

POWER AND DECISION MAKING

THE RELATIONSHIP BETWEEN POWER AND DECISION MAKING

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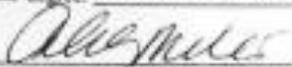
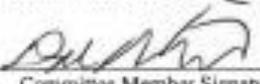
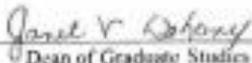
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Abstract

Perceived power affects individual action across all social settings. Higher power individuals have a greater tendency to influence others and make more confident and risky decisions. This study investigates how un-manipulated, generalized power affects decision-making. Participants completed the same decision-making task twice, individually and then in a team. Higher power individuals did not make more confident decisions than lower power individuals. Through comparing participant's answers from both times the task was completed, it was determined that power did not affect the amount of influence an individual had on team answers. Oppositely, the higher the average power on a team, the less risky shift that occurred. Findings may have resulted from a lack of task knowledge, or that team power hierarchies were not yet formed. Less powerful teams may have engaged in more risky shift because of their acceptance of uncertainty while making decisions.

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The Relationship Between Power and Decision Making

Power is defined as the relative capacity of an individual to influence others (Galinsky, Magee, Inesi, & Gruenfeld, 2006; Keltner, Gruenfeld, & Anderson, 2003; French & Raven, 1959). Power pervades all social relationships (Anderson, John, & Keltner, 2012). Described as a central motivating force of individual action, power influences an individual's behavior in social settings (Briñol, Petty, Valle, Rucker, & Becerra, 2007; Keltner et al., 2003; Sturm & Antonakis, 2015). This paper will view power in the interpersonal sense, where individuals form general perceptions about their own power relative to others. This perception of personal power is irrespective of one's actual power (as might be afforded by hierarchical rank/position) in the given context. Although there has been considerable research on how this interpersonal type of power impacts behavior at the individual level (e.g. self-esteem enhancement, lack dependence on others, perception of others) (Anderson et al., 2012; Catterson, Naumann & John, 2015; Mooijman, van Dijk, Ellemers, & van Dijk, 2015; Wang, 2015), there are few studies on how the personal sense of power determines an individual's actions in team settings.

Existing studies of power at the team level manipulated sense of power prior to the participants engaging in team activities by assigning leader and subordinate roles or having participants write why they should feel entitled (Anderson et al., 2012; Kuehn, Chen, & Gordon, 2015; Stamkou, van Kleef, Fischer & Kret, 2016; Zitek & Vincent, 2015). However, there are no known studies that treat sense of power as an individual difference one brings into team settings without its manipulation. The current study did not seek to manipulate power to ensure a more natural power interaction between team

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members. Additionally, Anderson et al. (2012) demonstrated that an individual's perceived power is stable across contexts. That is to say that an individual's feelings of power tend to remain consistent across different situations, whether interacting with strangers, their family and friends, or significant other.

Effect of Power on Individuals

Higher perceived personal power has been linked to a more assertive approach to the world, meaning that those individuals act more forceful and dominating than those with lower perceived power (Anderson et al., 2012). Individuals who have the personality trait dominance achieve higher levels of power and influence, irrespective of the situation. Higher self-esteem and more self-assured tendencies also are correlated with higher perceived power (Keltner et al., 2003). This higher self-esteem and assertiveness could lead the high-power individual to make more confident decisions than their lower power counterparts because they do not want to seem unsure.

Fiske (1993) and Lee and Schnall (2014) found that by measuring power as amount of control over social outcomes, powerful people feel less constrained and more confident in their environment than the less powerful, who are characterized as living in uncertainty. The powerful are more likely to make overconfident and risky decisions because of their heightened confidence in their own ability to complete tasks (Macenczak, Campbell, Henley, & Campbell, 2015). Those with more perceived power engage in riskier behavior because they pay more attention to the potential positive outcomes of their actions, rather than the potential downfalls (Anderson & Galinsky, 2006). Additionally, power has been shown to lead to an elevated sense of freedom and more self-expression (Keltner et al., 2003). Therefore, the more power an individual feels

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they possess, the more accurately they feel they can perceive their environment and the more freely they believe they can behave.

Briñol et al. (2007) found through manipulating power that as power increases, people become more confident in their individual thoughts and perspectives, and the more inspiration they may draw from their own experiences rather than the experiences of others (van Kleef, Oveis, Homan, van der Löwe, & Keltner, 2015). Powerful individuals may place more emphasis on their own ideas rather than others because of their self-assuredness and influence drawn from their own knowledge and experiences. Additionally, while thinking and generating reactions, the powerful place more significance on their own experiences and feelings (Briñol et al., 2007; Weick & Guinote, 2008).

