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FlashReport

Male susceptibility to attentional capture by power cues

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ABSTRACT

The present investigation explores the possibility that power has increased salience among males but not females. Evidence indicates that stimuli that are self-relevant or related to chronic goals are more likely to capture attention than neutral information. Across three studies we explore the possibility that the premium males place on power influences how they attend to their environment. Consistent with the common belief that power more readily captures their attention, results indicate that males “dwell” longer on power-related cues (Experiment 1) and are more subject to distraction by task-irrelevant power cues (Experiment 2) than are females. Experiment 3 demonstrates that this increased salience has enduring social consequences by increasing the likelihood that males commit power-relevant material to memory.

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Introduction

At any moment there are a multitude of stimuli vying for people's attention. Which information captures their interest and ultimately gets acted on depends on their current motivational state. The perceptual system is sensitized to rapidly detect information that is related to both momentary needs and chronic goals, or that is in any way self-relevant (Bargh & Pratto, 1986; Higgins, 1996). The aim of the present investigation is to determine whether power has preferential access to the attention of those who prioritize its attainment.

Empirical evidence and everyday experience confirm that there are differences in how men and women approach power, the ability to provide or withhold valued resources or administer punishments (Fiske, 1993; Magee & Galinsky, 2009). In part this is because the social function males and females are expected and rewarded to play are quite different. While men are encouraged to attain power and to develop the traits and skills needed to function in positions of authority, women are encouraged to cultivate a sensitivity to others' feelings and develop communal skills (Broverman, Vogel, Broverman, Clarkson, & Rosenkrantz, 1972; Stein & Bailey, 1973). Social-role theories (e.g., Eagly, 1987) contend that sex-typed normative beliefs specify the differential appropriateness and value of social behaviors for men and women. From this perspective, consensually held sex-typed norms not only define what a culture expects of males and females (Rosen & Jerdee, 1973), but are adopted as personal standards against which people

judge their own behavior (Grossman & Wood, 1992). As a consequence, people feel positive about themselves when they fulfill their social function by conforming to sex-typed norms and uncomfortable when they violate their prescribed social role (Wood, Christensen, Hebl, & Rothgerber, 1997). Power has greater value to males and plays a more self-defining role in their lives. Of interest to the present investigation is whether the heightened relevance of power for males translates into increased attentional capture by power cues? Across three studies, we demonstrate that males dwell longer on power-relevant material (Experiment 1), that males are more subject to distraction by power cues (Experiment 2), and that males are more likely to commit power-relevant material to memory (Experiment 3) than are females.

Experiment 1

To assess whether males dwell longer than females on power, we employed a rapid-serial-visual presentation paradigm (RSVP; Raymond, Shapiro, & Arnell, 1992). In this paradigm, stimuli are presented briefly and participants are instructed to identify targets that are differentiated in some critical way (e.g., font color) from the non-targets in the stimulus stream. Previous research has established that the identification of an initial target (T1) interferes with the identification of a subsequent probe target (T2) presented closely in time, a phenomenon that is called the “attentional blink” (AB). Of particular relevance to the present investigation is evidence that the magnitude of the AB—the frequency with which T2 is missed or “blinked”—increases with the personal relevance of T1 (Shapiro, Caldwell, & Sorensen, 1997). In the present investigation, we sought to determine whether the AB that males exhibit

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to power words, which is a measure of how long they dwell on power (Duncan, Ward, & Shapiro, 1994), is greater than the AB that females exhibit.

Methods

Participants and experimental design

Forty-six individuals from the Columbia University community (27 females) participated for monetary compensation (\$10). The experiment had a 2 (T1 word type: power, neutral) \times 7 (T2 probe position: 0, 1, 2, 3, 4, 5, 6) repeated-measures design with a single between-subject factor (participant gender: male, female).

Procedures and stimulus materials

Each trial began with a fixation cross for 500 ms, followed by a series of successively presented words. Each word was presented for 75 ms followed by an inter stimulus interval (ISI) of 25 ms. Words were displayed in the center of a black screen in a white (distracter) or a red (targets) font. Trials ranged in length from 12 to 22 words. The number of pre-T1 words ranged from 4 to 8. The number of pre-T2 words (i.e., words between T1 and T2) ranged from 0 to 6. Two hundred milliseconds after the last word was displayed, participants were prompted to identify the targets. Participants completed 120 RSVP trials. See [Supplementary Online Material \(SOM\)](#).

Stimuli consisted of 60 T1 words: 30 were power-relevant and 30 were neutral. The 60 T2 (probe) words and the 850 distracters had no association with the concept of power (see SOM).

Results and discussion

Results revealed a main effect of T1 type, $F(1, 45) = 5.29, p = .03$, such that detection of T2 words was generally lower following T1 power words than following T1 neutral words, and a main effect of probe position, $F(6, 40) = 25.54, p < .001$. Consistent with previous investigations of the AB, T2 detection rates were significantly lower earlier in the post-T1 processing window (at 100 and 200 ms) than later (300–700 ms), $F(1, 45) = 33.57, p < .001$ (see SOM).

