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Embodying Power: A Preregistered Replication and Extension of the Power Pose Effect

Katie E. Garrison[1], David Tang[1], and Brandon J. Schmeichel[1]

Abstract

Adopting expansive (vs. contractive) body postures may influence psychological states associated with power. The current experiment sought to replicate and extend research on the *power pose effect* by adding another manipulation that embodies power—eye gaze. Participants ($N = 305$) adopted expansive (high power) or contractive (low power) poses while gazing ahead (i.e., dominantly) or down at the ground (i.e., submissively). Afterward, participants played a hypothetical ultimatum game, made a gambling decision, and reported how powerful and in charge they felt. Neither body posture nor eye gaze influenced the gambling decision, and contrary to the predictions, adopting an expansive pose reduced feelings of power. We also found that holding a direct gaze increased the probability of rejecting a low offer on the ultimatum game. We consider why power posing did not have the predicted effects.

Keywords

dominance, embodiment, eye gaze, power pose, replication

Body movements and body positions can influence internal psychological states (e.g., James, 1894; Niedenthal, 2007). For example, activating the muscles involved in smiling can cause people to find more humor in cartoons (Strack, Stepper, & Martin, 1988), and nodding one's head can lead to more agreement with a persuasive message (Wells & Petty, 1980). In these examples, movements of the body (e.g., head nodding) influenced psychological experience (e.g., agreement with message).

More recent research has explored the effects of body postures on feelings and behavior associated with power. Specifically, research has observed that posing the body in an open and expansive way (e.g., hands behind head with elbows stretched out, feet extended onto table) as opposed to a contractive way (e.g., hunched over, legs and arms crossed) can lead to a diverse range of psychological effects associated with power. Examples include feeling more powerful (Carney, Cuddy, & Yap, 2010), confident (Cuddy, Wilmuth, Yap, & Carney, 2015), and proud (Stepper & Strack, 1993); increased pain tolerance (Bohns & Wiltermuth, 2012); behavioral action and abstract thought (Huang, Galinsky, Gruenfeld, & Guillory, 2011); risk taking (Carney et al., 2010); and even cheating (Yap, Wazlawek, Lucas, Cuddy, & Carney, 2013). Simply posing the body in an expansive way appears to alter thoughts, feelings, and behaviors associated with power.

Power Posing

In a prominent example of this power-posing effect, Carney, Cuddy, and Yap (2010) had participants adopt either expansive (high power) or contractive (low power) body poses for 2 min. Then, participants completed a variety of behavioral and physiological measures of power. For instance, participants provided saliva samples before and after the poses, and after the poses, participants had the opportunity to risk a small amount of money on a gamble. Participants who held the expansive postures reported feeling more powerful and in charge, took the gambling risk more often, and demonstrated elevated testosterone levels (a dominance hormone) and reduced cortisol levels (a stress hormone) in their saliva compared to those who held the contractive postures. The authors concluded that the more expansive physical postures embody power, which is sufficient to produce behavioral and physiological changes consistent with increased power.

Ranehill and colleagues (2015) attempted to replicate the findings of Carney et al. (2010) but did not find any differences in hormone levels or risk taking after power posing. They did, however, replicate the increase in self-reported feelings of power among participants who adopted the more expansive postures. The methods used by Ranehill et al. were slightly different from the methods used in Carney et al., which may have contributed to the failure to replicate some of the original

[1] Texas A&M University, College Station, TX, USA

Corresponding Author:
Katie E. Garrison, Texas A&M University, 4235 TAMU, College Station, TX 77843, USA.
Email: k_garrison@tamu.edu

findings. For example, participants in the Ranehill et al.'s study posed for a longer duration and knew the hypothesis being tested. Nonetheless, the results from Ranehill et al. shed doubt on the robustness of the effects of power posing on behavioral and physiological changes.

Given mixed findings from previous studies, one of the aims of the current experiment was to replicate the effects of power posing on risk taking and subjective feelings of power using Carney et al.'s (2010) methods. Beyond replication, we also sought to extend research on power posing by incorporating another nonverbal embodiment of power—eye gaze.

