 0.08$ ,  $p = 0.783$ , partial  $\eta^2 = 0.001$ . There was, however, a significant interaction between status and evaluation,  $F(2, 206) = 3.32$ ,  $p = 0.038$ , partial  $\eta^2 = 0.031$ . Planned contrasts showed that when participants believed their ideas were being evaluated, middle status participants generated less novel ideas ( $M = 1.77$ ,  $SD = 0.47$ ) than high status participants ( $M = 2.10$ ,  $SD = 0.45$ ),  $t(65) = 2.09$ ,  $p = 0.040$ , and low status participants ( $M = 2.13$ ,  $SD = 0.52$ ),  $t(65) = -2.09$ ,  $p = 0.040$ . There was no significant difference in novelty of ideas generated by high and low status participants,  $t(70) = 0.20$ ,  $p = 0.840$ . On the other hand, when ideas were anonymous, middle status participants' ideas were no less novel ( $M = 2.06$ ,  $SD = 0.32$ ) than those of high status participants ( $M = 2.01$ ,  $SD = 0.36$ ),  $t(70) = -0.66$ ,  $p = 0.511$ , and those of low status participants ( $M = 1.98$ ,  $SD = 0.34$ ),  $t(69) = 1.11$ ,  $p = 0.272$ . There

was also no significant difference in idea novelty for high and low status participants,  $t(69) = 0.40$ ,  $p = 0.691$ .

### **Discussion**

In support of our hypothesis that status would bear a U-shaped relationship to creativity, the results demonstrate that when they expected to be evaluated, middle status individuals generated fewer and less novel ideas compared to high and low status participants. However, there was no difference in the number and novelty of the ideas generated when participants thought their ideas would remain anonymous. In Study 2, we planned to replicate and extend these findings. We used a different status manipulation and investigated threat of status loss as the mechanism underlying the relationship between status and creativity. We also employed a different measure of creativity to demonstrate the robustness and generalizability of the effect to different tasks. An important part of the creative process is the ability to go beyond what is known to generate something new (Ward, 1994). This task is quite difficult, however, as individuals are constrained by what they already know and often generate products or ideas that very closely resemble those that already exist (Ward, 1994). One reason that individuals may find it difficult to break from what is already known is that they fear their ideas will be criticized for being too unusual (Camacho & Paulus, 1995; Mueller et al., 2011). Therefore, in line with our general hypothesis that middle status individuals are most threatened by the prospect of evaluation, we expect that they will be less creative in a structured imagination task in which they are asked to deliberately generate a novel entity.

## Study 2

### Method

#### Participants and Design

One hundred and thirty participants (Mean age = 19.91; females = 41%) took part in the study which consisted of a 3 (status: high vs. middle vs. low) x 2 (evaluation: yes vs. no) between-participants design. Participants were undergraduate students who were given course credit for taking part in the study.

#### Procedure

Participants came to the laboratory in groups and were told that they would be participating in several studies, the first of which would investigate status and group performance. Participants completed a status assessment consisting of questions that they were told measured ability on the upcoming group decision-making task and therefore, would be used to establish their status position (Pettit et al., 2010). The assessment consisted of a combination of questions related to reasoning, creativity and leadership. After the assessment was ostensibly scored, participants were randomly assigned to a President (high status), Middle Manager (middle status), or Assistant (low status) position. They were told that their roles differed in how much others would grant them respect and prestige but that they did not differ in the amount of power i.e., amount of resource and making final decisions. Moreover, in order to reinforce their status, participants wrote their roles on nametags that they wore and wrote three behaviors that would lead to individuals being granted their role.

Participants were told that before meeting with their group, they would be completing a related individual task. They were given a structured imagination task in which they were told to “imagine going to another galaxy in the universe and visiting a planet very different from Earth”

(Ward, 1994). Participants were then given 7 minutes to draw a picture of an animal that is “local to this other planet.” Participants were either told that at the end of the experiment all of the participants in the session would compare all of the drawings and vote on the drawing that most closely followed the instructions given or they were told that none of the other participants in the session would see their drawing so there would be no evaluation of the drawings.

Finally, participants completed an implicit threat measure used in previous studies (DeMarree, Wheeler, & Petty, 2005). We used an implicit measure because individuals are not always forthcoming about the level of threat they experience (Hass, Katz, Rizzo, Bailey, & Moore, 1992). Participants were told a word would be flashed on-screen so quickly that only their subconscious would be able to perceive it. They were told that after the word left the screen, a list of words would appear, and they should use their feelings at the moment to select which word they thought was the word that had just been flashed.

Trials began with a pre-mask of X’s serving as an orienting stimulus for 2,000 milliseconds, followed by subliminal presentation (17 milliseconds) of the target words, which was a nonsensical string of letters. A post-mask of X’s covered the target word for 1,000 milliseconds. Afterward, four words were presented and remained on the screen until participants made their selection of which word they believed was flashed onscreen. Half of the 12 trials were target trials, in which one of the four response options was a threat of status loss related word (i.e., loss, demote, threat, lower, devalue and downgrade). The position of the threat of status loss related words in the response options was randomized, as was the order of the trials.

**Creativity coding.** Following directly from previous research (e.g., Ward, 1994), structured imagination was coded for the atypicality of the space creatures’ sensory organs. Two trained coders who were blind to the study predictions assessed the drawings and accompanying

descriptions for evidence of “atypical” sensory organs. In accordance with Ward’s (1994) original coding scheme, space creatures were considered atypical if they (a) lacked a major sensory organ (i.e., eyes, ears, nose), (b) had atypical numbers of a sensory organ (e.g., three eyes), (c) demonstrated an unusual configuration of the sensory organs (e.g., eyes located below the nose), (d) had an exaggerated or unusual ability (e.g., eyes that had laser beams), or (e) sensory organs that served an atypical function (e.g., ears for protection). The total number of atypical features was tallied for each participant. The ratings of the two coders reached significant agreement ( $ICC = 0.77, p = 0.008$ ) and so their ratings were averaged together to create an overall measure of creative performance.

**Threat of status loss.** To create an overall measure of threat of status loss, we computed a composite measure by summing the number of threat related words selected. Scores ranged from 0 to 6; higher scores indicated a stronger feeling of threat of status loss (DeMarree et al., 2005). Finally, participants completed a short survey which included questions related to demographic information and the manipulation checks.

