2011

Living Large: The Powerful Overestimate Their Own Height

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Keywords
power, height, self-perception

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Word count (text + endnotes) = 2,443

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IN PRESS, PSYCHOLOGICAL SCIENCE

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Three experiments tested the prediction that individuals' experience of power influences perceptions of their own height. Power decreased judgments of an object's height relative to the self (Study 1), made participants overestimate their own height (Study 2) and caused participants to choose a taller avatar to represent them in a second-life game (Study 3). These results emerged regardless of whether power was experientially primed (Study 1 and 3) or manipulated through roles (Study 2). Although a great deal of research has shown that physically imposing individuals are more likely to acquire power, this work is the first to show that the powerful may actually feel taller than they are. The discussion considers implications for existing and future research on the physical experience of power.

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"We care about the small people."

- BP Chairman, Carl-Henric Svanberg

The Chairman of BP generated a firestorm of controversy when he twice referred to the victims of the largest oil spill in United States history as the "small people." While this quote may merely reflect an awkward turn of phrase, we investigate the provocative possibility that the powerful literally misperceive their height relative to others.

Height is an oft used metaphor for power: Powerful people "feel like the big man on campus" and "people look up to them." Development psychologists have suggested that a metaphorical association between power and height may take root very early as, for instance, children are confronted with taller parents who have power over them (Schwartz, Tesser, & Powell, 1982) and during adolescence taller children use their strength to physically coerce smaller children (cf., Giessner & Schubert, 2007). This association continues to be reinforced as taller people earn higher salaries (Frieze, Olson, & Good, 1990), are more likely to be found in higher 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).

This stream of research suggests that social perceivers judge the tall as more powerful than their shorter peers. For instance, when people expand themselves to take up more space, observers assume they are dominant, whereas when they constrict themselves, they are perceived by others as submissive (Eibl-Eibesfeldt, 1989; Tiedens & Fragale, 2003). Further, people attribute higher status to individuals elevated in physical space and they are able to more quickly identify powerful groups when those groups are positioned higher, rather than lower, than other

groups in space (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 based on this research is that observers might use a target's height to infer its power; not an unreasonable assumption given the robust correlation between height and power in naturalistic settings (Judge & Cable, 2004).

Here, we consider a more counterintuitive implication of the power-height association; that the psychological experience of power may cause individuals to actually feel taller than an objective measurement would indicate they really are. This prediction is suggested by recent research showing that the literal and the abstract meaning of some metaphors may become intertwined to such an extent that the metaphors themselves achieve a physical reality of their own (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) are grounded in physical experiences of temperature (Zhong & Leonardelli, 2008) and cleanliness (Zhong & Liljenquist, 2006) respectively. In particular, the frequent metaphoric use of size to connote power may have developed from a concrete link (e.g. taller people actually do possess and more easily acquire power) to a conceptual relationship on an abstract level (Barsalou, 1999; Lakoff & Johnson, 1980).

The current work extends existing research on the psychological experience of power into the realm of the physical to investigate whether feeling powerful causes people to overestimate their height. Experiment 1 examined whether priming power can affect the judgments of one's own height relative to an inanimate object. Experiment 2 manipulated whether holding a position of power causes individuals' to overestimate their own height. Finally, Experiment 3 examined whether priming power or powerlessness induces feelings of being larger or smaller as

reflected by the extent to which people chose the size of an avatar to represent them in a second-life videogame.

Experiment 1

Sixty-eight participants (35 females[i]) from the United States (M_{age} = 20.23) were randomly assigned to two experimental conditions (power: high versus low) or a control condition. To provide a control for actual height, participants were asked to stand straight with their backs against a wall and their height was measured in the first phase of the experiment, prior to the power manipulation. Participants then completed a second task which was designed to manipulate their sense of power; a manipulation of power identical to that used by Galinsky, Gruenfeld & Magee (2003). In particular, participants randomly assigned to the high-power condition were asked to recall an incident in which they had power over another individual while 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 day yesterday. All participants were asked to write about this incident in detail on a lined sheet of paper. Finally, participants were asked to estimate their size in relation to a pole which was adjusted to always be exactly 20 inches taller than their objective heights. [ii]