Eye Gaze and Dominance/Power

Social animals use nonverbal cues to gather information about interpersonal interactions and hierarchies within the group. Eye gaze is an important nonverbal indicator of social status and dominance, as revealed by research with both humans (e.g., Terburg, Hooiveld, Aarts, Kenemans, & van Honk, 2011) and nonhuman animals (e.g., Cross, Marks, & Ramakrishnan, 2002). Direct gaze is perceived by others to reflect higher role rank and dominance, whereas averting one's gaze from an interaction partner may signal fear and submission (e.g., Cross, 1978; Cross et al., 2002; Hall, LeBeau, & Coats, 2005). Although nonverbal displays such as eye gaze may differ in meaning across cultures (e.g., averted eye gaze in the United States is generally associated with low power, whereas in Japanese cultures, it may signal attentiveness and agreement; see Anderson, Hecht, Hoobler, & Smallwood, 2003), we assumed that direct gaze (relative to averted gaze) would be associated with dominance and high power in the current study because the current study was conducted in the United States.

Consistent with the view that a direct eye gaze embodies dominance and power, manipulations of eye gaze have been found to induce feelings and psychological states associated with dominance. For example, Tang and Schmeichel (2015) had participants look at pictures of angry and neutral faces and focus either on the eyes in the picture (i.e., direct gaze) or on the chin or mouth in the picture (i.e., averted gaze). Afterward, participants played a hypothetical ultimatum game in which they decided how much of a limited pool of money to offer and accept from an opponent. If the opponent rejected the offer, then neither individual received money. In this game offering small amounts of money and rejecting small offers from one's opponent is a sign of dominance (e.g., Burnham, 2007; Zak et al., 2009). Tang and Schmeichel found that men who made direct eye contact with others' faces behaved in a more dominant fashion (i.e., offered smaller amounts of money and rejected low offers), and both men and woman reported feeling more aggressive after making direct (vs. averted) eye contact with angry faces in particular. Hence, direct eye gaze (vs. averted) altered self-perceptions of aggression and dominance tendencies.

The Current Experiment

In the current experiment, we combined a manipulation of body posture with a manipulation of eye gaze and measured the effects on dominance, risk taking, and subjective feelings of power. We were particularly interested to test the hypothesis that the two manipulations interact to influence power-related feelings and risk behavior. We reasoned that combining two bodily states associated with high power or dominance (i.e., expansive body posture and direct eye gaze) would produce the strongest power-related effects, whereas potential mismatches (i.e., expansive posture with averted gaze, contractive posture with direct gaze) would reduce power-related effects (see Huang et al., 2011, for a conceptually similar mismatch prediction).

We copied the methods used by Carney et al. (2010), with four exceptions. First, we did not collect saliva samples to measure hormones. Second, we manipulated eye gaze in addition to body posture so that in each posture condition participants gazed directly ahead (i.e., dominantly) or averted downward (i.e., submissively). Third, we added a hypothetical ultimatum game as a dependent measure. And fourth, participants did not engage in the incidental impression formation task (i.e., looking at faces) used during the pose manipulation by Carney et al. (who dubbed this a "filler task," p. 1366).

We expected to replicate Carney et al.'s (2010) results when participants looked directly ahead, such that high-power (vs. low power) posers report feeling more powerful and take the gambling risk more often; we also expected these participants to demonstrate dominance in the ultimatum game (consistent with Tang & Schmeichel, 2015). In the averted gaze condition, we expected that the effect of power posing would be reduced or eliminated. In other words, we hypothesized that eye gaze would moderate the effects of power posing. We preregistered the methods and hypotheses pertaining to the gambling risk and feelings of power on the Open Science Framework (OSF; https://osf.io/f8snh/) prior to data collection.

Methods

Participants and Design

Undergraduate students ($N = 322$) participated in exchange for credit toward a course requirement. A power analysis prior to data collection revealed that a sample of 280 participants would be sufficient to detect effects smaller than those reported in Carney et al. (2010). Specifically, based on our final sample size, we had .80 power to detect effects approximately half the size of the power pose effects reported by Carney et al. on the gambling decision ($w = .16$) and feelings of power ($r = .16$), respectively.