## Results

### Manipulation Checks

**Status.** The status manipulation was checked using four items adapted from Anderson et al. (2001). This included: “How much status, prominence and respect would others grant you?” Endpoints were 1 (very little) and 9 (a great deal), ( $\alpha = 0.80$ ). ANOVA revealed a main effect of status,  $F(2, 124) = 10.11, p < 0.001$ , partial Eta = 0.139. Participants randomly assigned to the President role felt higher status ( $M = 5.25, SD = 1.06$ ) than those assigned to the Middle Manager ( $M = 4.33, SD = 1.35$ ),  $t(84) = 2.38, p = 0.004$  or Assistant role ( $M = 3.56, SD = 1.37$ ),  $t(86) = 4.59, p < 0.001$ . Additionally, Middle Managers felt higher status than Assistants,  $t(88) =$

-2.00,  $p = 0.046$ . There was no significant main effect of evaluation,  $F(1, 124) = 0.32$ ,  $p = 0.571$ , partial  $\eta^2 = 0.003$  nor an interaction between status and evaluation,  $F(2, 124) = 2.20$ ,  $p = 0.108$ , partial  $\eta^2 = 0.03$ . Individuals' perceptions of power were also measured using the scale from Study 1, ( $\alpha = 0.91$ ). ANOVA revealed no main effect of status,  $F(2, 124) = 1.00$ ,  $p = 0.370$ , evaluation,  $F(1, 124) = 1.99$ ,  $p = 0.160$ , or interaction between status and evaluation,  $F(2, 124) = 0.46$ ,  $p = 0.632$ .

**Evaluation.** All participants reported information that was consistent with the evaluation condition to which they were randomly assigned.

**Creativity.** ANOVA revealed no main effect of status,  $F(2, 124) = 0.19$ ,  $p = 0.825$ , partial  $\eta^2 = 0.003$  nor evaluation,  $F(1, 124) = 0.71$ ,  $p = 0.402$ , partial  $\eta^2 = 0.006$ . There was, however, a significant interaction between status and evaluation,  $F(2, 124) = 4.18$ ,  $p = 0.017$ , partial  $\eta^2 = 0.063$ . Planned contrasts showed that when they thought their drawings were being evaluated, middle status participants generated less creative drawings ( $M = 2.55$ ,  $SD = 2.27$ ) than high ( $M = 3.86$ ,  $SD = 1.74$ ),  $t(40) = 2.11$ ,  $p = 0.041$ , and low status participants ( $M = 3.91$ ,  $SD = 2.00$ ),  $t(40) = 2.06$ ,  $p = 0.046$ . There was no significant difference in the creativity of high and low status participants,  $t(42) = 0.08$ ,  $p = 0.936$ . In contrast, when they did not think their drawings were being evaluated, middle status participants' ( $M = 4.33$ ,  $SD = 2.20$ ) drawing were not significantly less creative than high ( $M = 3.53$ ,  $SD = 2.23$ ),  $t(44) = -1.22$ ,  $p = 0.230$ , and low status participants ( $M = 3.38$ ,  $SD = 1.75$ ),  $t(41) = -1.55$ ,  $p = 0.128$ . There was also no significant difference in the creativity of high and low status participants,  $t(41) = 0.25$ ,  $p = 0.802$ .

**Threat of status loss.** We hypothesized that being middle status would elicit the strongest threat of status loss when individuals expect to be evaluated. An ANOVA on the composite measure of threat of status loss revealed a main effect of status,  $F(2, 124) = 7.73$ ,  $p = 0.001$ , partial  $\eta^2 =$

0.111 such that middle status ( $M = 1.98$ ,  $SD = 1.44$ ) participants identified more threat of status loss related words than high ( $M = 1.24$ ,  $SD = 1.10$ ),  $t(83) = -2.65$ ,  $p = 0.010$  or low status participants ( $M = 1.20$ ,  $SD = 1.01$ ),  $t(86) = -2.94$ ,  $p = 0.004$ . There was no significant difference in threat of status loss related words chosen by those with high or low status,  $t(85) = 0.17$ ,  $p = 0.867$ . There was also a main effect of evaluation  $F(1, 124) = 9.01$ ,  $p = 0.003$ , partial  $\eta^2 = 0.07$ . When participants assumed they were being evaluated they identified more threat related words ( $M = 1.75$ ,  $SD = 1.41$ ) than when they thought their performance was anonymous ( $M = 1.20$ ,  $SD = 0.98$ ).

Importantly, there was also an interaction between status and evaluation,  $F(2, 124) = 7.15$ ,  $p = 0.001$ , partial  $\eta^2 = 0.103$ . Planned contrasts showed that when they thought their drawings were being evaluated, middle status ( $M = 2.85$ ,  $SD = 1.35$ ) participants identified more threat of status loss related words than high ( $M = 1.27$ ,  $SD = 1.20$ ),  $t(40) = -4.01$ ,  $p < 0.001$  or low status participants ( $M = 1.23$ ,  $SD = 1.11$ ),  $t(40) = -4.27$ ,  $p < 0.001$ . There was no significant difference in threat of status loss related words identified by high and low status participants,  $t(42) = 0.13$ ,  $p = 0.897$ .

Conversely, when they thought their drawings were not being evaluated, the differences in the number of threat related words identified by middle status participants ( $M = 1.22$ ,  $SD = 1.04$ ) and high ( $M = 1.20$ ,  $SD = 1.00$ ),  $t(41) = -0.06$ ,  $p = 0.956$ , and low status participants ( $M = 1.17$ ,  $SD = 0.94$ ),  $t(44) = -0.15$ ,  $p = 0.882$  were not significant. There was also no significant difference in number of threat related words identified by high and low status participants,  $t(41) = 0.09$ ,  $p = 0.930$ .

### Mediation Analysis

To test the hypothesis that threat of status loss accounts for the relationship between status and evaluation on creativity, we conducted a mediation analysis. As established above, there was no main effect of status,  $\beta = 0.03$ ,  $t = 0.38$ ,  $p = 0.704$  or evaluation,  $\beta = 0.07$ ,  $t = 0.81$ ,  $p = 0.418$ . There was also an interaction between status and evaluation on creativity,  $\beta = 0.65$ ,  $t = 2.59$ ,  $p = 0.011$ , such that when individuals thought their drawings were being evaluated, middle status participants generated less creative drawings than high and low status participants but there was no significant difference in the creativity of the drawings generated by high, middle and low status individuals when they did not think their drawings were not being evaluated. There was also a significant relationship between threat of status loss and creativity,  $\beta = -0.44$ ,  $t = -5.48$ ,  $p < 0.001$ . The interaction between status and evaluation on creativity was no longer significant when threat of status loss was entered into the regression,  $\beta = 0.34$ ,  $t = 1.41$ ,  $p = 0.161$ . To further interpret these findings, we examined the conditional indirect effects at the levels of status. These effects showed that threat of status loss mediated the effect of evaluation on creativity in the evaluation condition,  $z = 1.95$ ,  $p = 0.035$  but not in the no evaluation condition,  $z = 1.38$ ,  $p = 0.166$ .