Fast, Sivanathan, Mayer, & Galinsky (2012) found that through priming individuals to experience high power, that those with high power place more weight on their own experiences because they believe they are more unique and intelligent than they are, which can lead to overconfidence. Overprecision affects sound decision making that usually relies on one's intelligence, and instead can lead to overconfidence and inaccurate thoughts. Overconfidence can manifest in overestimation, an inflated sense of one's own abilities, performance, and/or chance of success (Moore & Healy, 2008). Overconfidence can also be observed as overprecision, which is an inflated sense of accuracy (Macenczak et al., 2016). Therefore, it is expected that individuals with a higher sense of personal power will be overly confident in their decisions.

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Impact of Individual Power on Team Decisions

Perceived power does not just affect the individual's confidence and decision making while working alone, but also similarly while working on a team. It has been found that those with higher power are more likely to behave in a way that is consistent with their internal thoughts rather than the constraints or expectations of the given situation (Galinsky, Magee, Inesi, & Gruenfeld, 2008; Guinote, 2007a; b; Keltner et al., 2003). Powerful people also trust others less (Mooijman et al., 2015). Because of this distrust and doubt in others' ability to participate meaningfully, those with more personal power depend less on others, and instead advocate for their own interests (Anderson & Galinsky, 2006; Mooijman et al., 2015). It can be said, then, that those with high power are unlikely to conform to others' ideas in a team setting unless they fit their own thoughts and ideas.

When working in teams, powerful people tend to exert more influence over others. Not only do the powerful feel less compelled to conform to others' ideas, they may attempt to sway the team by changing others' thoughts to be more similar to their own. In team settings, power can be seen as the ability to alter others' emotional states and decisions (Briñol et al., 2007). A low sense of power individual will feel that they have less control and less say over decisions made in the team. The capacity to influence others does not lie with low power individuals because they are more prone to being introverted and timid (Anderson et al., 2012). While a higher power individual is more apt to inject their ideas into the team and work to get them adopted into consensus, a lower power individual is less inclined to introduce their own, unique ideas.

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It has been shown that individuals with power influence others, but also that power psychologically shields people from being influenced by others (Galinsky et al., 2008). Those with high power are less likely to consider others' perspectives, effectively ignoring disconfirming information and instead continuing the belief that they have more knowledge than others (Galinsky, Magee, Inesi, & Gruenfeld, 2006; Macenczak et al., 2016). Individuals with lower power, on the other hand, can more easily account for different types of information that may not be aligned with their own internal thoughts. High power individuals may change their behavior to fit the situation, but only if the changes also stay consistent with their ideas (Guinote, 2007c). High power individuals thus are more likely to stay in power even when their ideas are not in the best interest of the team. This is because of their ability to rule out others' ideas while endorsing their own ideas simultaneously. Then, those with lower power are less inclined to offer their own ideas, even if they feel their ideas are better than ideas already introduced to the team. Additionally, the powerful have a tendency to discount advice from others and rely on their own perspectives while disbelieving that others have knowledge they do not (Galinsky et al., 2006; See, Morrison, Rothman, & Soll, 2011). The team is then more likely to settle on the high-power individuals' idea or thought after team deliberation. Thus, an individual with more power is more likely to influence team decisions.

Risky Decision Making in Powerful Teams

Anderson and Galinsky (2006) found that those with higher power made riskier decisions than those with lower power because they felt they had a higher chance of success. Riskier decisions are more likely to be made by powerful people since they are more optimistic in their chances of being correct due to success in the past or simply as a

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result of how powerful they feel (Anderson & Galinsky, 2006). For example, risky behavior can be thought of as making a gamble, where high power individuals are more confident they will have a positive outcome and are willing to test their luck. This risky behavior shown at the individual level can also be seen in similar behaviors at the team level (Zhang & Casari, 2012). Team decisions tend to be riskier those same decisions made by individuals (Bayissa, Smits, & Ruben, 2017). Generally, individuals are more likely to engage in risky shift merely because of the physical presence of others (Chou & Nordgren, 2017). This change in decision making may be due to because of the psychological security that comes from making decisions while working on a team, given that the team is approaching agreement (Chou & Nordgren, 2017).

