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Living Large: The Powerful Overestimate Their Own Height

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Abstract

In three experiments, we tested the prediction that individuals' experience of power influences their perceptions of their own height. High power, relative to low power, was associated with smaller estimates of a pole's height relative to the self (Experiment 1), with larger estimates of one's own height (Experiment 2), and with choice of a taller avatar to represent the self in a second-life game (Experiment 3). These results emerged regardless of whether power was experientially primed (Experiments 1 and 3) or manipulated through assigned roles (Experiment 2). Although a great deal of research has shown that more physically imposing individuals are more likely to acquire power, this work is the first to show that powerful people feel taller than they are. The discussion considers the implications for existing and future research on the physical experience of power.

Keywords

perception, interpersonal interaction, social structure, judgment, spatial perception

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We care about the small people.

—BP Chairman Carl-Henric Svanberg
(Revkin, 2010, para. 2)

The chairman of BP generated a firestorm of controversy when he twice referred to the victims of the largest oil spill in U.S. history as the "small people." Although this quote may merely reflect an awkward turn of phrase, in the research reported here, we investigated the provocative possibility that powerful people literally misperceive their height relative to other people.

Height is often used as a metaphor for power: Powerful people "feel like the big man on campus," and "people look up to them." Developmental psychologists have suggested that a metaphorical association between power and height may take root very early in life, when, for instance, children are confronted with taller parents who have power over them (Schwartz, Tesser, & Powell, 1982), as well as during adolescence, when taller adolescents use their strength to physically coerce shorter ones (cf. Giessner & Schubert, 2007). This association continues into adulthood: Compared with shorter people, taller people earn higher salaries (Frieze, Olson, & Good, 1990) and are more likely to be found in high-status occupations (Egolf & Corder, 1991; Melamed & Bozionelos, 1992), to emerge as leaders (Higham & Carment, 1992), and to win presidential elections (Young & French, 1996; for an overview, see Judge & Cable, 2004).

These findings suggest that social perceivers judge tall people as more powerful than their shorter peers. For instance, when people expand themselves to take up more space, they are assumed to be dominant, whereas when they constrict themselves, they are perceived as submissive (Eibl-Eibesfeldt, 1989; Tiedens & Fragale, 2003). Further, people attribute higher status to individuals elevated in physical space, and they are able to identify powerful groups more quickly when those groups are positioned higher, rather than lower, than other groups (Schubert, 2005). In sum, there is strong evidence of a well-learned positive association between power and height (Higham & Carment, 1992; Schubert, 2005). An obvious prediction following from this research is that observers might use a person's height to infer his or her power; this is not an unreasonable assumption given the robust correlation between height and power in naturalistic settings (Judge & Cable, 2004).

In this report, we consider a more counterintuitive implication of the power-height association: The psychological

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experience of power may cause individuals to feel taller than objective measurement indicates they really are. This prediction was suggested by recent research showing that the literal meanings and abstract meanings of some metaphors may become intertwined to such an extent that the metaphors influence physical experience (e.g., Proffitt, 2006; Williams & Bargh, 2008). For example, metaphors associated with interpersonal warmth (e.g., "she has a warm personality") and morality (e.g., "he has clean hands") not only are grounded in the physical experiences of temperature and cleanliness, respectively, but also can be used to create contexts that induce changes in the experience of temperature (Zhong & Leonardelli, 2008) and cleanliness (Zhong & Liljenquist, 2006), respectively. In particular, the metaphoric use of size to connote power may have originated from a concrete link (e.g., taller people actually do possess and more easily acquire power) and then developed into an abstract, conceptual (i.e., bidirectional) relationship (Barsalou, 1999; Lakoff & Johnson, 1980).

In the experiments we report here, we extended existing research on the psychological experience of power into the domain of physical experience, investigating whether feeling powerful causes people to overestimate their height. In Experiment 1, we examined whether priming power affects judgments of one's own height relative to an inanimate object. In Experiment 2, we manipulated whether holding a position of power causes individuals to overestimate their own height. Finally, in Experiment 3, we examined whether priming power or powerlessness induces feelings of being larger or smaller, as reflected by the size of an avatar people choose to represent themselves in a second-life video game.

Experiment 1

Method

Sixty-eight participants (35 females and 33 males[1]) from the United States (mean age = 20.23 years) were randomly assigned to three experimental conditions (high power, low power, or control). Prior to the power manipulation, participants were asked to stand straight, with their backs against a wall, and their heights were measured. Participants then completed a recall task identical to the one used by Galinsky, Gruenfeld, and Magee (2003). This task was designed to manipulate participants' sense of power. Specifically, participants randomly assigned to the high-power condition were asked to recall an incident in which they had power over another individual, whereas participants assigned to the low-power condition were asked to recall an incident in which someone else had power over them. Participants randomly assigned to the control condition were instructed to recall and write about their experiences from the previous day. All participants were asked to write in detail on a lined sheet of paper. Finally, each participant was asked to estimate his or her height in relation to a pole that was adjusted to be exactly 20 in. taller than the previously measured height of that participant.[2]

Results and discussion

Preliminary analyses indicated no significant differences between conditions in participants' average actual height (high power: $M = 67.00$ in., $SD = 4.39$; low power: $M = 67.11$ in., $SD = 5.36$; control: $M = 66.73$ in., $SD = 4.15$), which was to be expected given the random assignment of participants to conditions. Nevertheless, participants' actual height might have affected their estimates, so we controlled for participants' heights in all analyses.