To assess whether threat of status loss mediated the interactive effects of status and evaluation on creativity, we utilized bootstrap estimates to generate bias-corrected 95% confidence intervals (CIs). Based on 1,000 samples, the 95% CI ranged between 0.19 and 0.98. If the CI does not include zero, the indirect effect is deemed significant, and mediation can be said to be present (Hayes, 2009; Preacher & Hayes, 2004).

## Discussion

Consistent with the pattern of results in Study 1, we found that when being evaluated, middle status individuals generated less creative drawings compared to high and low status individuals. When their drawings were not being evaluated, there was no difference in creativity for middle status, high status and low status individuals. Moreover, we measured and directly demonstrated the threat of status loss as the mechanism underlying the relationship between status and evaluation and creativity.

## Study 3

The results of Studies 1 and 2 suggest that individuals with middle status will be at a disadvantage on tasks that demand creative solutions. The consequences of middle status for task performance are not necessarily negative, however. It is possible that the threat of status loss might cause individuals with middle status to narrow their focus of attention, filter out irrelevant stimuli and think more convergently on only a subset of relevant information (Gable & Harmon-Jones, 2010). It is well-known that when individuals experience relatively intense negative emotions like anxiety (as opposed to low intensity negative emotions like sadness), their attentional focus narrows (Easterbrook, 1959; Wells & Matthews, 1994). Thus, we predict that the perceived threat of status loss may actually boost performance on tasks that demand narrowed rather than broadened attention and convergent rather than divergent thought. Our prediction that middle status should improve cognitive control is a logical corollary of our prediction that middle status should diminish creativity: Performance on both kinds of tasks is impacted by a narrowed focus of attention only in opposite ways.

We test this prediction using the Stroop Test (Stroop, 1935)—a task on which convergent thinking actually facilitates performance (Friedman & Förster, 2005; Nemeth, Mosier, & Chiles,

1992; Peterson & Nemeth, 1996). On this task, participants view the name of a color printed in ink of the same color (e.g. the word “Red” printed in red ink) or a different color (e.g. the word “Red” printed in yellow ink) and they are asked to name the color of ink. Stroop (1935) reported that participants took significantly more time to name the ink when the word did not match the color than when it did match the color. Performance on this task improves when participants are able to focus their attention more convergently on the color of ink while filtering out the word itself (Nemeth et al., 1992).

## **Method**

### **Participants and Design**

One hundred and forty-two participants (Mean age = 20.25; females = 45%) took part in the study which consisted of a 3 (status: high vs. middle vs. low) x 2 (evaluation: yes vs. no) design. Participants were undergraduate students who were given course credit for taking part in the study.

### **Procedure**

Status was manipulated using the same procedure as in Study 2. The next part of the study was presented to participants as a study of information processing and color perception. Participants were told that they would be presented with congruent words, where the color word and the color of the word would match, and incongruent words, where color word and the color of the word would be different. In both conditions, they were told that their task was to respond to the color of the word as quickly and accurately as they could. Participants were also either told that their performance on the task was not anonymous and at the end of the study the experimenter would reveal everyone's final score on the task to the entire group in the session, or they were told that their performance on the task was completely anonymous and at the end of

the study the experimenter would dismiss them without revealing their final score on the task. After the Stroop test, all participants completed the threat of status loss measure used in Study 2. Finally, participants completed a short survey which included questions related to demographic information and the manipulation checks.

## Results

### Manipulation checks

**Status.** Using the scale from Study 2 ( $\alpha = 0.80$ ), ANOVA revealed a main effect of status,  $F(2, 136) = 16.31, p < 0.001$ , partial Eta = 0.196. Participants randomly assigned to the President role felt higher status ( $M = 4.83, SD = 1.13$ ) than those assigned to the Middle Manager ( $M = 4.03, SD = 1.10$ ),  $t(84) = 3.48, p = 0.001$  or Assistant role ( $M = 3.51, SD = 1.13$ ),  $t(86) = -2.22, p = 0.029$ . Additionally, participants assigned to the Middle Manger role felt higher status than those assigned to the Assistant role,  $t(88) = 5.65, p < 0.001$ . There was no significant main effect of evaluation,  $F(1, 136) = 0.18, p = 0.671$ , partial Eta = 0.001, and no interaction between status and evaluation,  $F(2, 136) = 0.18, p = 0.838$ , partial Eta = 0.003.

Individuals' perceptions of power were also measured using the scale from Study 1,  $\alpha = 0.79$ . ANOVA revealed no main effect of status,  $F(2, 136) = 0.43, p = 0.654$ , evaluation,  $F(1, 136) = 0.88, p = 0.351$  or interaction between status and evaluation,  $F(2, 136) = 0.79, p = 0.456$ .

**Evaluation.** All but one participant reported information that was consistent with the condition to which they were randomly assigned. This individual was excluded from the final analyses, but including the data yielded the identical pattern of results.

**Stroop test.** In line with previous research, we computed the difference in time between the incongruent and congruent trials in the Stroop task and used this difference as an assessment of convergent thinking (DeWall, Baumeister, & Vohs, 2008; Richeson & Trawalter, 2005).<sup>1</sup> Moreover, consistent with the procedures detailed in Richeson and Shelton (2003) and Richeson and Trawalter (2005), all Stroop latencies greater than 2.5 standard deviations above the mean (i.e., times > 2,000 ms) were recoded as 2,000 ms. Lower scores reflect faster response times (RTs) and indicate better information processing.