Individuals who tend to make risky decisions on their own will be likely to shift toward even riskier decisions when working in a team. Teams' trait distributions (such as risk-taking tendencies) are not simply amalgamations of the traits of the individuals in the team, where traits are combined or balanced out with others', but instead are exaggerations of individuals' trait distributions (Ambrus, Greiner, & Pathak, 2015; Roux & Sobel, 2015). That is, the power of an individual who already has higher power while working individually will escalate when working on a team. Even an individual on the team who is relatively more cautious while working on their own will shift toward riskier behavior in the team (Bayissa et al., 2017). Thus, examining individual differences such as power that may determine risky shift while working on a team is important to understanding team decisions. For these reasons, teams are more likely to make risky decisions than individuals, and risky shift is expected to increase as the team's composition of power increases.

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This paper has discussed how having more perceived power can lead to actions and results that may be seen as negative. It should be noted that being more powerful and therefore more inclined to be optimistic and take risks, more likely to take action and less vulnerable to the stakes of a situation are not always unfavorable characteristics (Anderson & Galinsky, 2006; Galinsky, Gruenfeld, & Magee, 2003; Galinsky et al., 2008). These traits have the capacity to encourage the powerful individual and their teams to make more efficient decisions, also leading to positive and stress-free experiences.

The goal of the present study is to determine the effects that a generalized sense of power has on individual behaviors, assessed both in independent and team context. Individual participants will estimate several unknown values (e.g., the length of the Nile River) by producing a confidence interval that they are 90% sure contains the correct answers (e.g., 1,000-5,000 miles), similar to an overconfidence task (Teigen & Jorgensen, 2005). Then, these individuals will complete the same task in a team, thereby allowing for comparison between individual and team performance. The following hypotheses were made regarding the effect of power on individual and team decision making:

Hypothesis 1: Individuals with more perceived power will be more confident in their decisions.

Hypothesis 2: The more perceived power an individual has, the more influence they will have on team decisions.

Hypothesis 3a: Teams will exhibit a risky shift, such that teams will make riskier decisions than individuals.

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Hypothesis 3b: The magnitude of the risky shift will depend on perceived power, such that teams consisting of more powerful individuals will show a larger risky shift.

Method

Participants

Participants were 187 undergraduate students who completed the study in teams of either two ($n = 16$), three ($n = 17$), or four ($n = 26$) individuals. The goal of the study was to exclusively study teams, however not everyone who signed up to participate came to the laboratory. Only the three and four-person teams were used for Hypotheses 2 and 3. To stay consistent with past research, two-person teams were not used since two people working together is considered a dyad, the dynamics of which are not always analogous to a team. However, all participants completed both the individual and team parts of the study. Participants provided demographic information including age, race, sex, class rank, GPA, work experience, and team experience. The sample for Hypothesis 1 was 52% college freshmen and 56% Caucasian. The subsample used for Hypotheses 2 and 3 was 54% college freshmen and 57% Caucasian. The average age for the sample for all hypotheses was 19 years old and 75% female. 45.2% of the all participants currently held a job, and those who do hold a job worked 16.39 hours a week on average. Team experience information was also collected on how many class project teams (i.e. teams formed to complete tasks for a class) ($M = 7.01$, $SD = 10.09$), sports/athletic teams (e.g. collegiate sports, intramurals, recreational) ($M = 2.57$, $SD = 7.95$), work teams (i.e., teams formed at work) ($M = 2.59$, $SD = 7.80$), and other teams (e.g. club subcommittees) ($M = 2.02$, $SD = 4.95$) they have been a member of since graduating high school.

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Procedure

Students were recruited through the psychology department's online study posting system and participated in exchange for course credit. It should be noted that this study used archival data from a larger research study. Other tasks and measures were used that are not included in the current study.

Phase 1. Upon sign-up, participants received an email with the individual differences survey link to complete a demographic questionnaire and the Sense of Power measure.

Phase 2. Upon arrival at the laboratory, participants were put into teams of two to four individuals with others who signed up to participate during that time. Next, each individual completed a decision-making task which asked them to provide numeric ranges for ten numerical obscure knowledge questions. Then, they completed the same task as a team. The average team ($n = 56$) time to complete this task was 10.88 minutes, $SD = 3.93$. Individual time to complete was not recorded. Finally, each individual responded to post-task questions, which were not analyzed for the current study.

Materials

Decision-making task. This task required providing ranges of values for 10 specific numerical obscure knowledge questions. Instructions were to provide a low and high estimate for an interval within which they were 90% confident that the true value fell (Teigen & Jorgensen, 2005). For example, one item asked, "In what year was the zipper patented?" and a sample answer is low value- 1820, high value- 1900 (correct answer is 1851). Questions varied by metric (e.g. weight in pounds, time in months) and subject. Questions were tested using pilot teams. The final 10 items were selected based

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on variety in subject, metric, and based on which questions pilot teams most often got correct (See Appendix A). Unlimited time was allowed for this task. The task was first completed individually and then as a team, with the same 10 items used both times.