We decided a priori to exclude from analyses data supplied by individuals who were suspicious of the hypothesis or reported knowledge about power posing. Data from 10 participants were excluded for this reason. We also excluded data from the first participant run by each of the four experimenters (this exclusion criteria were chosen a priori), from two

participants who experienced a malfunction with the manipulation (e.g., engaged in both direct and averted eye gaze), and from one participant who knew the experimenter. After exclusions, we had a final sample of 305 participants (61.2% female; $M_{age} = 18.82$, range = 18–26).

Participants were randomly assigned to hold either expansive or contractive poses for 2 min and to direct their eye gaze in a more dominant or submissive fashion during the poses. Thus, the experiment was a 2 (pose: high power vs. low power) × 2 (gaze: direct vs. averted) between-subjects design.

Procedure

Students participated one at a time in a study purported to examine how physiology and mental processes are influenced by posture, specifically where one's limbs are in relation to the heart (as in Carney et al., 2010). Participants were given time to ask questions and give their consent before providing basic demographic information and completing personality questionnaires. These questionnaires allowed us to explore potential individual difference moderators of the experimental manipulations. Specifically, we measured trait behavioral activation and inhibition (Carver & White, 1994), private body consciousness (Miller, Murphy, & Buss, 1981), interoceptive awareness (Mehling et al., 2012), self-esteem (Rosenberg, 1965), and aggression (Buss & Perry, 1992). Results pertaining to these measures are not presented here.

Next, to bolster the cover story, physiological sensors were attached to the underside of the participant's left arm and right calf. Then, the experimenter guided the participant into the physical poses based on the images in Carney et al. (2010). Each condition consisted of two poses that the participant held for 1 min, while the experimenter pretended to monitor their physiological data.

In the *high-power condition*, participants first sat in a chair and extended their feet onto a table in front of them, with their hands behind their head. In the second position, participants stood up and leaned over the table with their hands spread apart. In the *low-power condition*, participants first sat facing away from the table with their feet close together and their hands clasped in their lap. In the second position, participants stood with their feet close together and their arms encircled around their body (see Figure 1).

To manipulate eye gaze, participants were directed to look at a certain point in the room marked with a taped X. Participants were led to believe that looking at the X helped align their spine in a certain way. In the *direct gaze condition*, the X was affixed on the wall so that the participant looked directly ahead (adjusted for participants' height). In the *averted gaze condition*, the X was taped to the floor so that the participant looked down and off to the side.

Following the combined posture and eye gaze induction, which lasted approximately 2 min, the sensors were removed and participants returned to a computer station to complete the final two tasks: an ultimatum game and a gambling task.

In the ultimatum game, participants controlled a limited pool of money and had to decide how much of the money to share with an opponent. Specifically, participants were given the following prompt (as in Tang & Schmeichel, 2015):

> Imagine a game between two players in which one person is given $40 dollars to split between the two players. Player One must decide how much of the $40 to offer to Player Two. Player One can decide to offer as much (e.g., $40) or little (e.g., $0) as he/she wants. However, Player 2 must accept the offered amount, or else neither person will receive any money.

Participants were asked: (1) As Player 1, how much would you offer Player 2 out of US$40? (2) What is the lowest amount out of US$40 you would accept as Player 2, if Player 1 offered it to you? (3) Would you accept an offer of US$5 if offered?

Following the ultimatum game, participants were told they would receive US$2 and were given an opportunity to gamble the money (as in Carney et al., 2010). Specifically, participants were told that they could take the money and leave or roll a dice to try and double the money. Participants were told that if they chose to roll the dice, they had a 50% chance of doubling the money (i.e., rolling 1, 2, or 3) and a 50% chance of losing it all (i.e., rolling 4, 5, or 6). Participants indicated their decision to gamble with a "yes" or "no" answer. (Participants learned that there was no actual money during the debriefing.) Last, participants were asked to indicate on a piece of paper how powerful they felt and how in charge they felt on a scale from 1 (*not at all*) to 4 (*a lot*).

