American Psychological Association

Journal of Experimental Psychology: General

0096-3445/18/$12.00

2018, Vol. 147, No. 4, 591–596
http://dx.doi.org/10.1037/xge0000427

BRIEF REPORT

Power Increases the Socially Toxic Component of Narcissism Among Individuals With High Baseline Testosterone

Nicole L. Mead
University of Melbourne

Roy F. Baumeister
University of Queensland and Florida State University

Anika Stuppy
Erasmus University Rotterdam

Kathleen D. Vohs
University of Minnesota

The corrosive effects of power have been noted for centuries, but the self-related changes responsible for those effects have remained somewhat elusive. Narcissists tend to rise to—and abuse—positions of power, so we considered the possibility that positions of power may corrupt because they inflate narcissism. Two pathways were considered: Powerholders abuse their power because having power over others makes them feel superior (grandiosity pathway) or deserving of special treatment (entitlement pathway). Supporting the entitlement pathway, assigning participants to a position of power (vs. equal control) over a group task increased scores on the Exploitative/Entitlement component of narcissism among those with high baseline testosterone. What is more, heightened Exploitative/Entitlement scores among high-testosterone participants endowed with power (vs. equal control) statistically explained amplified self-reported willingness to misuse their power (e.g., taking fringe benefits as extra compensation). The grandiosity pathway was not well supported. The Superiority/Arrogance, Self-Absorption/Self-Admiration, and Leadership/Authority facets of narcissism did not change as a function of the power manipulation and testosterone levels. Taken together, these results suggest that people with high (but not low) testosterone may be inclined to misuse their power because having power over others makes them feel entitled to special treatment. This work identifies testosterone as a characteristic that contributes to the development of the socially toxic component of narcissism (Exploitative/Entitlement). It points to the possibility that structural positions of power and individual differences in narcissism may be mutually reinforcing, suggesting a vicious cycle with personal, relational, and societal implications.

Keywords: narcissism, power, testosterone, corruption, entitlement

Supplemental materials: http://dx.doi.org/10.1037/xge0000427.supp

For centuries power has been viewed as a corrupting force. Despite the recent surge in psychological research examining the cognitive, motivational, and behavioral consequences of power, the self-related changes that explain the corrupting influence of power have remained somewhat elusive. The socially toxic behaviors of the powerful resemble those of narcissists, so we investigated the possibility that social power increases narcissism.

Nicole L. Mead, Department of Management and Marketing, Faculty of Business and Economics, University of Melbourne; Roy F. Baumeister, School of Psychology, University of Queensland, and Department of Psychology, Florida State University; Anika Stuppy, Department of Marketing Management, Rotterdam School of Management, Erasmus University Rotterdam; Kathleen D. Vohs, Department of Marketing, Carlson School of Management, University of Minnesota.

The experiment reported in this article has not been shared at professional meetings, nor have the data been disseminated.

This work benefited from the support of a doctoral fellowship from the Social Sciences and Humanities Research Council of Canada (SSHRC; Nicole L. Mead) and the Erasmus Research Institute of Management (ERIM; Nicole L. Mead and Anika Stuppy). The content is solely the responsibility of the authors and does not necessarily reflect the official views of the SSHRC or ERIM. We thank Cristina Ion and Victoria Cazacu for assistance with data collection and Bram Van den Bergh and Jon Maner for feedback on an earlier version of the article.

Correspondence concerning this article should be addressed to Nicole L. Mead, Department of Management and Marketing, Faculty of Business and Economics, University of Melbourne, Level 10, 198 Berkeley Street, 3010 Victoria, Australia. E-mail: nicole.mead@unimelb.edu.au

Two Possible Power-to-Corruption Pathways

Narcissism consists of two separate components: entitlement and grandiosity (Brown, Budzek, & Tamborski, 2009). *Entitlement* is the desire to be recognized and treated as special by others. *Grandiosity* is relatively more intrapersonal and is characterized by an arrogant sense of self-importance.