Individuals had to come to an agreement on answers for the team task. Individuals answered an average of 2.38 questions correctly ($SD = 1.56$), and teams answered an average of 3.35 questions correctly ($SD = 1.59$) (correctness determined by the selected range of answers containing the true answer).

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Table 1. Descriptive statistics for task questions

Question #, Metric	<u>Individuals (N = 186)</u>			<u>Teams (N = 43)</u>		
	Min.	Max.	Average width	Min.	Max.	Average width
1. Year	1	2000	179.41	900	1700	295.35
2. Miles	1	900,000	7,580.81	20	100,000	2,784.45
3. Pounds	10	1B	5.47M	1,000	60M	603,578.06
4. Countries	0	1,000	25.09	3	100	21.62
5. Year	1100	2010	95.71	1600	2000	94.29
6. Feet	3	600,000	15,301.96	100	100,000	12,408.39
7. Words	20	250M	1.37M	100	100,000	4,620.32
8. Year	1000	2017	42.01	1480	2005	51.97
9. Months	1	100M	511,092.22	2	3,000	92.88
10. People	2	4,000	126.82	20	800	154.9

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Demographic questionnaire. In Phase 1, participants reported their age, race, sex, class rank, GPA, work experience, and team experience.

Sense of Power scale. This eight-item measure from Anderson et al. (2012) had a reliability estimate of $\alpha = .78$, and used a 7-point scale (strongly disagree to agree strongly) (See Appendix B). Participants were asked about their generalized feelings of power in relationships with others, such as whether they feel they can get others to listen to them, whether they can get their way, and if their ideas are usually accepted or ignored. The total range of the scale was 8 (low)- 56 (high). The range of individual scores was 18-46 ($M = 31.09$, $SD = 4.03$).

Team power. The power for each team was calculated by averaging the Sense of Power scale scores for each individual who comprises that team. The range of the team power scores was 25.67-37.00 ($M = 31.02$, $SD = 2.44$).

Dependent Measures

Individual confidence. Confidence was defined as the width of the confidence interval provided for each question, such that narrower intervals represented greater confidence in one's answer. To measure confidence, the width of the intervals across all participants for each of the ten task questions was standardized. Then, for each individual, their ten standardized interval scores were averaged to obtain a single confidence score for that individual.

Influence. Influence was defined as the absolute value of the difference between the midpoint of the individual's confidence interval and the midpoint of their team's confidence interval for each task question. For example, if an individual's interval was 1-7, the midpoint of their answer was 4, and if that individual's team's interval for the same

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question was 3-9, the midpoint was 6. The absolute value of the difference between the answers is 2. The smaller the difference between the midpoints, the more influence an individual was said to have had on their team.

After calculating ten influence scores for each individual (i.e., one for each item), the absolute values were then standardized using z-scores. Those z-scores were averaged for each individual across all task questions to obtain a single influence score.

Team riskiness. Individual and team answers were again compared to analyze if teams made riskier decisions than individuals by producing narrower confidence intervals. A narrower confidence interval is regarded as riskier because there is less of a chance that the range includes the correct answer. This was computed by calculating the average standardized individual width of the participants who comprise each team, and then comparing that with their corresponding team's average standardized width across each of the ten questions.

Risky shift. To measure risky shift, the difference between the standardized width of the team's intervals (averaged across all ten items) and the standardized interval width of the individuals who comprise that team (averaged across items and across individuals) was calculated. A score above zero indicates that risky shift has occurred, while a score at or below zero indicates that risky shift has not occurred.

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Table 2. Descriptive statistics for dependent measures

Dependent Measure*	Mean	SD	Min.	Max.
Individual Confidence	0.0005	0.38	-.92	2.10
Influence	0	0.34	-.35	1.81
Team Individual Average Confidence	0.039	0.39	-.34	0.48
Team Confidence	0	0.39	-.59	0.96
Risk Shift	-0.008	0.40	-1.16	0.94

*These numbers were standardized using z-scores.

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Results

Contrary to Hypothesis 1, a simple linear regression found that perceived power did not predict of individual confidence, $t(184) = -0.23, p = .817$. This means that higher power individuals did not produce narrower confidence intervals on the decision-making task.

A simple linear regression was also conducted for Hypothesis 2, which showed that perceived power did not predict an individual's influence on team decisions, $t(154) = -0.40, p = .693$. Higher power team members did not influence the team to choose intervals that were more similar to their individual task responses.