Tests of between-subject effects yielded no main effect of status,  $F(2, 136) = 1.49$ ,  $p = 0.230$ , partial Eta = 0.02 or evaluation,  $F(2, 136) = 0.91$ ,  $p = 0.342$ , partial Eta = 0.007. However, as expected, the interaction between status and evaluation was significant,  $F(2, 136) = 3.15$ ,  $p = 0.046$ , partial Eta = 0.04. Planned contrasts showed that when performance was being evaluated, middle status participants' RTs ( $M = 270.63$ ,  $SD = 223.89$ ) were faster than those of high ( $M = 470.69$ ,  $SD = 234.59$ ),  $t(45) = 2.98$ ,  $p = 0.005$  and low status participants ( $M = 451.32$ ,  $SD = 280.40$ ),  $t(44) = -2.40$ ,  $p = 0.021$ . There was no significant difference in RTs of high and low status participants,  $t(47) = 0.26$ ,  $p = 0.794$ .

When performance was not being evaluated, the differences in the RTs of middle status participants ( $M = 463.73$ ,  $SD = 312.50$ ) and high ( $M = 437.09$ ,  $SD = 230.33$ ),  $t(46) = -0.34$ ,  $p = 0.738$ , and low status participants ( $M = 413.68$ ,  $SD = 224.91$ ),  $F(1, 45) = 0.63$ ,  $p = 0.533$ , were not significant. There was no significant difference in the RTs of high and low status participants,  $t(45) = 0.35$ ,  $p = 0.726$ .

**Threat of status loss.** An ANOVA on the composite threat of status loss measure revealed a main effect of status,  $F(2, 136) = 8.15$ ,  $p < 0.001$ . Middle status individuals ( $M = 1.67$ ,  $SD =$

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<sup>1</sup> Accuracy was not included in the final analysis, because the overall error rate was very low (<1%) and including incorrect trials did not impact the results.

1.74) identified more threat of status loss related words than high ( $M = 1.08$ ,  $SD = 1.04$ ),  $t(93) = -2.03$ ,  $p = 0.045$  or low status individuals ( $M = 0.79$ ,  $SD = 0.75$ ),  $t(86) = 3.20$ ,  $p = 0.002$ . There was no significant difference in threat of status loss related words chosen by those with high or low status,  $t(94) = 1.59$ ,  $p = 0.116$ . There was also a main effect of being evaluated,  $F(1, 136) = 7.18$ ,  $p = 0.008$ , such that when they thought they were being evaluated ( $M = 1.41$ ,  $SD = 1.53$ ) individuals identified more threat related words than when they thought they were not being evaluated ( $M = 0.94$ ,  $SD = 0.94$ ).

Importantly, there was also a significant interaction of status and evaluation,  $F(2, 136) = 12.57$ ,  $p = 0.001$ . Planned contrasts showed that when performance was being evaluated, middle status individuals ( $M = 2.64$ ,  $SD = 1.87$ ) identified more threat of status loss related words than high ( $M = 0.92$ ,  $SD = 1.04$ ),  $t(45) = -3.96$ ,  $p < 0.001$  or low status individuals ( $M = 0.79$ ,  $SD = 0.83$ ),  $t(44) = 4.39$ ,  $p = 0.001$ . There was no significant difference in threat of status loss related words identified by high and low status individuals,  $t(47) = 0.48$ ,  $p = 0.636$ .

When there was no evaluation, the differences on the threat related words identified by middle status individuals ( $M = 1.25$ ,  $SD = 1.03$ ) and high ( $M = 0.79$ ,  $SD = 1.02$ ),  $t(46) = 1.55$ ,  $p = 0.129$ , and low status individuals ( $M = 0.78$ ,  $SD = 0.67$ ),  $t(45) = 0.04$ ,  $p = 0.972$  were not significant. There was also no significant difference in threat related words identified by high and low status participants,  $t(45) = 1.83$ ,  $p = 0.080$ .

### **Mediation Analysis**

To test the hypothesis that threat of status loss accounts for the relationship between status and evaluation on convergent thinking, we conducted a mediation analysis. As established above, there was no main effect of status,  $\beta = 0.14$ ,  $t = 1.63$ ,  $p = 0.106$  or evaluation,  $\beta = 0.07$ ,  $t = 0.89$ ,  $p = 0.376$ . However, there was an interaction between status and evaluation on

convergent thinking,  $\beta = 0.20$ ,  $t = 2.29$ ,  $p = 0.024$ , such that when performance was being evaluated, middle status individuals' RTs were faster than the RTs of those with high and low status participants. However, when performance was not being evaluated, the differences in the RTs of individuals with middle, high and low status were not significant.

There was a significant relationship between threat of status loss and RT,  $\beta = -0.43$ ,  $t = -5.70$ ,  $p < 0.001$ . The interaction between status and evaluation on RT was no longer significant when threat of status loss was entered into the regression,  $\beta = -0.08$ ,  $t = -0.35$ ,  $p = 0.700$ . To further interpret these findings, we examined the conditional indirect effects at the levels of status. These effects showed that threat of status loss mediated the effect of evaluation on RT in the evaluation condition,  $z = 3.39$ ,  $p < 0.001$  but not in the no evaluation condition,  $z = -1.36$ ,  $p = 0.295$ .

To assess whether threat of status loss mediated the interactive effects of status and evaluation on RT, we utilized bootstrap estimates to generate bias-corrected 95% CIs (Hayes, 2009; Preacher & Hayes, 2004). Based on 1,000 samples, the 95% CI ranged between 16.93 and 59.98, excluding zero.

### **Discussion**

As predicted, the results demonstrate that individuals with middle status performed better on the Stroop task, which requires convergent thought, than individuals with high and low status when they thought they were being evaluated. Specifically, RTs for correctly identifying the color of the words were significantly shorter for individuals with middle status compared to those with high status and low status. Furthermore, threat of status loss was shown to mediate the relationship between status and evaluation and performance on the Stroop task.

These findings provide a deeper understanding of why middle status might stifle creativity. Although we have shown in Studies 1 and 2 that individuals with middle status will be at a disadvantage on tasks that demand creative solutions, occupying the middle status position in the social hierarchy may not inevitably lead to error as the early research assumed (Homans, 1961). In Study 3, we extended our previous findings by investigating a task whose performance might be boosted by threat of status loss. The anxiety experienced by middle status individuals may be a trade-off in terms of task performance. On the one hand, that the anxiety middle status individuals feel at the prospect of being evaluated negatively and potentially losing status may constrain their creativity by limiting their willingness to explore new solutions (Byron & Khazanchi, 2011; Camacho & Paulus, 1995). Yet, on the other hand, this focus may actually improve performance on tasks, like the Stroop test, that require convergent thought to complete quickly and accurately (Friedman & Förster, 2005; Peterson & Nemeth, 1996).