The maladaptive behaviors and interpersonal problems that characterize abusive powerholders, such as aggression, cheating, and counterproductive workplace behaviors, have been linked with the Exploitative/Entitlement component of narcissism (for a review, see Grijalva et al., 2015). Hence, increased entitlement and exploitation seemed a viable explanation for the corrupting influence of power. We label this the *entitlement pathway.*

An alternative possibility is that power corrupts because it makes people think they are better than others. We label this the *grandiosity pathway.* Conceptually, this pathway is similar to the theory that power corrupts through inflated self-esteem (Kipnis, 1972) because the grandiosity components of narcissism are correlated with self-esteem (whereas the Exploitative/Entitlement component is not; Emmons, 1984, 1987; Watson & Biderman, 1993).

The evidence for the link between power and self-esteem has been mixed, however. Recalling a time of power (vs. recalling yesterday's activities) increased self-esteem (Fast, Gruenfeld, Sivanathan, & Galinsky, 2009). Yet giving people actual power (vs. equal control) over a group task did not change self-esteem (Kipnis, 1972; Wojciszke & Struzynska-Kujalowicz, 2007). Thus, self-esteem did not explain the corrupting influence of power (Kipnis, 1972).

Given that the Exploitative/Entitlement component of narcissism has been linked with a wide range of socially toxic behaviors, we favored the entitlement pathway. Nevertheless, we examined both possible pathways by examining how power changes scores on the narcissism components that capture grandiosity and entitlement.

Testosterone

Although the notion that social power corrupts has anecdotal and scientific support (e.g., Kipnis, 1972), not all people misuse their position of power. We focused on testosterone as an attribute that may predispose people to the corrupting influence of structural power. Leaders with high testosterone were prone to use their position of power to improve their own outcomes at the expense of others (Bendahan, Zehnder, Pralong, & Antonakis, 2015). If narcissism is the missing link between power and corruption, then gains in power should have the strongest effect on narcissism among those with high testosterone.

Being endowed with power may increase entitlement and exploitation among high-testosterone individuals. Testosterone is positively associated with dominant behavior that is intended to achieve or maintain high social rank (Archer, 2006; Mazur & Booth, 1998). Those highly motivated to dominate others strive to retain their positions of power, even at the expense of group interests (Maner & Mead, 2010; Mead & Maner, 2012a, 2012b). Garnering special treatment and manipulating others for one's purposes may help to maintain or even increase a power differential between the self and others. We therefore predicted that social power inflates the Exploitative/Entitlement component of narcissism among those with high testosterone. An experiment tested these hypotheses by measuring individual differences in circulating testosterone and manipulating whether participants believed they had power (vs. equal control) over a group task.

Method

Participants and Procedure

Previous studies examining the interaction between manipulated hierarchical position and measured testosterone levels have used inconsistent sample sizes. We therefore used a rule of thumb of at least 50 participants per cell (Simmons, Nelson, & Simonsohn, 2013). By the end of recruitment (the day we reached 200 participants), 206 participants (98 female) completed the study in exchange for monetary payment. The study was approved by the school's institutional review board.

To increase the believability of the role-play power manipulation, we arranged for participants to arrive in groups for a team-dynamics study. The experimenter brought the group to a room that was labeled *group room* and was set up to facilitate a group interaction. Participants were told they would complete a team task together there. Then they were led to individual cubicles, where they were asked to complete initial measures. In reality, those tasks constituted the study procedures. All study materials are public (Mead, 2017).

Testosterone

Participants completed a testosterone briefing session 24 hr before the main experiment. The session aimed to ensure that participants would provide a clean saliva sample during the main experiment (see the online supplemental materials).