To test Hypothesis 3a, a dependent *t*-test indicated that teams did not make riskier decisions than individuals, $t(154) = -0.26, p = .794$. Separate dependent *t*-tests were also conducted for each task question which showed that teams did not make riskier decisions than individuals on any question, all $t < 0.35$, and all $p > .350$. Compared to individual intervals, team interval ranges were not narrower overall or on any single question.

Finally, Hypothesis 3b was tested using a simple linear regression, which showed that the more power on the team, the less risky shift that occurred, $t(154) = -2.77, p = .006$. This is the opposite of what was hypothesized. An additional simple linear regression was conducted that showed that the more power that the highest power individual had on each team, the less risky shift that occurred, $t(154) = -3.04, p = .003$. The lower the power on a team, and the lower the power of the highest power individual on the team, the smaller the interval ranges on the decision-making task, and therefore the more risky shift that occurred.

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Discussion

It was first hypothesized that individuals with more power would make more overconfident decisions. However, there was no relationship found between amount of individual sense of power and the width of the confidence intervals on the task. This is unexpected because of past research that stated more powerful individuals have higher self-esteem, heightened confidence, and increased self-assuredness that would lead them to make more overconfident decisions (Keltner et al., 2003).

Macenczak et al. (2015) measured overconfidence with a similar task, using three different measures of overconfidence to obtain significant results. Instead of standardizing across all individuals to obtain confidence scores, they compared an individual's confidence to their own and other participant's accuracy, and to estimated answers that were set for each individual depending on their level of power. Accuracy nor answer estimation based on power was used as part of the measure of confidence in the current study. Fast et al. (2012) had also used a similar confidence interval task where participants had to be 95% confident about their answers but used general knowledge questions instead of obscure. The researchers also manipulated power by instructing participants to write about a time they either felt they had or did not have power. Power was not manipulated in this study, and neither accuracy nor answer estimations were used. Perhaps measuring accuracy and estimating participant's answers based on manipulated power would have led to similarly significant results in this study.

Because of the expected effect of power on individual decisions, it was also hypothesized that higher power individuals would have more influence on team decisions. Past research had found power to affect decision making while working on a

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team because of the tendency of higher power individuals to minimize others' abilities to influence team outcomes (Anderson & Galinsky, 2006; Galinsky et al., 2006; Macenczak et al., 2016; Mooijman et al., 2015; See et al., 2011). Additionally, prior studies had found that teams are more likely to adopt the ideas of individuals with more power because those individuals are more likely to share their ideas with the team (Anderson et al., 2012; Briñol et al., 2007).

Yet, in the present study there was no evidence found that higher power individuals were able to influence team decisions more than those with lower power. In other words, all individuals had similar influence on the team's decisions, no matter their personal power. It is possible this resulted from the task consisting of obscure knowledge questions, with high power individuals not sharing their answers out of fear of appearing uncertain (Keltner et al., 2003).

According to past research, decisions made in teams are likely to be riskier than decisions made individually (Chou & Nordgren, 2017; Zhang & Casari, 2012). Therefore, it was hypothesized that teams would make riskier decisions than individuals. Unfortunately, it was not found in the current study that teams made riskier decisions than individuals. There was no evidence that the width of the answer intervals provided by teams were narrower than those produced by individuals. This study was arguably a low stakes situation, since individuals did not receive extra rewards for better performance. Therefore, they may not have viewed their actions as risky especially since they did not know the correct answers to many of the obscure knowledge questions (Bayissa et al., 2017).

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Zhang and Casari (2012) measured risk by giving participants different probabilities for a high payoff for each option in the task. For example, if they chose Option A, the “safe” option, they would receive 50 tokens, but if they chose “risky” Option B, they would either receive 150 tokens or none. Riskier participants tended to choose Option B more often and earlier in the task. This may be described as a high stakes situation, stimulating more disagreement and conflict in the teams, and thus more power expression. If participants in the current study were given a task higher risks involved, they may have engaged in more disagreement, showing more power differences.

Researchers also found that power affects risky shift by amplifying the power levels of individuals working on the team (Ambrus, Greiner, & Pathak, 2015; Roux & Sobel, 2015). This led to the hypothesis that the higher the average power on the team, the larger the risky shift. In this study, power did not strengthen the likelihood of risky shift occurring on a team. It was conversely found that the higher the amount of average power on the team, the less risky shift. Averaging team power may have not shown distinct differences in power across teams. A low risk perception from lack of incentives and low knowledge of the task questions may have negated the willingness of high power individuals to share ideas and participate in a manner consistent with their high-power tendencies (Keltner et al., 2003).