#### **Study 4**

Drawing on the classical research on middle status conformity, we have argued that middle status individuals should be less creative than individuals with high or low status. Would the same hold true for power? Study 4 builds upon the previous findings by examining the impact of being in the middle versus the top and bottom of the power hierarchy on creativity (Galinsky et al., 2008); previous research focused on high and low power, excluding the middle.

Though differences between power and status are rarely delineated, there is recent evidence to suggest that their consequences are not necessarily identical (Blader & Chen, 2012). An important difference between status and power is that, unlike status which is socially conferred, power is a property of the actor and is less susceptible to the subjective evaluations of

others (Blader & Chen, 2012). We expect that this key distinction between status and power would also lead to differential effects on creativity.

Power is typically defined as the extent to which an individual controls valued resources (Fiske, 2010; Magee & Galinsky, 2008). Therefore, unlike low status individuals who may be liberated by having nothing to lose (Blau, 1955; Hollander, 1960), low power individuals live in a world of risk and looming threats because they lack access to valued resources and therefore, are subject to the whims of others (Keltner et al., 2003; Magee & Galinsky, 2008). Gaining power should alleviate this vulnerability as increasing access to valued resources should also increase feelings of control (Fast, Gruenfeld, Sivanathan, & Galinsky, 2009; Kraus, Chen, & Keltner, 2011). Moreover, the more power an individual has, the less concerned and less aware of others' needs and opinions he will be (Galinsky, Magee, Inesi, & Gruenfeld, 2006; Lee-Chai, Chen, & Chartrand, 2001). The tendency of the powerful to disregard others' judgments makes them more resistant to conformity pressure and thus more adept at generating creative solutions (Galinsky et al., 2008).

Therefore, while both power and status should infuse individuals with confidence at the top of the hierarchy, we do not expect low power individuals to be as creative as those with high power (Galinsky et al., 2008) nor do we expect middle power actors to be more insecure and anxious than their low power counterparts given they have more resources at their disposal. This reasoning leads us to predict that the relationship between power and creativity will take a different form than we found for status. That is, unlike with status, we expect the relationship between power and creativity to be positive and linear.

Comparing status and power at the middle of the hierarchy is theoretically important because doing so sheds light on why middle *status* (as opposed to middle power) is uniquely

constraining. If power involves control over resources then being higher up in the power hierarchy should boost confidence. However, since status is rooted in the subjective evaluations of others, the threat of status loss should become more acute as in the middle of the status hierarchy versus in the high and low positions (any deviation risks criticism and rejection). Demonstrating these differential effects of status and power would further strengthen the argument that threat of loss underlies the relationship between status and creativity.

## **Method**

### **Participants and design**

One hundred and forty-eight participants (Mean age = 19.96; females = 47%) took part in the study which consisted of a 3(power: high vs. middle vs. low) x 2(evaluation: yes vs. no) between-participants design. Participants were undergraduate students who were given course credit for taking part in the study.

### **Procedure**

The procedures of the study were the same as Study 1 with one exception. We manipulated the psychological experience of power instead of status by using an adapted version of Galinsky and his colleagues' (2003) power prime. Participants recalled situations in which they had high, middle or low power. Specifically, participants read:

Power determines the extent to which people control the ability of another person or persons to get something they want, or are in a position to evaluate those individuals. Please recall a particular incident in which you were part of a group and in that group your power relative to others was "*HIGH*", that is at the top of the power hierarchy/ around the "*MIDDLE*" that is, neither the top nor the bottom of the power hierarchy/"*LOW*," that is at the bottom of the power hierarchy. Please describe this

situation in which you had high/middle/low power - what happened, how you felt, etc.

## Results

### Manipulation Checks

**Power.** Two coders, blind to both the experimental condition and hypotheses, categorized the priming essays as high, middle, low power or whether they could not determine which category the essay belonged to. The coders' classifications of the essays were 100% consistent with the conditions.

As an additional power manipulation check, participants reported to what extent they felt influential, independent, powerful, unimportant (reverse-coded), and subordinate (reverse-coded; Duguid & Goncalo, 2012). Endpoints were 1 (very little) and 9 (a great deal;  $\alpha = .87$ ). ANOVA revealed a significant main effect of power,  $F(2, 142) = 56.12, p < 0.001, \text{partial Eta} = 0.007$ . Participants in the high power condition ( $M = 5.69, SD = 0.55$ ) felt more powerful than those in the middle power ( $M = 4.06, SD = 0.43$ ),  $t(96) = 16.18, p < 0.001$ , and low power conditions ( $M = 2.35, SD = .53$ ),  $t(98) = 30.96, p < 0.001$ . Moreover, participants in the middle power condition felt more powerful than those in the low power condition,  $t(96) = 17.59, p < 0.001$ . There was no significant main effect of evaluation,  $F(1, 142) = 0.01, p = 0.927, \text{partial Eta} = 0.007$  or interaction between status and evaluation,  $F(2, 142) = 1.99, p = 0.140, \text{partial Eta} = 0.007$ .

In order to determine whether the power manipulation also influenced individuals' perceptions of status, we used the manipulation check for status used in Study 2,  $\alpha = 0.92$ . ANOVA revealed no main effect of power,  $F(2, 142) = 0.44, p = 0.644, \text{partial Eta} = 0.006$ , evaluation,  $F(1, 142) = 0.88, p = 0.350, \text{partial Eta} = 0.006$  or interaction between status and evaluation,  $F(2, 142) = 0.02, p = 0.977, \text{partial Eta} = 0.001$ .

### Creativity

**Number of ideas generated.** As expected, ANOVA revealed a significant main effect of power,  $F(2, 142) = 16.67, p < 0.001, \text{partial Eta} = 0.190$ . Participants in the high power condition ( $M = 16.76, SD = 9.05$ ) generated more ideas than those in the middle power ( $M = 13.24, SD = 5.36$ ),  $t(96) = 2.34, p = 0.022$  and low power conditions ( $M = 9.88, SD = 6.83$ ),  $t(97) = 4.27, p < 0.001$ . Participants in the middle power condition also generated more ideas than those in the low power condition,  $t(97) = 2.73, p = 0.008$ . There was also a significant main effect of evaluation,  $F(1, 142) = 62.21, p < 0.001, \text{partial Eta} = 0.305$ . When ideas were being evaluated, participants generated more ideas ( $M = 17.19, SD = 8.81$ ) than when ideas were not being evaluated ( $M = 9.45, SD = 3.60$ ). There was no significant interaction of power and evaluation,  $F(2, 142) = 2.90, p = 0.060, \text{partial Eta} = 0.039$ .