Results and Discussion

Preliminary analyses indicated no significant differences between conditions on the participant' actual average height ($M_{\text{high power}}$ = 67.00, SD = 4.39), ($M_{\text{low power}}$ = 67.11, SD = 5.36), (M_{baseline} = 66.73, SD = 4.15), which is to be expected given random assignment to conditions. Nevertheless, participants' own height might affect their estimates so we controlled for participants' heights. One-way analysis of co-variance (ANCOVA) revealed that there was a

significant difference in the estimates given by individuals in the high-power, low-power and baseline conditions, $F(2, 64) = 4.16$, $p < 0.05$. As predicted, participants in the high-power condition judged the object to be relatively shorter ($M = 19.09$, $SD = 5.89$) than did participants in the low power condition ($M = 25.23$, $SD = 8.66$), $t(42) = -2.74$, $p < 0.01$ or baseline condition ($M = 23.25$, $SD = 6.67$), $t(44) = -2.24$, $p < 0.05$. There was no significant difference in the height estimates of participants in the baseline and low-power condition, $t(42) = 0.50$, ns. Thus, recalling an experience of high power impacted individuals' judgments about the size of the object relative to their own height, offering support for our hypothesis.[iii]

Experiment 2

One hundred participants (60 females) from the United States ($M_{age} = 20.01$) arrived to the laboratory in pairs. First, participants were asked to stand straight with their backs against a wall and their height was measured. Participants were then told that their next task involved taking part in a business simulation in which they would be assigned either the role of 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 of the two participants would be assigned the manager role. Next, participants were randomly assigned to receive false feedback about their performance and assigned a role. The experimenter explained that the manager would have complete control over the work process and would direct and evaluate the employee. Participants were informed that, before proceeding with the manager-worker study, they would complete a separate, unrelated study, which involved completing a number of questionnaires. The first of these asked for personal information, including eye color and height.

Results and Discussion

We used a power-manipulation check ("I feel influential/independent/powerful/ unimportant/subordinate"; $\alpha = .95$) that has been used extensively in previous research (e.g., Lammers & Stapel, 2009). As expected, participants felt more powerful in the high- than in the low-power conditions, $t(98) = 4.06$, $p < 0.01$.

As in experiment 1, the average heights of the participants in the high-power ($M = 66.35$, $SD = 3.72$) and low-power ($M = 66.01$, $SD = 3.32$) conditions were not significantly different, but we still controlled for participants' heights. As predicted, ANCOVA revealed that there was a significant difference in the estimates self-reported by individuals in the high-power ($M = 67.01$, $SD = 3.60$) and low-power conditions ($M = 65.80$, $SD = 3.47$), $F(1, 97) = 23.60$, $p < 0.01$. In addition, participants in the high-power condition estimated their heights to be significantly greater that their actual heights, $t(49) = -5.32$, $p < 0.01$, whereas there was no significant difference between actual and reported heights for participants in the low-power condition, $t(49) = 1.70$, ns. These results offer further support for our hypothesis that power will impact individuals' judgments of their own height.

Experiment 3

Ninety-eight participants (43 females) from the United States ($M_{age} = 20.09$) were randomly assigned to a high-power or low-power condition. Power was manipulated in the same way as Experiment 1. After completing the questionnaire about their personal appearance (e.g. eye color, height) and then the recall task, participants were told that they would be playing a video game in second-life, similar to the popular second-life game the SIMS. The 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 the height. In every case, the sex of

avatar chosen by participants corresponded to their own sex, which indicated that all participants followed instructions to select an avatar that best represented them. 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 which ranged from 1 (the smallest) to 7 (the largest).[iv]

Results and Discussion

The power-manipulation checks (α = .90) used in Experiment 2 showed that participants felt more powerful in the high than in the low-power conditions $t(96) = 21.16$, $p < 0.01$. These findings offer further support for our hypothesis that power affects individuals' perceptions of their own size.