Results

Confirmatory Results

Gambling decision. Participants' gambling decisions are presented in Table 1. We ran logistic regressions on the binary gambling outcome (0 = *no gamble*, 1 = *gamble*), with pose condition, gaze condition, and the Pose × Gaze interaction as predictors. Overall, 80.0% of the participants chose to gamble. Neither the pose condition nor the gaze condition was significant predictors of the gambling decision: pose condition (weak pose as reference), $B = -.40$, $SE = .29$, $Wald = 1.92$, $p = .167$, odds ratio (OR) = 0.67, 95% confidence interval (CI) [0.38, 1.18]; gaze condition (averted gaze as reference), $B = -.37$, $SE = .29$, $Wald = 1.63$, $p = .201$, $OR = 0.69$, 95% CI [0.39, 1.22]. The Pose × Gaze interaction effect was also nonsignificant, $B = -.47$, $SE = .58$, $Wald = 0.66$, $p = .417$, $OR = 0.62$, 95% CI [0.20, 1.95].

Feeling powerful and in charge. Self-reports of how powerful and in charge participants felt were analyzed in an analysis of variance with pose and gaze as factors. We observed a main effect of pose on how powerful participants felt, $F(1, 301) = 4.87$, $p = .028$, $n_p^2 = .016$, but the effect was not as predicted: high-power posers ($M = 2.38$, $SD = 0.67$, 95% CI [2.27, 2.48]) felt less powerful than low-power posers ($M = 2.55$, $SD = 0.66$, 95% CI [2.44, 2.65]), $d = 0.26$. There was no main effect of gaze, $F(1, 301) = 0.02$, $p = .892$, and no interaction

Figure 1. High-power poses (top) and low-power poses (bottom).

Table 1. Frequencies of Gambling (0 = *no*, 1 = *yes*) by Pose and Gaze Manipulations.

Gamble					
Pose			Yes	No	Total
High power	Gaze	Direct	50 (71.4%)	20 (28.6%)	70
		Averted	63 (81.8%)	14 (18.2%)	77
Low power	Gaze	Direct	69 (82.1%)	15 (17.9%)	84
		Averted	62 (83.8%)	12 (16.2%)	74
Total			244 (80.0%)	61 (20.0%)	305

between gaze and pose, F (1, 301) = 2.09, p = .149. None of the predictor variables influenced feelings of being in charge (ps > .284).

In sum, we did not replicate Carney et al.'s (2010) findings that power posing increases the likelihood of taking a gamble and feelings of being powerful and in charge. In fact, participants in the current experiment reported feeling less powerful after holding high-power (vs. lower power) poses.

Exploratory Results

Ultimatum game. The ultimatum game yielded three responses: How much of the hypothetical US$40 participants would offer to their opponent, the lowest amount of money participants would accept from their opponent, and whether they would accept an offer of US$5 (yes/no).[1] Data from 12 participants were missing due to computer error. Six participants offered

Table 2. Ultimatum Game Outcomes for Each Experimental Condition.

	High Power		Low Power		Total
Measure	Direct Gaze ($n = 65$)	Low Gaze ($n = 73$)	Direct Gaze ($n = 78$)	Low Gaze ($n = 70$)	($N = 286$)
US$40 offered	20.16 (3.42)	19.94 (2.83)	19.55 (3.44)	19.90 (2.35)	19.87 (3.03)
US$40 accepted	14.05 (6.10)	13.44 (6.36)	13.68 (6.36)	13.14 (7.04)	13.57 (6.45)
Composite score	–6.05 (6.46)	–6.51 (6.97)	–6.13 (6.39)	–6.76 (7.08)	–6.36 (6.70)
Rejecting low offer	64.62%	43.84%	60.26%	54.29%	55.6%

Note. One participant in the high power/direct gaze condition did not complete the US$40 *offered* measure, and one participant in the low power/direct gaze condition did not complete the US$40 *accepted* measure.

Table 3. Correlations Between Feelings of Power, In Charge, and Other Dependent Measures.