To minimize circadian fluctuations in testosterone, we conducted the experiment between 12 (noon) and 3 p.m. (Mehta, Jones, & Josephs, 2008). Saliva was collected before the power manipulation. Participants drooled 1.5 ml of saliva through a straw into a sterile polypropylene SaliCap tube. After collection, saliva samples were frozen at −20 °C. Samples were shipped on dry ice to Clemens Kirschbaum's laboratory. Sampling tubes were centrifuged at 10,000 rpm for 5 min. Salivary testosterone concentrations were measured using commercially available chemiluminescence-immuno-assays with high sensitivity (lower limit of detection = 1.8 pg/ml; analytical range = 1.8−760 pg/ml). Six participants provided unusable saliva samples. The inter- and intraassay coefficients were 5.68% and 5.39%, respectively. Men (M = 101.38 pg/mL, SD = 54.91) registered testosterone levels that were approximately three times higher than women's (M = 30.26 pg/mL, SD = 21.23), $t(190) = 11.647$, $p < .0001$, which is consistent with guidelines for determining that testosterone analyses were specific to testosterone (Schultheiss & Stanton, 2009).

Power manipulation. We used a previously validated power manipulation that gives participants asymmetric (vs. equal) control over a group task and rewards (Case & Maner, 2014; Maner & Mead, 2010; Mead & Maner, 2012a). Participants completed two measures that were said to measure leadership abilities. We told all participants they had achieved the highest combined score on the leadership measures. Therefore, any changes in narcissism could

be attributed to differences in interpersonal power (described in the next paragraph) rather than performance feedback.

Participants randomly assigned to the power condition were informed they would be the "Boss" of the group task because of their top scores on the leadership tasks. As Boss, they would instruct the other group members ("subordinates") about how to perform the team task, evaluate their subordinates throughout the task, and decide how to distribute monetary rewards that would be earned during the group task. In contrast, participants in the equal-control condition were told that all group members had equal control over the group task and that the monetary rewards earned during the group task would be divided equally among group members. As a manipulation check, participants indicated how powerful they felt on a scale of 0 (*not at all*) to 100 (*very much so; M* = 58.87, *SD* = 24.09).

Ostensibly because the group room was not yet available, participants were asked to complete additional measures while they waited to start the group task. In reality, those were the dependent measures. The cover story was given to encourage continued feelings of interpersonal power during the completion of the outcome variables. In a funnel debriefing, only two participants expressed substantial suspicion about the manipulation or group task, suggesting the cover story was successful.

Narcissism. Narcissism was assessed with the commonly used 40-item Narcissistic Personality Inventory (NPI; Raskin & Terry, 1988). Participants choose between two options, with one option being more narcissistic than the other. The instructions were modified by informing participants to respond in terms of their momentary feelings (Giacomin & Jordan, 2014).

We computed scores for the four factors identified by Emmons (1984, 1987). *Exploitative/Entitlement* (e.g., "I insist on getting the respect that is due to me"; *M* = 2.53, *SD* = 1.86; α = .59) was used to test the entitlement pathway. *Self-absorption/Self-admiration* (e.g., "I am an extraordinary person"; *M* = 3.66, *SD* = 2.10; α = .66) and *Superiority/Arrogance* (e.g., "I can make anybody believe anything"; *M* = 2.74, *SD* = 1.70; α = .54) were clear tests of the grandiosity pathway. *Leadership/Authority* (e.g., "I see myself as a good leader"; *M* = 4.31, *SD* = 2.42; α = .77) was not a conceptually clear test of grandiosity, but its positive correlation with self-esteem (e.g., Emmons, 1984) suggested it may capture positive self-views. Thus, the Leadership/Authority factor was computed and examined as a potential test of the grandiosity pathway.

Corruption. Willingness to abuse one's power was assessed by summing responses to the 18-item Misuse of Power scale (Lee-Chai, Chen, & Chartrand, 2001). This scale captures willingness to use one's power to improve one's outcomes at the expense of others (e.g., "There is nothing wrong with occasionally taking credit for one of your subordinates' ideas"), rated on a scale of 1 (*strongly disagree*) to 9 (*strongly agree; M* = 71.11, *SD* = 21.09; α = .81). It predicts willingness to misuse power in a variety of specific situations (e.g., accept a bribe) and has predictive value beyond the constructs of dominance and exploitation (Lee-Chai et al., 2001).