Preliminary analyses showed that the average self-reported heights of the participants in the high ($M = 68.34$, $SD = 3.97$) and low-power ($M = 68.61$, $SD = 4.25$) conditions were not significantly different. The covariate for participants' heights were significantly related to their choice of avatar size, $F(1, 95) = 45.47$, $p < 0.001$, which is to be expected given that participants were specifically instructed to select an avatar to represent them in the game. As predicted, the power manipulation did reveal a significant difference in choice of avatar size even when participants' heights were controlled in the model, $F(1, 95) = 11.66$, $p < 0.001$. Specifically, ANCOVA revealed a significant difference in the avatar size for individuals in the high ($M = 5.16$, $SD = 1.50$) versus low-power conditions ($M = 4.14$, $SD = 1.84$). In addition, subjective feelings of power as measured by the manipulation check was positively correlated with the height of the avatar, $r = 0.30$, $p < 0.01$. Therefore, as the results of Experiment 1 and 2 demonstrated, subjective feelings of power were the driving force behind individuals' erroneous perceptions of their own height.

General Discussion

In three studies, we sought to determine the association between power and perceptions of one's height. Using different manipulations of power and measures of perceived height, we found that people literally perceived themselves as taller when they occupied a more powerful position. Existing research has shown how knowing an individual's height can impact perceptions of their power in various contexts (Egolf & Corder, 1991; Judge & Cable, 2004; Schubert, 2005). We argued and showed, however, that feeling powerful also affects individuals' self-perceptions and physical experiences, in particular their subjective sense of size relative to others.

These findings may be a starting point for exploring the reciprocal relationship between the psychological and physical experience of power. An interesting direction would be to determine whether associations between power and size can be extended further to other self-perceptions and self-categorization. By elevating themselves to achieve greater height (Judge & Cable, 2004), targets are not only shaping how *observers view* their level of power relative to others (Schubert, 2005), but our findings suggest they are also shaping their *self views* as powerful people. For example, future research might 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 others (Just & Morris, 2003). By extension, controlling individual's physical positioning may be a relatively inexpensive and nonintrusive way to empower them and hence fundamentally transforms their psychological states. Hence, it may also be possible to situate a people in a higher place (e.g. an office in the top floor of the building) to raise their psychological sense of power.

The findings may also suggest a reciprocal relationship between individuals' conceptual

understanding of power and the perception of physical characteristics associated with power. For example, the powerful may expand themselves partly because they literally feel bigger in size and need more space; in turn, the physical expansion reinforces experienced power (Eibl-Eibesfeldt, 1989; Tiedens & Fragale, 2003). Furthermore, future studies should examine whether physically elevation will translate into individuals displaying behaviors associated with the powerful, such as action-orientation (Anderson & Galinsky, 2006), speaking out of turn (Brown & Levinson, 1987) and objectify others (Gruenfeld, Inesi, Magee & Galinsky, 2008). In sum, our results suggest the beleaguered CEO of BP may have inadvertently provided a window into the physical experience of power.

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Endnotes

[i] Gender was included as a covariate in the analyses for all of the studies. However, the results did not change and the covariate was not significant in any analysis; therefore, the variable was not included.

[ii] At the end of each experiment, all participants were thoroughly debriefed and asked to explain what they though the study was about. None of the participants expressed any suspicion that the power manipulation and the dependent measure were related.

[iii] 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 participants to simply estimate the height of a person standing 10 feet away. The results showed that participants in the high-power condition judged the target to be shorter ($M = 60.64$, $SD = 2.03$) than did participants in both the low power condition ($M = 62.27$, $SD = 1.86$), $t(42) = -2.60$, $p < 0.05$ and baseline condition ($M = 61.93$, $SD = 1.82$), $t(41) = -2.04$, $p < 0.05$. There was no significant difference between the baseline and low-power condition, $t(41) = 0.61$, ns. Thus, those who felt powerful viewed targets as shorter, even when their own height was not an explicit point of comparison.

[iv] Consistent with several other studies that have shown null effects of power on mood (e.g., Anderson & Berdahl, 2002; Weick & Guinote, 2008; Fast et al., 2009), our results showed the mood of participants was not significantly altered by the power manipulation. Moreover, when we controlled for mood, the effect of the power manipulation remained significant.