Measure	1	2	3	4	5	6	7
1. Feelings of power	—						
2. Feeling in charge	.609**	—					
3. Gambling decision	–.059	–.070	—				
4. Rejecting low US$5 offer	.107†	.069	.017	—			
5. Amount US$40 offered	–.035	–.029	–.042	–.066	—		
6. Lowest offer accepted	.041	.000	–.065	.341**	.128*	—	
7. Composite score	.064	.019	–.060	.348**	–.294**	.910**	—

†$p < .10$. *$p < .05$. **$p < .01$.

more than 3 *SD* from the mean, which suggested that they did not understand the game or take it seriously. Two additional participants indicated that they did not understand the game. After removing these 20 participants, a total of 285 participants' responses remained for analyses. Descriptive statistics for ultimatum game outcomes are displayed in Table 2.

The average amount of money participants offered to their opponent was US$19.87 ($SD = 3.0$). We observed no main effects of pose condition, gaze condition, or their interaction (*ps* > .369) on the amount of money participants offered their opponents.

The lowest amount of money participants were willing to accept from their hypothetical opponent on average was US$13.57 ($SD = 6.45$). Again, for this variable, we observed no main effect of pose condition, gaze condition, or their interaction (*p*s > .459).

We created a composite score for the ultimatum game by subtracting the amount of money participants offered to their opponent from the amount they were willing to accept. Higher scores indicate that participants offered less money than they were willing to accept, which is the dominant response (Tang & Schmeichel, 2015). In our sample, the mean composite score was US$−6.36 ($SD = 6.7$), indicating that participants generally offered more money than they were willing to accept (i.e., participants were accommodating and fair). This composite score was not influenced by pose condition, gaze condition, or the interaction between pose and gaze (all *p*s > .498).

The decision to reject a low offer of US$5 (0 = *accept*, 1 = *reject*) was analyzed in logistic regressions with pose condition, gaze condition, and their interaction as predictors. Across all conditions, 55.6% of participants rejected the low offer. The gaze manipulation (averted gaze as reference) had a significant influence on this decision, $B = .54$, $SE = .24$, $Wald = 4.94$, $p = .026$, $OR = 1.71$, 95% CI [1.07, 2.74], such that those who directed their gaze ahead were 1.71 times more likely to reject the low offer than those who averted their gaze. Neither pose condition (weak pose as reference), $B = -.13$, $SE = .24$, $Wald = 0.28$, $p = .598$, $OR = 0.881$, 95% CI [0.55, 1.41], nor the interaction between gaze and pose, $B = .61$, $SE = .48$, $Wald = 1.57$, $p = .211$, $OR = 1.833$, 95% CI [0.71, 4.73], was significant predictors of this outcome.

In sum, holding a direct gaze increased the likelihood of rejecting a low offer on the hypothetical ultimatum game, which is consistent with the results of Tang and Schmeichel (2015). However, we did not find any effects of the pose or gaze manipulations on the amount of money participants offered to the opponent or the minimum amount of money participants were willing to accept from the opponent.

Feelings of power. We explored the extent to which individual differences in feelings of power related to the other outcome measures in this study. Table 3 shows the correlations among feelings of power, feeling in charge, and the other dependent measures (i.e., the gambling decision and the four ultimatum game responses described above). Feeling powerful was positively correlated with feeling in charge, but neither of these feelings was correlated with the decision to gamble. Feelings of power were marginally correlated with rejecting the low US$5 offer in the ultimatum game, suggesting that people who felt more powerful were more likely to reject the low US$5 offer. The other correlations suggest modest relationships among the various ultimatum game outcomes.

Discussion

We borrowed methods from Carney et al. (2010) and had participants adopt high- versus low-power body postures before completing a number of power and dominance-related outcome measures. We added an eye gaze manipulation as a secondary nonverbal display of power and an ultimatum game as another dependent measure of dominance-related tendencies (e.g., Burnham, 2007; Tang & Schmeichel, 2015). We preregistered on OSF the prediction that we would replicate the power-posing effects reported by Carney et al., particularly when participants held a direct (vs. averted) eye gaze.

We found no evidence to suggest that body posture or eye gaze, either alone or in combination, influences risk taking. The current results, taken together with the null effects of power posing on risk taking observed by Ranehill et al. (2015), suggest that adopting a high-power pose does not increase risk taking as measured by a one-shot gambling decision.