Digit ratio. Second digit (index) to fourth digit (ring) ratio (2D:4D) has been used as a proxy for testosterone levels (e.g., Ronay & von Hippel, 2010) because it has been argued that 2D:4D reflects exposure to androgens in the womb (Manning, 2002). However, recent meta-analyses concluded that digit ratio may not be linked to androgen-receptor genes (Voracek, 2014) or correlated with testosterone (Hönekopp, Bartholdt, Beier, & Liebert, 2007).

We measured digit ratio. Images of participants' right hands were acquired via a flatbed scanner. Digit length was measured from the metacarpophalangeal crease to the tip of the finger. Eight participants provided unusable (blurry) hand scans, resulting in a final sample of 192 participants (92 female; 101 equal-control condition; M_{age} = 21.97 years). Digit ratio was calculated by dividing the length of the second digit by the length of the fourth digit (M_{men} = .95, *SD* = .03; M_{women} = .96, *SD* = .03). Consistent with meta-analytic conclusions (Hönekopp et al., 2007), digit ratio and testosterone did not covary among men, $r(99) = -.021$, $p = .839$, or women, $r(91) = .050$, $p = .638$.

Results

Predictive Model

To account for gender differences in the predictors testosterone and 2D:4D, we standardized those variables within gender (Maner, Miller, Schmidt, & Eckel, 2008). Preliminary analyses revealed that power condition did not interact with gender or digit ratio; therefore, those are not discussed further. Full results are reported in the online supplemental materials.

Men (vs. women) have been found to be more narcissistic (Grijalva et al., 2015) and have reported being more willing to misuse their power (Lee-Chai et al., 2001), so we controlled for gender to isolate the effects of interest. Excluding gender as a covariate did not change the interpretation of the results (see the online supplemental materials). The predictive model for main-text analyses was as follows: power condition (centered), testosterone (standardized within gender), participant gender (centered), and the theoretically relevant interaction (Power Condition × Testosterone Levels).

Power Manipulation Check

Endowing participants with power (vs. equal control) over the group task heightened self-reported feelings of power (β = .157), $t(187) = 2.178$, $p = .031$, partial $r = .157$; participants in the power condition felt more powerful (*M* = 62.84, *SD* = 21.74) than did participants in the equal-control condition (*M* = 55.30, *SD* = 25.61). There were no other significant predictors (*p*s > .295). Hence, the manipulation worked regardless of testosterone levels.

Entitlement

Full results are reported in Table 1. The predicted interaction between power condition and testosterone levels was not significant (β = .124), $t(187) = 1.701$, $p = .091$, partial $r = .123$; see Figure 1), but we proceeded with a priori hypothesis testing (Iacobucci, 2001; Keppel & Wickens, 2004; Winer, Brown, & Michels, 1991). Supporting the entitlement pathway, endowing participants with power (vs. equal control) over the group task increased Exploitative/Entitlement scores among high-testosterone (+1 *SD* from the mean; β = .233), $t(187) = 2.278$, $p = .024$, partial $r = .164$, but not low-testosterone (−1 *SD* from the mean;

Table 1
Results of Multiple Regression Analyses Predicting Narcissism Facets

Outcome variable	Exploitative/Entitlement				Self-absorption/Self-admiration				Superiority/Arrogance			
	β	*t*	*p*	partial *r*	β	*t*	*p*	partial *r*	β	*t*	*p*	partial *r*
Power condition	.109	1.525	.129	.111	.102	1.410	.160	.103	.023	.326	.745	.024
Testosterone	.025	.344	.732	.025	.019	.260	.795	.019	.045	.630	.529	.046
Gender	.123	1.713	.088	.124	.138	1.918	.057	.139	.229	3.238	.001	.230
Power × Testosterone	.124	1.701	.091	.123	.050	.688	.492	.050	.115	1.604	.110	.117
Power condition at +1 *SD* testosterone	.233	2.278	.024	.164	.152	1.478	.141	.107	.138	1.368	.173	.100
Power condition at −1 *SD* testosterone	−.014	.137	.891	−.010	.052	.503	.616	.037	−.092	.913	.363	−.067

β = −.014), $t(187) = .137$, $p = .891$, partial $r = -.010$, participants.