Limitations and Future Research Directions

Due to the nature of the task, the participants in the study may have had a low motivation to participate in a meaningful way. The task was assigning numeric ranges to answer obscure knowledge questions. Neither individuals or teams answered more than

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30% of the questions correct on average. It is plausible that high power individuals were not motivated to present their answers since they did not know the answers themselves. Keltner et al. (2003) discussed that expertise is a potential determinant of power. If high power individuals did not have expert knowledge on any of the task questions, it is possible they expressed their power less by not choosing more confident answers, and not attempting to influence others during the task. This could have lessened the effects of power during both the individual task and the team task. Higher power individuals also do not want to seem uncertain because of their tendency to want to feel self-assured in their decision making, resulting in less confident answers on the task (Keltner et al., 2003).

Using a task with more general knowledge questions may help ensure more ownership over answers since it would be more likely that more individuals would know the answers (Fast et al., 2012). This may also encourage more expression of power during the task. Greater outcome interdependence may also encourage participants to be more invested and more motivated during the study. This could be facilitated by using ongoing teams such as work or school teams instead of ad-hoc teams because relationships between participants are more established, similar to teams that were used in Anderson et al. (2012) and See et al. (2011). Additionally, using teams with established relationships rather than ad-hoc would make for a higher stakes situation where making more confident decisions would seem riskier to participants.

Power was only assessed during Phase 1. Generalized power information was collected, meaning how much power individuals feel they have across all social situations. However, we do not have information on how powerful participants felt during

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the study. Power has been shown to be moderately stable across contexts, but some individuals more reliably attain power across contexts than others (Anderson et al., 2012). Therefore, individual power levels could have shifted from when it was assessed in Phase 1 to the team task in Phase 2. Moreover, power hierarchies are the least fixed during initial team formation (Anderson, John, Keltner, & Kring, 2001). For half of the teams, the team task was their first interaction. The other teams completed a different team task first that was not part of the current study. So, half of the teams were initially forming during the team task in the study, resulting in power hierarchies that may have not reflected the true perceived power levels of the team members.

Additional individual power measurement techniques should be used, such as asking team members about how they perceived their own and other's power during the task, a technique used in Anderson et al. (2012). This information could then be aggregated across team members, giving a power score to each individual. Comparing the aggregated score to the score obtained from Phase 1 would show discrepancies between generalized perceived power and level of power perceived by team members during the task.

Team power measurement techniques could be changed from taking an average of generalized power scores to measuring the team's total composition of power, or disparity of power on the team. Averaging team power minimized power differences between teams; the range of team power scores was 2.5 times smaller than the range of individual power scores. Combined with lack of task expertise and incentives affecting high power individuals, the diminishing of power variance across teams could have also

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led to the finding that less powerful teams engage in more risky shift because differences in power disparity between teams were not well represented.

Calculating composition of team power by adding together the power scores of team members would show more power differences between teams. Measuring power disparity would show vertical differences in power (Mello & Rentsch, 2015). Large power disparities would help explain diminished team performance by indicating an interruption in the flow of information and potential distraction from key tasks (Howard & Klein, 2007).

Implications and Conclusion

This study did not manipulate power like many other studies measuring power (Anderson et al., 2012; Galinsky et al., 2003; van Kleef et al., 2015), instead measuring generalized power to predict how participants will behave on an individual and team task. It is important to continue to measure generalized power because this determines how individuals act across most social situations. However, other determinants of power, such as expertise, should be measured in combination (Keltner et al., 2003).

Objective outcome measures were used, reducing any implicit bias that could have been present if a creative task was used. The uniqueness of this study is shown through our use of the same task questions for individuals and teams, allowing us to measure movement of decisions from the individual to the team level. Comparing individual decisions to their team's decisions is a meaningful way to see how we assert our power in our interactions with others versus how we use our power alone.

The results of Hypothesis 3b suggest that high power individuals may only make risky decisions if they are knowledgeable about the task and if it is a high stakes

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situation. With Hypothesis 3b showing that less powerful teams actually engaged in more risky shift, it is possible that lower power teams are more comfortable making risky decisions that they are unsure as a team about than high power teams. Additionally, See et al. (2011) found that after having the opportunity to take advice from others and discussion (such as on a team task), high power individuals are less confident and therefore less risky in their final decisions. Further, power hierarchies may not have solidified during this team task (Anderson et al., 2001).

Teamwork will be a continuing trend at work, school, and other social settings. Companies are increasingly using more constantly shifting functional teams, and school project teams have always been a staple in classrooms at every grade level. It is important to keep seeking understanding of how individual differences such as power impact how teams will perform and make decisions.