The observed effects of power posing on subjective feelings of power were also inconsistent with the findings of both Carney et al. (2010) and Ranehill et al. (2015). We found that adopting a more expansive pose reduced feelings of power compared to adopting a more contractive pose, whereas both Ranehill et al. and Carney et al. found that high-power posers felt subjectively more powerful than low-power posers. Further, we assessed the correlation between feelings of power and responses to the one-shot gambling decision, based on the assumption that the two measures should be correlated insofar as risk taking is a reflection of power. But subjective feelings of power were uncorrelated with the risk taking decision.

Implications

Why did we find reduced feelings of power among high-power posers and no effects on risk taking? We had not anticipated these outcomes, so we can only speculate about why they occurred. One possibility is that social context plays a key role in power pose effects, and the current experiment lacked a meaningful social context. Participants in the current study adopted high- or low-power poses while staring at an X taped on the wall or on the floor. The experimenter remained in the room throughout the study but did not interact with the participant other than to instruct him or her what to do next. Neither the pose nor the eye gaze was directed at another person, so one could argue that the current study involved only a very minimal social context. In this view, power posing and eye gaze are likely to be more impactful when they occur in the context of interaction partners (e.g., an audience) or are directed at (or away from) other individuals.

Indeed, recent discussion of power pose effects has suggested that social context may moderate the effects of the power posing (e.g., Carney, Cuddy, & Yap, 2015). Specifically, some research has found power-posing effects (e.g., risk taking) only in a context in which participants interact with other people (real or computer-simulated; Cesario & McDonald, 2013). If a social context is necessary for power poses to exert their influence on power-related feelings and behaviors, then the absence of a relevant social context in the current experiment may help to explain the null findings for power posing.

Another possible explanation for the nonsignificant effect of power posing on risk taking is that power posing does not influence risk taking. This possibility contrasts with the conclusions of Carney et al. (2010) but is consistent with the nonsignificant findings reported by Ranehill et al. (2015). The current study had greater statistical power to detect power posing effects than Carney et al. Their original study included 42 participants, or 21 participants per pose condition. The current study included a sample of 305 participants in a four-cell design, so we had approximately 75 participants per condition. Thus, the current study more than tripled the number of participants per condition in the original study. In addition, a power analysis indicated that our sample size was sufficient to capture effects about half the size of those reported in Carney et al.

The original risk-taking finding reported by Carney et al. (2010) fell outside the 95% CI of the risk-taking finding observed in the current study. We calculated the OR for the likelihood of taking the risky gamble among the high-power posers versus the low-power posers in Carney et al. They observed that high-power posers gambled 86.36% of the time, whereas low-power posers gambled 60% of the time. This produced an OR (high power: low power) of 4.22, meaning that their high-power posers were 4.22 times more likely to gamble than low-power posers. In the current study, we found that high-power posers were only 0.67 times more likely to gamble than low-power posers, with a 95% CI of [0.38, 1.18]. Hence, the effect reported in Carney et al. falls well outside the CI of the effect observed in the current study.

The current study had a larger sample (in terms of n per condition) than many other studies reporting power pose effects: Cuddy, Wilmuth, Yap, and Carney (2015) sampled 61 participants in two conditions (n per cell = 30.5), Cesario and McDonald (2013) sampled 209 participants across six conditions (n per cell = 34.8), and 155 participants across four conditions (n per cell = 38.7); Huang, Galinsky, Gruenfeld, and Guillory (2011) sampled 77 participants in four conditions (n per cell = 19.25), 57 participants in four conditions (n per cell = 14.25), and other similar sample sizes. In comparison to the extant literature on power posing effects, the current study had more statistical power to capture real effects. Viewed in this light, perhaps the most charitable conclusion for the current findings is that power posing is unlikely to have a nonsmall effect on risk taking as measured by the one-shot gambling decision.