Grandiosity

Regressing the Superiority/Arrogance and Self-absorption/Self-Admiration factors on the main predictive model revealed main effects of only gender. Full results are reported in Table 1.

Leadership/Authority

Regressing Leadership/Authority scores on the main predictive model revealed a main effect of gender (β = .260), $t(187) = 3.689$, $p < .0001$, partial $r = .260$, whereby male participants ($M = 4.90$, $SD = 2.27$) endorsed more narcissistic Leadership/Authority statements than did female participants ($M = 3.66$, $SD = 2.43$). Power condition was not a significant predictor (β = .030), $t(187) = .423$, $p = .673$, nor was baseline testosterone (β = −.060), $t(187) = .839$, $p = .403$. The interaction between power condition and testosterone levels was not significant (β = .078), $t(187) = 1.090$, $p = .277$. The simple effect of the power manipulation (vs. equal control) was not significant among high-testosterone (β = .108), $t(187) = 1.070$, $p = .286$, or low-testosterone (β = −.048), $t(187) = .478$, $p = .633$, participants.

Misuse of Power

Regressing Misuse of Power scores on the main predictive model revealed the predicted interaction between power condition and testosterone levels (β = .149), $t(187) = 2.081$, $p = .039$, partial $r = .150$ (see Figure 2). Consistent with predictions, the power manipulation increased self-reported misuse of power among high-testosterone (+1 *SD;* β = .267), $t(187) = 2.666$, $p = .008$, partial $r = .191$ (see Figure 2), but not low-testosterone (−1 *SD;* β = −.029), $t(187) = .290$, $p = .772$, partial $r = -.021$, participants.

The main model revealed a main effect of gender (β = .218), $t(187) = 3.106$, $p = .002$, partial $r = .221$. Power condition (β = .119), $t(187) = 1.693$, $p = .092$, partial $r = .123$, and testosterone levels (β = .018), $t(187) = .245$, $p = .806$, partial $r = .018$, were not significant predictors.

Process Analyses

We tested which narcissism facet explained the interactive effect of power condition and testosterone levels on misuse of power scores. We estimated a moderated-mediation model with 5,000 bias-corrected bootstrap samples (Hayes, 2013; Model 8), controlling for gender (excluding gender did not change the conclusions of the results; see the online supplemental materials).

Supporting theorizing, the indirect effect of power condition on misuse of power scores via Exploitative/Entitlement scores was significant for high-testosterone (+1 *SD;* 95% confidence interval [CI] [.570, 7.806]) but not low-testosterone (−1 *SD;* 95% CI [−3.640, 2.900]) participants.

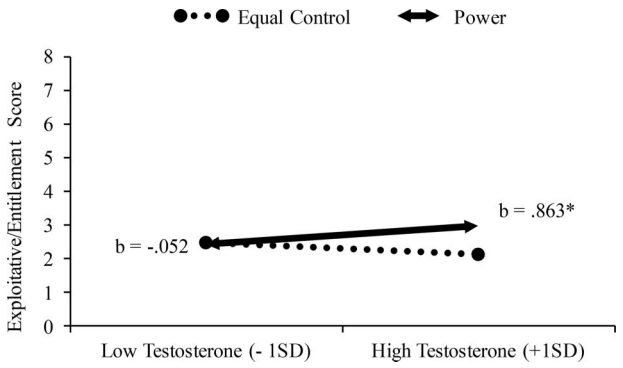

Figure 1. Endowing participants with power (vs. equal control) over a group task increased scores on the Exploitative/Entitlement component of narcissism among participants with high (+1 *SD*) but not low (−1 *SD*) testosterone levels. Unstandardized regression coefficients compare the power condition to the equal-control condition. * $p = .024$.