To determine whether males dwell longer than females on T1 power words, we constructed a measure of power sensitivity using T2 detection rates at position 0 (100 ms) and at position 1 (200 ms) following T1 neutral words as a baseline from which T2 detection rates at position 0 (100 ms) and at position 1 (200 ms) following T1 power words were subtracted, respectively. High scores on this measure indicate greater impairments on T2 detection following T1 power words relative to T1 neutral words. Results revealed no difference in detection rates as a function of T2 probe position (position 0 & 1), $F(1, 44) < .01, p = .94$, and a significant main effect of gender, $F(1, 44) = 4.268, p < .05$. As shown in [Fig. 1](#), males exhibited a larger AB to power words than females. Males detected 7.4% fewer T2 probes after T1 power words than after T1 neutral words, which is a significant difference from zero ($t = -2.11, p < .05$; see SOM). In contrast, there was no such difference between T2 detection rates observed in female participants at either probe position (all t 's $< 1, ns$). These results indicate that males dwell longer on power than females, thus lending support for our hypothesis that power has greater significance among males.

Experiment 2

Increased dwell time is just one manifestation of heightened salience. As previously highlighted, attention helps perceivers selectively process prioritized information while blocking competing stimuli. When competing stimuli are related to chronic goals or self-relevant, however, they can distract even motivated perceivers from material they are trying to process. Experiment 2 tested the

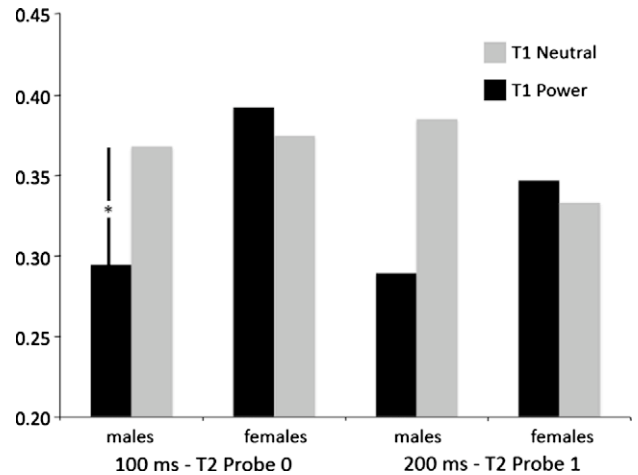


Fig. 1. T2 detection rates after T1 power and neutral words by gender and probe position; $p < .05$.

possibility that the personal salience of power renders males more subject to distraction by task-irrelevant power cues than females. Participants were administered a flanker task (Eriksen & Eriksen, 1974), which instructed them to classify a centrally presented target while ignoring flanking distracters. We predicted that among males, response competition from high-power incongruent flankers would be greater than response competition from low-power incongruent flankers.

Methods

Participants and experimental design

Thirty-eight individuals from the Columbia University community (19 females) participated for monetary compensation (\$10). Two participants with below-chance performance were removed from the analysis. The experiment had a single repeated factor (trial type: incongruent low-power flanker; incongruent high-power flanker; congruent high-power flanker; congruent low-power flanker) and a single between-subject factor (participant gender: male, female).

Procedures and stimulus material

Participants were told that they would see three names on a screen and that their task was to determine whether the middle (target) name belonged to a professor or to a student, while ignoring the outer two (flanking) names, which were always identical to each other on each trial. Stimuli were individualized for each participant and consisted of the last names of 10 of the participant's professors (high-power) and 10 of their classmates (low-power). Participants provided these names themselves 1 week prior to their experimental session.

It was emphasized to participants that they should complete the task as quickly and accurately as possible. Each trial began with a fixation cross (500 ms) which was replaced by the three names. Names remained on the screen until participants registered a response, using one of two appropriately labeled keys. Participants completed 40 of each trial type for a total of 160 trials.

Results and discussion

Both accuracy data and reaction times (RTs) were submitted to a repeated-measures ANOVA with a single between-subject factor. Analyses of the accuracy data revealed a significant trial type by gender interaction on performance, $F(3, 32) = 3.02, p = .04$ and a

non-significant effect of trial type on performance, $F(3, 32) < 1$, *ns*. To unpack the interaction, we analyzed each of the six possible pair-wise comparisons across gender. Two significant effects emerged: a trial type by gender interaction for the high-power and low-power incongruent trials, $F(1, 34) = 6.98$, $p = .01$, and a trial type by gender interaction for high-power incongruent and low-power congruent trials, $F(1, 34) = 5.26$, $p < .03$. Males' performance on incongruent trials was poorer when the flanker name was high-power relative to low-power, $t(18) = 2.21$, $p = .04$. Results also revealed that classification of low-power targets (students' names) by male participants was marginally impaired when the flankers were high-power relative to when the flankers were low-power, $t(18) = 1.90$, $p = .07$. No such differences emerged with females (see Fig. 2). RT data revealed no significant gender by trial type interaction, $F(3, 32) < 1$, *ns*. Lending further support to the suggestion that power has increased salience among males, these findings indicate that males are more subject to distraction by task-irrelevant power cues than are females.