The ultimatum game responses are conceptually similar to the other measures of power and dominance borrowed from Carney et al. (2010), and responses to the ultimatum game have been associated with other dominance-related variables in past research (e.g., Burnham, 2007; Zak et al., 2009). But power posing had no effect on these responses. Hence, none of the three dependent measures we used detected the predicted power pose effects. The eye gaze manipulation did influence the likelihood of rejecting low offers on the ultimatum game. Specifically, participants who held a direct gaze were almost

twice as likely (1.71) to reject the low US$5 offer. Rejecting the low offer ensured that no one in the game (hypothetically) would receive any money. Previous research has found that rejecting low offers in the ultimatum game is related to testosterone levels such that men who reject (vs. accept) the low offer of US$5 have higher baseline testosterone levels (Burnham, 2007). Testosterone is related dominance and aggression (e.g., Mazur & Booth, 1998) and was found to increase when participants adopted a high-power pose in Carney et al.'s study. However, none of the other ultimatum game responses in the current study were influenced by the eye gaze manipulation, so it remains to be seen whether rejecting low offers is a reliable consequence of direct eye gaze; this result awaits replication.

Limitations

The current study was not a direct replication of Carney et al. (2010) because we added an eye gaze manipulation and had participants complete a hypothetical ultimatum game between the posture induction and the other dependent measures. Hence, it is possible that we did not replicate their results because completing the ultimatum game influenced participants' responses to the gambling decision and how powerful and in charge they felt. In addition, participants in Carney et al.'s study performed an incidental impression formation task during the pose manipulation (which presumably required them to gaze directly ahead), but we did not include this impression formation task in the current study because it was incompatible with our eye gaze manipulation.

As discussed earlier, lacking the minimal social context afforded by the impression formation task may have weakened the power pose effect. Nonetheless, we found that those who held a direct eye gaze were more likely to reject the low ultimatum game offer. This finding may suggest that the eye gaze manipulation does not need to be situated in a social context to influence dominance-related outcomes, but we hasted to add that eye gaze did not influence the amount of money offered or accepted in the ultimatum game. Tang and Schmeichel (2015) found an effect of eye gaze (i.e., direct vs. averted) on participants' ultimatum game composite score (i.e., amount of money offered/accepted), but their participants gazed at pictures of faces. The social context in Tang and Schmeichel's study may have strengthened the eye gaze manipulation and contributed to the effects they found, relative to the more modest effects of eye gaze observed in the current study.

Conclusion

The current experiment was a conceptual replication and extension of research on the power pose effect. We followed the methods of Carney et al. (2010), adding an eye gaze manipulation and an additional dominance-related outcome, and we preregistered our methods and hypotheses on OSF. Results indicated that neither body posture nor eye gaze influenced risk taking on a one-shot gambling task. We also found that adopting a more expansive (vs. contractive) body posture reduced self-reported feelings of power. These findings are not in line with our hypotheses or the findings reported by Carney et al.

This experiment was well powered to detect power pose effects but found none. It is possible that small deviations from the original power pose protocol (i.e., additional variables, lack of "filler" impression formation task) may have influenced the effects of body posture and eye gaze on power-related outcomes. We believe future research should continue to explore eye gaze in combination body posture when studying the embodiment of power. More generally, taking the concept of embodiment seriously would seem to entail a consideration of the entire body (e.g., gaze direction as well as body posture).

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Note

1. Following Tang and Schmeichel (2015), we had anticipated more dominant responding on the ultimatum game among participants who adopted a high-power pose with a direct eye gaze. However, we did not register this prediction on Open Science Framework before starting the study, so we present the relevant results as exploratory results.

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Author Biographies

Katie E. Garrison is a PhD student in social and personality psychology at Texas A&M University. She earned her BA in psychology at Carroll College in Helena, MT, and her MS in psychological science at Montana State University. She is interested in self-control, motivation, and psychophysiology.

David Tang is a UX research assistant at Google [x]. He earned his BS in psychology at Stony Brook University and his PhD in social psychology at Texas A&M University. He is enjoying the year-long temperate weather in Sunnyvale, California.

Brandon J. Schmeichel is a professor of psychology at Texas A&M University. He studies motivation, emotion, and self-control. He is former associate editor of *Journal of Experimental Social Psychology* and a fellow of the Association for Psychological Science. He lives with three other people, a cat, and a dog in scenic College Station, TX.

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