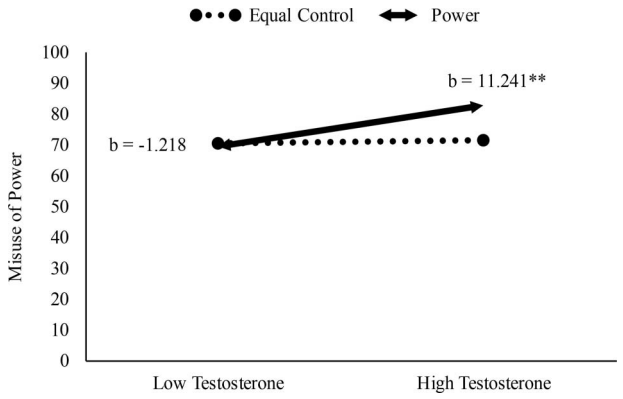

Figure 2. Being assigned to a position of power (vs. equal control) over a group task heightened reported misuse of power among high-testosterone (+1 *SD*) but not low-testosterone (−1 *SD*) participants. Unstandardized regression coefficients compare the power condition to the equal-control condition. ** $p = .008$.

This was not the case for Superiority/Arrogance scores: high-testosterone (+1 *SD;* 95% CI [−.661, 1.870]) and low-testosterone (−1 *SD;* 95% CI [−2.080, .453]) participants; Self-absorption/Self-admiration scores: high-testosterone (+1 *SD;* 95% CI [−.694, 1.999] and low-testosterone (−1 *SD;* 95% CI [−.439, 1.536]) participants; or Leadership/Authority scores: high-testosterone (+1 *SD;* 95% CI [−2.111, .316]) and low-testosterone (−1 *SD;* 95% CI [−.460, 2.010]) participants. Hence, the effect of the power manipulation on self-reported misuse of power was mediated by increased Exploitative/Entitlement scores among participants with relatively high testosterone levels.

Discussion

We tested two self-related pathways that may help explain the corrupting influence of power. The first was that power corrupts because it leads people to think they are better than others (grandiosity pathway). The second was that power corrupts because it makes people feel entitled to special treatment (entitlement pathway). Those who enjoy power try to keep it, even at the expense of others (Maner & Mead, 2010; Mead & Maner, 2012a), so we predicted that power would be especially likely to foster entitled self-views among those with high testosterone.

Supporting the entitlement pathway, giving participants power (vs. equal control) over a group task increased scores on the Exploitative/Entitlement component of narcissism—but only among those with high testosterone. Furthermore, the power manipulation increased stated willingness to misuse power among high- but not low-testosterone participants. Inflated Exploitative/Entitlement scores among high-testosterone participants in the power (vs. equal-control) condition statistically accounted for heightened self-reported willingness to misuse power. Future research could examine whether these results depend on receiving social power *and* positive feedback, given that our manipulation endowed participants with both.

Consistent with previous work (Kipnis, 1972; Wojciszke & Struzynska-Kujalowicz, 2007), giving participants actual social power (vs. equal control) over a group task did not inflate self-views. The empirical divergence of Exploitative/Entitlement from the other narcissism factors is consistent with previous work (Emmons, 1984, 1987; Watson & Biderman, 1993). However, the manipulation check suggested that our power manipulation was relatively weak. A stronger power manipulation may produce different results.

Digit ratio did not moderate the effects of power. Although 2D:4D has been used as an indirect measure of in utero exposure to androgens, it has been suggested that the hormonal processes that give rise to 2D:4D may not be androgen-related (Voracek, 2014). Future research should continue to uncover the similarities and differences between 2D:4D and testosterone to better understand what overlapping psychological correlates they may have.

Broader Context

This article originated from Nicole L. Mead's interest in why people misuse their power. In early discussions, Nicole L. Mead and Roy F. Baumeister noted the striking similarity between the conduct of the powerful and the narcissistic, leading to the basic hypothesis of this work. Previous work has suggested that testosterone may predispose people to the corrupting influence of power (Bendahan et al., 2015) and has been theoretically linked to narcissism (Grijalva et al., 2015), so we investigated its moderating role in the current work.