One-way analysis of covariance (ANCOVA) revealed that there was a significant difference in the estimates given by individuals in the high-power, low-power, and control conditions, $F(2, 64) = 4.16$, $p < .05$. As predicted, participants in the high-power condition judged the pole to be shorter relative to their own height (mean estimate of the difference between their own height and the pole's height = 19.09 in., $SD = 5.89$) than did participants in the low-power condition ($M = 25.23$ in., $SD = 8.66$), $t(42) = -2.74$, $p < .01$, and participants in the control condition ($M = 23.25$ in., $SD = 6.67$), $t(44) = -2.24$, $p < .05$. There was no significant difference between the estimates of participants in the control and low-power conditions, $t(42) = 0.50$, n.s. Thus, recalling an experience of power influenced individuals' judgments about the size of the pole relative to their own height. This finding supports our hypothesis.[3]

Experiment 2

Method

For our next experiment, 100 participants (60 females and 40 males) from the United States (mean age = 20.01 years) arrived at the laboratory in pairs. First, participants were asked to stand straight, with their backs against a wall, to have their heights measured. Participants were then told that they would take part in a business simulation in which they would be assigned the role of either manager or employee. This power manipulation has been used in previous studies (e.g., Anderson & Berdahl, 2002; Galinsky et al., 2003; Lammers, Galinsky, Gordijn, & Otten, 2008). Participants were told they would complete a leadership aptitude test that would determine which member of their pair would be assigned the manager role and which member would be assigned the employee role. In fact, participants received false feedback about their performance and were randomly assigned a role. The experimenter explained that the manager (high-power condition) would have complete control over the work process and would direct and evaluate the employee (low-power condition).

After this explanation, but before proceeding with the manager-employee task, participants completed several questionnaires that were ostensibly for a separate, unrelated study. The first questionnaire asked for personal information, including eye color and height. The questionnaire also included a power-manipulation check comprising five items; participants reported whether they felt influential, independent, powerful, unimportant, and subordinate ($\alpha = .95$). This inventory has been used extensively in previous research (e.g., Lammers &

Stapel, 2009). The experiment was stopped before participants performed the manager-employee simulation.

Results and discussion

As expected, participants in the high-power condition felt more powerful than those in the low-power condition, $t(98) = 4.06$, $p < .01$. As in Experiment 1, the average heights of the participants in the high-power ($M = 66.35$ in., $SD = 3.72$) and low-power ($M = 66.01$ in., $SD = 3.32$) conditions were not significantly different, but we controlled for participants' heights in subsequent analyses. An ANCOVA revealed that, as predicted, there was a significant difference in self-reported height between individuals in the high-power condition ($M = 67.01$ in., $SD = 3.60$) and those in the low-power condition ($M = 65.80$ in., $SD = 3.47$), $F(1, 97) = 23.60$, $p < .01$. In addition, participants in the high-power condition estimated their height to be significantly greater that their actual height, $t(49) = -5.32$, $p < .01$, whereas there was no significant difference between actual and reported heights for participants in the low-power condition, $t(49) = 1.70$, n.s. These results offer further support for our hypothesis that power influences individuals' judgments of their own height.

Experiment 3

Method

In our final experiment, 98 participants (43 females and 55 males) from the United States (mean age = 20.09 years) were randomly assigned to a high-power condition or a low-power condition. After participants completed a questionnaire about their personal appearance (e.g., eye color, height), we manipulated power using the same recall task that we used in Experiment 1. Next, participants were told that they would be playing a video game similar to the popular second-life game *The Sims*. A computer program directed them to create an avatar that "best represented them" before playing the game. Participants first chose the sex of their avatar and then its height. The height of the avatar was adjusted by toggling a dial, which made the avatar become visibly taller or shorter. The computer program recorded the chosen height on a scale from 1 (shortest) to 7 (tallest).[4] All participants chose their own sex as the sex of the avatar, which indicated that they followed the instructions to select an avatar that best represented them. Finally, we administered the same power-manipulation check as we did in Experiment 2 ($\alpha = .90$).