**Idea novelty.** ANOVA also revealed a significant main effect of power for idea novelty,  $F(2, 142) = 133.91, p < 0.001, \text{partial Eta} = 0.654$ . Participants in the high power condition ( $M = 3.22, SD = 0.55$ ) generated more novel ideas than those in the middle power ( $M = 2.87, SD = 0.55$ ),  $t(96) = 3.19, p = 0.002$  and low power conditions ( $M = 1.52, SD = 0.56$ ),  $t(97) = 15.37, p < 0.001$ . Participants in the middle power condition also generated more novel ideas than those in the low power condition,  $t(97) = 12.17, p < 0.001$ . In addition, there was a significant main effect of evaluation,  $F(1, 142) = 3.96, p = 0.048, \text{partial Eta} = 0.027$ . When ideas were being evaluated, participants generated more novel ideas ( $M = 2.62, SD = 0.91$ ) than when ideas were not being evaluated ( $M = 2.44, SD = 0.92$ ). However, there was no a significant interaction of power and evaluation,  $F(2, 142) = 2.90, p = 0.916, \text{partial Eta} = 0.001$ .

### Discussion

The results revealed that individuals who experienced high power generated more ideas and more novel ideas than those who experienced middle or low power. Likewise, individuals

who experienced middle power were more creative than those who experienced low power. Given that status is granted by others (Anderson & Kilduff, 2009; Fiske, 2010; Fiske & Berdahl, 2007), individuals with middle status who are concerned about their standing in the status hierarchy may be wary of going against convention for fear that they will be evaluated negatively and lose status. However, as individuals' power increases they become less concerned about and less constrained by others' opinions and judgments (Galinsky et al., 2006; Lee-Chai et al., 2001) and therefore, they will generate more creative ideas. Thus, whereas increasing power, even at the middle of the hierarchy, may help mitigate feelings of threat, moving from low to middle status seems to exacerbate feelings of threat. Building upon Studies 2 and 3, these results lend further support to the argument that the threat of status loss may be driving middle status insecurity.

### **Study 5**

We have theorized that middle status individuals are concerned with status loss and this threat makes individuals more focused but less creative. The results from our previous studies are consistent with this theoretical account—introducing the possibility of evaluation exacerbated perceived threat which, in turn, stifled the creativity of those with middle status.

One limitation of our previous studies is that we did not vary the stability of the status hierarchy. This limitation is important for two reasons. First, the stability of the status hierarchy plays an important role in our theorizing because we suggest that the threat of status loss may occur when individuals can possibly move further down the hierarchy (i.e. when the hierarchy is potentially unstable rather than fixed). Second, in the real world status hierarchies may vary in the extent to which they are stable or unstable. Thus it is important to vary this dimension of status to specify more precisely the scope conditions of our theory. In Study 5, we manipulated

the threat of status loss directly by systematically varying whether the hierarchy is stable (you can never move down) or unstable (you can move down).

The stability of a status hierarchy may play a role in the behaviors of social actors who are in high, middle and low positions. Tajfel and Turner (1979, 1986) defined the stability of status as the extent to which one perceives that an alternative status position is likely to be realized. In stable hierarchies, individuals may assume that their current status rank is constant. Whereas, those in unstable hierarchies may believe that changing status rank is possible.

Although most of the literature on status does not take into account the stability of the hierarchy but rather conceptualizes status as a static construct, in some instances individuals may perceive that the status hierarchy is stable and unlikely to be altered whereas in other instances they may perceive that there is the possibility to change their status position (Jordan, Sivanathan, & Galinsky, 2011). There is an influential body of literature which shows that individuals' beliefs about the stability of the status structure affects individuals' perception, attitudes, decisions and behaviors (e.g., Ellemers, Wilke, & van Knippenberg, 1993).

Given that we found that middle status individuals were more susceptible to the threat of status loss when being evaluated than high and low status individuals, we would expect those with middle status to be much more conservative in the number and novelty of ideas they express when the status hierarchy is unstable and there is the possibility of moving down in rank. We suggest that high status individuals may be more confident in their social acceptance and hence, assume they have more leeway to take risk. Low status individuals, on the other hand, may think they have less to lose since moving from "low" to "lower" may not represent as meaningful or significant a change in status position as moving from a middle status position to a low status position (Phillips & Zuckerman 2001). Hence, when the status hierarchy is unstable, individuals

with middle status may be less likely to suggest creative solutions than individuals at the top or the bottom of the status hierarchy. Conversely, when the status hierarchy is stable, the middle status may not be stifled by the threat of status loss. We test these predictions in the following study.

## **Method**

### **Participants and Design**

One hundred and eighty-seven participants (Mean age = 19.06; females = 45.3%) took part in the study which consisted of a 3 (status: high vs. middle vs. low) x 2 (status stability: stable vs. unstable) between-participants design. Participants were undergraduate students who were paid \$10 for taking part in the study.

### **Procedure**

The cover story and status manipulation were the same as those used in Study 2. In order to manipulate the stability of the status hierarchy, after the status manipulation participants were either told that (*regardless of/depending on*) their performance in the upcoming task they could (*never/always*) move down in the status hierarchy. The upcoming task was the same creativity task used in Study 2. At the end of the study, participants completed a short survey which included questions related to demographic information and the manipulation checks.

## **Results**

### **Manipulation Checks**

**Status.** ANOVA revealed a main effect of status,  $F(2, 181) = 47.49, p < 0.001$ , partial Eta = 0.344. Participants randomly assigned to the President role felt higher status ( $M = 4.99, SD = 1.30$ ) than those assigned to the Middle Manager ( $M = 4.00, SD = 0.98$ ),  $t(123) = -4.79, p < 0.001$  or Assistant role ( $M = 2.93, SD = 1.22$ ),  $t(122) = -9.08, p < 0.001$ . Additionally, Middle Managers felt higher status than Assistants,  $t(123) = -5.40, p < 0.001$ . There was no significant main effect of status stability,  $F(2, 181) = 0.45, p = 0.503$ , partial Eta = 0.002 nor an interaction between status and status stability,  $F(2, 181) = 1.31, p = 0.272$ , partial Eta = 0.014. For power ( $\alpha = 0.91$ ). ANOVA revealed no main effect of status,  $F(2, 181) = 0.15, p = 0.861$ , partial Eta = 0.002 status stability,  $F(1, 181) = 0.108, p = 0.299$ , partial Eta = 0.006, or interaction between status and status stability,  $F(2, 181) = 0.08, p = 0.926$ , partial Eta = 0.001.