Conclusion

Power is an essential component of social life. Although the corrupting nature of power long has been noted, the self-related processes responsible have remained an enigma. The current findings suggest that entitlement may be a missing piece of the puzzle. They indicate that although power does not turn everyone into corruptive tyrants, it does have the most pernicious consequences when it gets into the hands of those who want it the most.

References

Archer, J. (2006). Testosterone and human aggression: An evaluation of the challenge hypothesis. *Neuroscience and Biobehavioral Reviews, 30,* 319–345. http://dx.doi.org/10.1016/j.neubiorev.2004.12.007

Bendahan, S., Zehnder, C., Pralong, F. P., & Antonakis, J. (2015). Leader corruption depends on power and testosterone. *Leadership Quarterly, 26,* 101–122. http://dx.doi.org/10.1016/j.leaqua.2014.07.010

Brown, R. P., Budzek, K., & Tamborski, M. (2009). On the meaning and measure of narcissism. *Personality and Social Psychology Bulletin, 35,* 951–964. http://dx.doi.org/10.1177/0146167209335461

Case, C. R., & Maner, J. K. (2014). Divide and conquer: When and why leaders undermine the cohesive fabric of their group. *Journal of Personality and Social Psychology, 107,* 1033–1050. http://dx.doi.org/10.1037/a0038201

Emmons, R. A. (1984). Factor analysis and construct validity of the Narcissistic Personality Inventory. *Journal of Personality Assessment, 48,* 291–300. http://dx.doi.org/10.1207/s15327752jpa4803_11

Emmons, R. A. (1987). Narcissism: Theory and measurement. *Journal of Personality and Social Psychology, 52,* 11–17. http://dx.doi.org/10.1037/0022-3514.52.1.11

Fast, N. J., Gruenfeld, D. H., Sivanathan, N., & Galinsky, A. D. (2009). Illusory control: A generative force behind power's far-reaching effects. *Psychological Science, 20,* 502–508. http://dx.doi.org/10.1111/j.1467-9280.2009.02311.x

Giacomin, M., & Jordan, C. H. (2014). Down-regulating narcissistic tendencies: Communal focus reduces state narcissism. *Personality and Social Psychology Bulletin, 40,* 488–500. http://dx.doi.org/10.1177/0146167213516635

Grijalva, E., Newman, D. A., Tay, L., Donnellan, M. B., Harms, P. D., Robins, R. W., & Yan, T. (2015). Gender differences in narcissism: A meta-analytic review. *Psychological Bulletin, 141,* 261–310. http://dx.doi.org/10.1037/a0038231

Hayes, A. F. (2013). *Introduction to mediation, moderation, and conditional process analysis: A regression-based approach*. New York, NY: Guilford Press.

Hönekopp, J., Bartholdt, L., Beier, L., & Liebert, A. (2007). Second to fourth digit length ratio (2D:4D) and adult sex hormone levels: New data and a meta-analytic review. *Psychoneuroendocrinology, 32,* 313–321. http://dx.doi.org/10.1016/j.psyneuen.2007.01.007

Iacobucci, D. (2001). Quantitative marketing research. In D. Iacobucci (Ed.), *Kellogg on marketing* (pp. 195–211). New York, NY: Wiley.

Keppel, G., & Wickens, T. D. (2004). *Design and analysis: A researcher's handbook* (4th ed.). Upper Saddle River, NJ: Pearson Prentice Hall.

Kipnis, D. (1972). Does power corrupt? *Journal of Personality and Social Psychology, 24,* 33–41. http://dx.doi.org/10.1037/h0033390

Lee-Chai, A. Y., Chen, S., & Chartrand, T. L. (2001). From Moses to Marcos. Individual differences in the use and abuse of power. In A. Y. Lee-Chai & J. A. Bargh (Eds.), *The use and abuse of power: Multiple*

perspectives on the causes of corruption (pp. 57–74). New York, NY: Taylor & Francis.