Results and discussion

The power-manipulation check showed that participants in the high-power condition felt more powerful than those in the low-power condition, $t(96) = 21.16$, $p < .01$. Preliminary analyses revealed that the average self-reported height from the questionnaire (completed before the power manipulation) did not differ between participants in the high-power condition ($M = 68.34$ in., $SD = 3.97$) and those in the low-power condition ($M = 68.61$ in., $SD = 4.25$). Participants' actual heights (a covariate in the model) were significantly related to the height they chose for the avatar, $F(1, 95) = 45.47$, $p < .001$, which was to be expected given that participants were specifically instructed to select an avatar to represent them in the game.

As predicted, the power manipulation significantly influenced the chosen height of the avatar even when the model controlled for participants' actual heights, $F(1, 95) = 11.66$, $p < .001$. Specifically, an ANCOVA revealed a significant difference in avatar height between individuals in the high-power condition ($M = 5.16$, $SD = 1.50$) and those in the low-power condition ($M = 4.14$, $SD = 1.84$). In addition, subjective feelings of power, as measured by the manipulation check, were positively correlated with the height of the avatar, $r = .30$, $p < .01$. Therefore, subjective feelings of power may have been the driving force behind individuals' erroneous perceptions of their own height in the previous experiments.

General Discussion

In three experiments, we investigated the association between power and perceptions of one's height. Using different manipulations of power and different measures of perceived height, we found that people literally perceived themselves as taller when they felt more powerful. Existing research has shown that knowing an individual's height can influence perceptions of his or her power in various contexts (Egolf & Corder, 1991; Judge & Cable, 2004; Schubert, 2005). We predicted and showed, however, that feeling powerful affects individuals' self-perceptions and physical experiences, and in particular, their subjective sense of height.

These findings may be a starting point for exploring the reciprocal relationship between the psychological and physical experiences of power. An interesting direction for future research would be to determine whether associations between power and size extend to other self-perceptions and self-categorization. When individuals elevate themselves physically, they not only shape how observers view their level of power relative to other individuals' levels of power (Schubert, 2005), but also, as our findings suggest, shape their self-views as powerful people. Thus, researchers could investigate the possibility that people who are short of stature might attempt to capture a sense of personal power by seeking out opportunities to physically elevate themselves relative to other people (Just & Morris, 2003). By extension, controlling individuals' physical positioning may be a relatively inexpensive and nonintrusive way to empower them and thereby fundamentally transform their psychological states. Hence, it may also be possible to situate people in higher places (e.g., an office in the top floor of the building) to raise their psychological sense of power.

Our findings also suggest the possibility of a reciprocal relationship between the conceptual understanding of power and the perception of physical characteristics associated with

power. For example, powerful people may expand themselves partly because they literally feel bigger and therefore feel they need more space than the powerless; in turn, the physical expansion reinforces their experience of power (Eibl-Eibesfeldt, 1989; Tiedens & Fragale, 2003). Furthermore, future studies should examine whether physical elevation will lead people to display behaviors associated with power, such as taking an action orientation (Anderson & Galinsky, 2006), speaking out of turn (Brown & Levinson, 1987), and objectifying other people (Gruenfeld, Inesi, Magee, & Galinsky, 2008). In sum, our results suggest that the beleaguered CEO of BP may have inadvertently provided a window into the physical experience of power.

Declaration of Conflicting Interests

The authors declared that they had no conflicts of interest with respect to their authorship or the publication of this article.

Notes

1. In the analyses for all three experiments, including gender as a covariate did not change the pattern of results, and gender did not have a significant effect in any analysis; therefore, we report the results of analyses that did not include gender as a covariate.
2. At the end of each experiment, all participants were thoroughly debriefed and asked to explain what they thought the experiment was about. None of the participants expressed any suspicion that the power manipulation and the dependent measure were related.
3. To check whether feeling powerful simply causes people to increase their estimates of height in general (e.g., everything, including the self, appears taller), we asked 65 additional participants to estimate the height of a person standing 10 ft away. (Participants completed the same power manipulation we used in Experiment 1.) The results showed that participants in the high-power condition judged the target to be shorter (M = 60.64 in., SD = 2.03) than did participants in both the low-power condition (M = 62.27 in., SD = 1.86), $t(42) = -2.60$, $p < .05$, and a control condition (M = 61.93 in., SD = 1.82), $t(41) = -2.04$, $p < .05$. There was no significant difference in estimates between participants in the control condition and participants in the low-power condition, $t(41) = 0.61$, n.s. Thus, participants who felt more powerful viewed targets as shorter, even when their own height was not an explicit point of comparison.
4. Consistent with several other studies that have shown null effects of power on mood (e.g., Anderson & Berdahl, 2002; Fast, Gruenfeld, Sivanathan, & Galinsky, 2009; Weick & Guinote, 2008), our results showed that the mood of participants (which we measured from items included in the questionnaire) was not significantly altered by the power manipulation. Moreover, when we controlled for mood, the effect of the power manipulation remained significant.

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