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Appendix A

Decision-Making Task Questions

You should state a range (low value - high value) of possible values for each answer, such that you believe your range includes the true value of the answer 90% of the time. In other words, give a low estimate (e.g. 85 in) and a high estimate (e.g. 100 in) so that you think the true value has a 90% chance of falling within your range and a 10% chance of falling outside your range.

Please provide a range of values for the following questions:

	Range	
	Low	High
1. In what year did Leonardo da Vinci complete the Mona Lisa?	1450	1600
2. What is the length of the Nile river (in miles)?		
3. What is the weight (in pounds) of the Statue of Liberty?		
4. In how many countries is Spanish an official language?		
5. In what year was the zipper patented?		
6. How deep (in feet) is the Grand Canyon at its deepest point?		
7. How many words are in the text of the United States Declaration of Independence?		
8. In what year did the Billboard Top 100 song chart premiere?		
9. How long (in months) did it take the New Horizons spacecraft to fly from Earth to Pluto?		
10. How many members are in the U.S. congress (senators and representatives)?		

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Appendix B

Sense of Power Measure

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

1	2	3	4	5	6	7
Disagree Strongly	Disagr ee	Disagree a Little	Neither Agree nor Disagree	Agree a Little	Agre e	Agree Strongly

In my relationships with others...

- _____ 17. I can get them to listen to what I say.
- _____ 18. My wishes do not carry much weight.
- _____ 19. I can get them to do what I want.
- _____ 20. Even if I voice them, my views have little sway.
- _____ 21. I think I have a great deal of power.
- _____ 22. My ideas and opinions are often ignored.
- _____ 23. Even when I try, I am not able to get my way.
- _____ 24. If I want to, I get to make the decisions.

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Appendix C

IRB Approval Letter

**EXEMPTION NUMBER: 16-X025**

To: Abby Mello
From: Institutional Review Board for the Protection of Human
Subjects, Debi Gartland, Chair *ACT*
Date: Thursday, October 15, 2015
RE: Application for Approval of Research Involving the Use of
Human Participants

Office of Sponsored Programs
& Research

Towson University
8000 York Road
Towson, MD 21252-0001

t. 410 704-2236
f. 410 704-4494
www.towson.edu/ospr

Thank you for submitting an application for approval of the research titled,
The Effects of Individual Differences on Teamwork in Two Tasks

to the Institutional Review Board for the Protection of Human Participants
(IRB) at Towson University.

Your research is exempt from general Human Participants requirements
according to 45 CFR 46.101(b)(2). No further review of this project is
required from year to year provided it does not deviate from the submitted
research design.

If you substantially change your research project or your survey
instrument, please notify the Board immediately.

We wish you every success in your research project.

CC:
File

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Appendix D

Informed Consent: Teamwork Activities Study

Principal Investigator: Dr. Abby L. Mello

Phone: 410-704-3364

Purpose

The purpose of this study is to investigate the effects that differences between individuals have on teamwork activities. Prior to arriving at the laboratory, you completed a number of surveys. These will be used to determine certain characteristics about you. The purpose of the study is to determine how differences between members of the team, on these characteristics, will affect teamwork.

Procedure

Should you agree to participate, you will complete two separate individual tasks and two team tasks. You will be video and audio taped during your group's two tasks. You will not be recorded while working on the individual tasks. All tasks are written and/or verbal and will not require physical activity. First, you will complete a reading and responding activity alone. Then, you will be assembled into a group of 3 to 5 participants and asked to complete the same or a similar activity as a group. Third, you will be separated again to complete a set of questionnaires about your experience with the team task. Then, you will complete a second reading and responding task. Following that, the same group will meet to complete the task together. Lastly, you will complete another set of reaction questionnaires. Specific instructions will be provided for each stage of the procedure and for each task. Upon completion of the study activities, you will be debriefed and provided contact information for the Primary Investigator.

Each individual task will take approximately 10 to 15 minutes. Each group task will take approximately 20 minutes. Each set of questionnaires will take approximately 5 to 10 minutes. There will also be time when we provide you instructions, hand out and collect materials, and move or arrange participants in rooms. Therefore, the total time in the laboratory today will be no longer than 2 hours. The total time including the pre-survey will not exceed 2.5 hours.

Risks

There are no known physical risks to this study. The activities you engage in will be similar to those involved in regular classroom instruction.