Maner, J. K., & Mead, N. L. (2010). The essential tension between leadership and power: When leaders sacrifice group goals for the sake of self-interest. *Journal of Personality and Social Psychology, 99,* 482–497. http://dx.doi.org/10.1037/a0018559

Maner, J. K., Miller, S. L., Schmidt, N. B., & Eckel, L. A. (2008). Submitting to defeat: Social anxiety, dominance threat, and decrements in testosterone. *Psychological Science, 19,* 764–768. http://dx.doi.org/10.1111/j.1467-9280.2008.02154.x

Manning, J. T. (2002). *Digit ratio: A pointer to fertility, behavior, and health*. New Brunswick, NJ: Rutgers University Press.

Mazur, A., & Booth, A. (1998). Testosterone and dominance in men. *Behavioral and Brain Sciences, 21,* 353–363. http://dx.doi.org/10.1017/S0140525X98001228

Mead, N. L. (2017, October 13). *Power-Narcissim-Corruption*. http://dx.doi.org/10.17605/OSF.IO/7E3C6

Mead, N. L., & Maner, J. K. (2012a). On keeping your enemies close: Powerful leaders seek proximity to ingroup power threats. *Journal of Personality and Social Psychology, 102,* 576–591. http://dx.doi.org/10.1037/a0025755

Mead, N. L., & Maner, J. K. (2012b). When me versus you becomes us versus them: How intergroup competition shapes ingroup psychology. *Social & Personality Psychology Compass, 6,* 566–574. https://dx.doi.org/10.1111/j.1751-9004.2012.00447.x

Mehta, P. H., Jones, A. C., & Josephs, R. A. (2008). The social endocrinology of dominance: Basal testosterone predicts cortisol changes and behavior following victory and defeat. *Journal of Personality and Social Psychology, 94,* 1078–1093. http://dx.doi.org/10.1037/0022-3514.94.6.1078

Raskin, R., & Terry, H. (1988). A principal-components analysis of the Narcissistic Personality Inventory and further evidence of its construct validity. *Journal of Personality and Social Psychology, 54,* 890–902. http://dx.doi.org/10.1037/0022-3514.54.5.890

Ronay, R., & von Hippel, W. (2010). Power, testosterone, and risk-taking. *Journal of Behavioral Decision Making, 23,* 473–482. http://dx.doi.org/10.1002/bdm.671

Schultheiss, O. C., & Stanton, S. J. (2009). Assessment of salivary hormones. In E. Harmon-Jones & J. S. Beer (Eds.), *Methods in the neurobiology of social and personality psychology* (pp. 17–44). New York, NY: Guilford Press.

Simmons, J. P., Nelson, L. D., & Simonsohn, U. (2013, January). *Life after p-hacking*. Meeting of the Society for Personality and Social Psychology, New Orleans, LA. http://dx.doi.org/10.2139/ssrn.2205186

Voracek, M. (2014). No effects of androgen receptor gene CAG and GGC repeat polymorphisms on digit ratio (2D:4D): A comprehensive meta-analysis and critical evaluation of research. *Evolution and Human Behavior, 35,* 430–437. http://dx.doi.org/10.1016/j.evolhumbehav.2014.05.009

Watson, P. J., & Biderman, M. D. (1993). Narcissistic Personality Inventory factors, splitting, and self-consciousness. *Journal of Personality Assessment, 61,* 41–57. http://dx.doi.org/10.1207/s15327752jpa6101_4

Winer, B. J., Brown, D. R., & Michels, K. M. (1991). *Statistical principles in experimental design* (3rd ed.). New York, NY: McGraw-Hill.

Wojciszke, B., & Struzynska-Kujalowicz, A. (2007). Power influences self–esteem. *Social Cognition, 25,* 472–494. http://dx.doi.org/10.1521/soco.2007.25.4.472

Received March 15, 2017
Revision received January 19, 2018
Accepted February 15, 2018 ■