**Status stability.** All participants reported information that was consistent with the status stability condition to which they were randomly assigned.

### **Creativity**

**Number of ideas generated.** ANOVA revealed no significant main effect of status,  $F(2, 181) = 2.35, p = 0.099$ , partial Eta = 0.025 or status stability,  $F(1, 181) = 0.39, p = 0.531$ , partial Eta = 0.002. However, there was a significant interaction between status and status stability,  $F(2, 181) = 3.29, p = 0.039$ , partial Eta = 0.05. Planned contrasts showed that when the status hierarchy was unstable, middle status participants generated fewer ideas ( $M = 14.29, SD = 9.16$ ) than high status participants ( $M = 22.88, SD = 13.55$ ),  $t(61) = 2.94, p = 0.005$ , and low status participants ( $M = 22.83, SD = 13.07$ ),  $t(59) = -2.96, p = 0.004$ . There was no significant difference in ideas generated by high and low status participants,  $t(60) = 0.01, p = 0.990$ .

In contrast, when the status hierarchy was stable, there was no significant difference in number of ideas generated by middle status participants ( $M = 19.41, SD = 10.12$ ) and high ( $M =$

18.33,  $SD = 10.51$ ),  $t(60) = -0.41$ ,  $p = 0.684$ , and low status participants ( $M = 19.03$ ,  $SD = 13.11$ ),  $t(62) = 0.13$ ,  $p = 0.898$ . There was also no significant difference in number of ideas generated by high and low status participants,  $t(60) = -0.23$ ,  $p = 0.819$ .

**Idea novelty.** ANOVA showed a significant main effect of status,  $F(2, 181) = 31.35$ ,  $p = 0.001$ , partial  $\eta^2 = 0.26$ , such that middle status participants generated less novel ideas ( $M = 1.80$ ,  $SD = 0.77$ ) than high status participants ( $M = 2.42$ ,  $SD = 0.57$ ),  $t(123) = 5.11$ ,  $p = 0.001$ , and low status participants ( $M = 2.49$ ,  $SD = 0.62$ ),  $t(123) = -5.52$ ,  $p = 0.001$ . However, the ideas generated by high and low status participants did not differ significantly in terms of idea novelty,  $t(122) = -0.68$ ,  $p = 0.501$ . There was also a main effect of status stability,  $F(1, 181) = 27.28$ ,  $p = 0.001$ , partial  $\eta^2 = 0.13$ . When the status hierarchy was unstable ( $M = 2.03$ ,  $SD = 0.86$ ), participants generated less novel ideas than when the status hierarchy was stable ( $M = 2.45$ ,  $SD = 0.48$ ),  $t(185) = -4.10$ ,  $p = 0.001$ .

These main effects were subsumed by a significant interaction between status and status stability,  $F(2, 181) = 30.01$ ,  $p = 0.001$ , partial  $\eta^2 = 0.25$ . Planned contrasts showed that when the status hierarchy was unstable, middle status participants generated less novel ideas ( $M = 1.15$ ,  $SD = 0.25$ ) than high status participants ( $M = 2.43$ ,  $SD = 0.65$ ),  $t(61) = 10.17$ ,  $p < 0.001$ , and low status participants ( $M = 2.51$ ,  $SD = 0.78$ ),  $t(59) = -9.29$ ,  $p < 0.001$ . There was no significant difference in idea novelty for high and low status participants,  $t(60) = 0.46$ ,  $p = 0.649$ .

When the status hierarchy was stable, there was no significant difference in idea novelty for middle status participants ( $M = 2.44$ ,  $SD = 0.53$ ) and high ( $M = 2.42$ ,  $SD = 0.47$ ),  $t(60) = -0.15$ ,  $p = 0.879$ , and low status participants ( $M = 2.48$ ,  $SD = 0.44$ ),  $t(62) = 0.35$ ,  $p = 0.729$ . There was also no significant difference in idea novelty for high and low status participants,  $t(60) = -0.54$ ,  $p = 0.591$ .

## **Discussion**

The results of Study 5 showed that when individuals were faced with the possibility of moving farther down the status hierarchy, middle status individuals generated fewer ideas compared to high and low status individuals. However, when the hierarchy was stable, there was no difference in the number of ideas generated by those with middle status, high status and low status. Thus, the results of all five studies converge in that they implicate the threat of status loss as the mechanism explaining the consequences of middle status for creativity whether the threat of status loss was measured or manipulated directly.

## **General Discussion**

Across five studies, we specified the threat of status loss as the underlying mechanism impacting middle status individuals' performance on a wide range of tasks. Using different manipulations of status and different outcome measures, we found that when being evaluated, middle status individuals were less creative than those with high and low status. We also found direct evidence that threat of status loss explains why those with middle status are less creative than individuals with high or low status. In other words, those with middle status experienced more threat of status loss when being evaluated which, in turn, negatively influenced their performance on creative tasks. Our results also demonstrate that the consequences of middle status are not always negative. When being evaluated, having middle status facilitated the ability to quickly and efficiently filter out irrelevant information and therefore boosted performance on tasks that require focus as opposed to creative tasks that demand cognitive flexibility. Thus, the threat of status loss significantly deepens our understanding of the psychological process behind the consequences of middle status. Indeed, our predictions regarding middle status and cognitive control would not necessarily have been predicted from a conformity perspective. Mindlessly

following the majority point of view does not require careful focus. By specifying the mechanism clearly, we hope to set the stage for future research linking middle status to a much broader set of relevant outcomes than the traditional focus on conformity.

Given that status is socially conferred whereas power is a property of the actor and less susceptible to the subjective evaluations of others (Blader & Chen, 2012), by demonstrating that the relationship between power and creativity was positive and linear, we provide additional evidence that the threat of status loss underlies the relationship between middle status and creativity. Finally, by manipulating status loss directly, we showed that middle status individuals generated fewer ideas when they could moving down the status hierarchy with compared to high and low status individuals but not when the status hierarchy was stable. Taken together, the results support our general contention that having middle status is a unique psychological experience with many potential implications, both theoretical and societal.