Confidentiality

You have already been assigned a participant identification number. This will be used to match your responses from the pre-survey you completed before arriving at the laboratory, your team interaction recordings, and your questionnaires. Your name or other identifying information will NOT appear on the recordings, questionnaires, or task materials. Recordings and other materials will be stored in a secured and locked room in the CLA building. Access to these will be restricted to the Principle Investigator and

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research team. Upon completion of the research study, the recordings and other materials will be destroyed.

By signing below you are providing informed consent for video and audio recording and for using these recordings as part of this research.

Benefits

You will benefit by having the opportunity to practice working with a group of peers on two different types of activities. Your participation in this study will assist in advancing knowledge of how differences between members on a team affect interactions and performance. This knowledge will benefit decision making and project teams in a number of areas such as education and business.

You will also have the opportunity to earn money for your team's performance on the tasks. For both of the tasks, your team's performance will be scored. At the end of the session today we will assess your performance as a team. If your team scores well, you will each be given a \$10 giftcard to the University Store.

Voluntary Participation

Your participation in this study is voluntary. You may leave the study if you become uncomfortable or wish to leave for any reason. You will not be penalized for refusing to participate or terminating your participation during the study.

Contact Information

Principle Investigator

Dr. Abby L. Mello
410-704-3364
amello@towson.edu

Co-Investigator

Dr. Lisa Delise
336-917-5123
Lisa.delise@salem.edu

Institutional Review Board

Chair: Deborah Gartland
410-704-2236
irb@towson.edu

Please initial:

_____ I have read and understand the information on this form

_____ The information on this form has been explained to me

_____ I provide my consent for video and audio recordings as described above

Please sign:

Participant Signature

Date

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INTERNSHIP EXPERIENCE

Job Analysis Intern- Certified Mobile Device Security Professional (CMDSP), Baltimore, MD June 2016-March 2017

- Conducted a Job Analysis to quantify knowledge, skills, and abilities of a mobile device security professional
- Interviewed professionals and SMEs in the field via phone or the online survey I created

Employee Relations and Development Intern- Human Resources, Towson University August 2015-May 2016

- *Staff Mentorship Program for New Hires*: Implemented program for new hires to become acclimated to their new work environment
- *Training and Development Workshop Evaluation*: Collected feedback from Training and Development workshops to analyze satisfaction and effectiveness
- *New Hire Onboarding Checklist for Supervisors*: Created checklist to ensure supervisor readiness for new hire's first day

Human Resources Intern- EveryMind, Rockville, MD May 2015-August 2015

- Reviewed resumes of applicants for open positions
- Assisted with maintaining employee records and coordinating the new hire process

CONFERENCE PRESENTATIONS

Blandford, J. (April, 2018). *The relationship between power and decision making*. Poster in the 1st annual Psychology Department Conference at Towson University, Towson, MD. [Master's thesis]

Blandford, J., Delise, L. A., Mello, A., Akcakaya, A., Halsey, K., Morris, M. (May, 2017). *A few good men? Gender composition, conflict, and team performance*. Poster in the 29th annual convention of the Association for Psychological Science, Boston, MA.

Morris, M., Delise, L. A., Halsey, K., Akcakaya, A., **Blandford, J.,** Mello, A. (May, 2017). *Exploratory study of relationships between cognitive style and team communication*. Poster in the 29th annual convention of the Association for Psychological Science, Boston, MA.

Mello, A. L. Akcakaya, A., **Blandford, J.,** Halsey, K., & Morris, M. (May, 2016). *The moderating role of task characteristics on the relationship between cognitive diversity and teamwork*. In Stuhlmacher, A. & Beier, M., *Cognition at Work: A Sample of Graduate Student Research*. Symposium in the 28th annual convention at the Association for Psychological Science, Chicago, IL.

Santoro, A., Cates, K., Clark, S., **Blandford, J.,** & Kukucka, J. (March, 2016). *Getting psyched about Psi Chi: Ideas for invigorating your chapter*. Invited panel at the annual meeting of the Eastern Psychological Association, New York, NY.

PUBLICATION

Kukucka, J., Santoro, A., Clark, S., **Blandford, J.,** Cates, K., Hooper, P., Skeiky, L., & Milstein, J. L. (Fall 2016). A year in the life: Our formula for sustaining an active chapter. *Eye on Psi Chi*, 21(1), 16-19.

GRANTS AND SCHOLARSHIPS

Towson Psychology Department Graduate Scholarship	2017
Towson University Graduate Student Association Travel Grant	2017
Foundation Scholars Program at Towson University Scholarship	2016
American Psychological Student Caucus Travel Assistance Award	2016
Towson Office of Undergraduate Research Travel Grant	2016
Foundation Scholars Program at Towson University Scholarship	2014