### **Limitations and Future Directions**

Though strongly supporting our hypotheses, these studies have limitations that suggest important avenues for future research. For instance, given our focus on experimentally manipulating social status categories, we were unable to examine status effects of those who have high, middle and low status in ongoing groups where members expect to interact over a much longer period of time. It is quite likely that the effects of status would become more complicated in real social situations in which status is actually earned (Blau, 1955; Bartos, 1958). In these contexts, motives other than those directly related to status also operate, which may influence our findings. For example, middle status individuals' concerns related to their group's performance may serve as a counterbalance to the effects of threat of status loss on their performance of a creative task. On the other hand, the consequences of middle status may be

accentuated in a real world setting where performance evaluations may be especially threatening in light of the real intangible and potentially tangible awards associated with social standing.

Furthermore, though power and status are distinct constructs (Emerson, 1962; Fiske, 2010; Goldhamer & Shils, 1939; Hall et al., 2005; Henrich & Gil-White, 2001; Ridgeway & Walker, 1995; Sachdev & Bourhis, 1985) in real world settings it is likely that power and status will be highly correlated (Magee & Galinsky, 2008; McGuire, Brammer, & Raleigh, 1986). Although our findings demonstrate that power and status operate differently in the middle of the hierarchy, field research studies should examine the nuanced relationship between power and status and how it influences the performance of those who actually occupy the higher levels of the social hierarchy.

In contrast to the positive illusions perspective, which shows that people have distorted, unrealistically positive self-perceptions (e.g., Greenwald, 1980; Taylor & Brown, 1988), researchers have shown that individuals avoid status self-enhancement and are accurate in their perceptions of their status (Anderson et al., 2006). Therefore, individuals tend to be aware of when they are at the top, middle and bottom of a social hierarchy. This knowledge of one's status position has been shown to have implications for individuals' perception, attitudes and behaviors (Anderson, Kraus, Galinsky & Keltner, 2013; Brauer, 2001; Bunderson, 2003). Yet, it is possible that these subjective perceptions can vary and perhaps not always map on to more objective assessments of status relative to others. Subsequent studies should examine contexts where individuals' awareness of their position in the status hierarchy diverges from their actual position.

In addition, future research might investigate perceptions of status distance. Status distance is the differences in status between a focal person and another individual (Blau, 1977;

McPherson & Smith-Lovin, 1987). Individuals with middle status who perceive that the status difference between them and those with low status is great may be less conservative than middle status individuals who assume there is not much status distance between them and those who have lower status. Most of the work on social hierarchies does not account for individuals' perceptions of status distance but this construct may have significant implications for theorizing in this area.

Finally, we theorized that high status individuals are more willing to risk the expression of creative ideas, even though they expect their ideas to be criticized, because they are secure in their status position. But future research might also investigate the possibility that high status individuals might also be more confident in the value of their ideas, opinions and suggestions. In other words, it is possible that high status individuals might resemble narcissists—their ideas are not objectively more creative but they think they are and their confidence makes them more persuasive to the rest of the group (Goncalo, Flynn & Kim, 2010).

### **Theoretical Implications**

Our findings move research on status forward in a number of important ways. First, our results are consistent with propositions related to middle status conformity. However, we tie together and extend the early findings by identifying the psychological mechanism that underlies this phenomenon: namely, threat of status loss. We expect that middle status conformity should be strongest when there is the potential for evaluation because middle status individuals will experience threat of status loss most acutely in such situations. Understanding the relationship between middle status and threat of status loss may provide a theoretical framework within which future research can begin to investigate a much broader array of potential outcomes other than conformity.

Our results connecting middle status to problem solving and task performance may be a starting point for examining outcomes in many other domains. For example, cognitive flexibility is required to realize higher joint benefits on integrative bargaining tasks (Carnevale & Isen, 1986) in which case individuals with middle status may be at a clear disadvantage, particularly if they are feeling threatened. The ability to generate a wide range of alternative solutions is also important in other kinds of collaborations such as group brainstorming (Paulus & Yang, 2000) and group decision making (Stasser & Titus, 1985). If individuals with middle status are threatened at the prospect of being evaluated then they may not be willing to share their ideas in group brainstorming sessions (Camacho & Paulus, 1995). Those with middle status may also be less willing to share unique or divergent information when information is unshared among others because it takes confidence to share information that may conflict with a group's preferred course of action, contradicts evidence held by other group members or is so unique that there is no one in the group to verify its accuracy (Budescu & Rantilla, 2000).

These results are also potentially relevant to other settings, including organizations in which status hierarchies are likely to arise and include a substantial number of people in the middle (Magee & Galinsky, 2008). Our two key findings, that middle status stifles creativity but increases cognitive control, are highly resonant with widespread stereotypes about middle managers in the business community. Middle managers are often cast as stubborn defenders of the status quo, too unimaginative to generate new approaches and likely to sabotage attempts at change (Huy, 2001). By understanding the psychology behind this phenomenon, it may be possible either to realize more creative solutions from the middle of the hierarchy or to assign individuals in the middle more appropriate tasks such as those that require the careful and practical implementation of creative ideas that have emerged elsewhere.

Our results also point to a potential advantage of middle status in light of recent research on dishonesty (Vincent, Emich, & Goncalo, 2012). Positive affect was found to cause dishonest behavior because it permits moral disengagement by providing the cognitive flexibility to rationalize dishonest acts (e.g., I was just borrowing not stealing; Vincent et al., 2012). Interestingly, the fact that individuals with middle status seem to be less cognitively flexible and more focused may also make them less likely to morally disengage and consequently less prone to unethical behavior, such as theft. Middle status individuals are often painted in an unflattering light: as insecure and unimaginative conformists (Huy, 2001). But, they may also be more reliable, more focused, and more honest than their counterparts at the top and bottom of the hierarchy.

### **Conclusion**

Although extant social psychological research has broadened our understanding of the antecedents and consequences of having high and low social status, there has been little attention paid to the middle of the status hierarchy. Our research demonstrates that this is a unique segment of the hierarchy and we hope our research stimulates greater research on middle status individuals' experiences.

In 2011 the Oxford English Dictionary chose "Squeezed Middle" as the phrase of the year. The choice reflects societal concerns about the middle class as they are constrained by hiring freezes, inflation and cuts in public spending. In addition to the economic problems facing the middle class, there may also be psychological implications to consider as well. As those in the middle face the prospect of status loss, they may feel too threatened to think of creative solutions to the problems that face them. Rather than question the status quo, the squeezed middle may be more concerned with following the rules at the cost of creativity and

innovation.

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