Experiment 3

Consistent with the proposal that power more readily captures the attention of males than females, results of the first two studies demonstrate that males "dwell" longer on power-related information and have greater difficulty ignoring task-irrelevant power-relevant information than females. Might this sensitivity to power have lasting social consequences? One fundamental problem confronting people in their everyday social environments is remembering previously encountered individuals. We suspect that among male perceivers, power is one of the factors that moderates person memorability. To determine whether the bias males have for power extends to social targets, we administered a memory paradigm, measuring the probability that males and females remembered high-power and low-power individuals.

Methods

Participants and experimental design

Thirty-eight English speakers from the university community (23 females) participated for monetary compensation (\$10). The experiment had a 2 (target power: high-power, low-power) repeated-measures design with a single between-subject factor (participant gender: male, female).

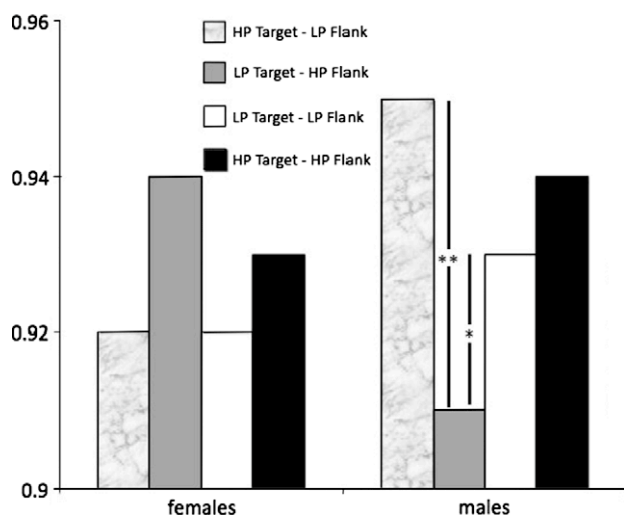


Fig. 2. Performance by trial type and participant gender; ** $p < .05$; * $p = .07$.

Procedures and materials

Participants were informed that they would read a workplace vignette and instructed to imagine themselves as the protagonist in the story. The vignette described five people with high-power positions (e.g., VP of marketing) and five people with low-power positions (e.g., intern). Names were counterbalanced across participants so that half of participants read a version of the vignette where five of the names were paired with high-power positions, while the other half read a version where those same five names were paired with low-power positions. All targets in the vignette were males. After reading the vignette, participants were given a 10-min intermediary task. Participants were then informed that they would be tested for their memory of the names of the people in the vignette. The recognition test included 30 names: 10 were from the vignette and 20 were new.

Results and discussion

Results revealed a significant target power by participant gender interaction, $F(1, 36) = 7.68$, $p < .01$. Pair-wise comparisons indicate that whereas female participants remembered the names of low-power and high-power individuals equally well, $t(22) = -1.16$, $p = .26$, males participants remembered significantly more high-power targets, $t(14) = 3.21$, $p < .01$; see Fig. 3. Consistent with the suggestion that power has greater salience among males, these results demonstrate that, unlike their female counterparts, males prioritize the commitment of high-power social targets to memory.

General discussion

Previous research on the relationship between power and attention has focused on how the subjective experience of being powerful affects executive functioning (Guinote, 2007a, 2007b; Smith, Jostmann, Galinsky, & van Dijk, 2008). Building on this work, the present investigation sought to determine whether power has increased salience among those who are socialized to seek its attainment. Consistent with this possibility, results indicate that males "dwell" longer on power cues and are more subject to distraction by power than females. In addition to influencing how males attend to their immediate environment, this increased salience has a lasting impact by increasing the probability that power-relevant social information is committed to memory.

To appreciate the significance of these results, one must consider the basic role of attention in perception. As it turns out, perceivers

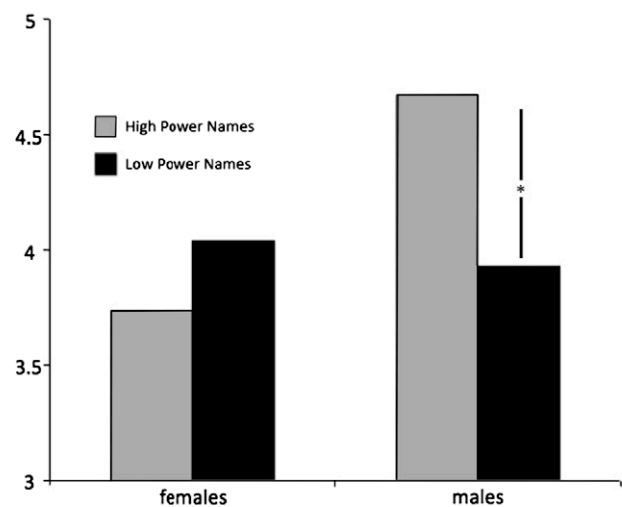


Fig. 3. Performance by target power and participant gender; * $p < .01$.

are ill-equipped to acquire conscious knowledge of all the stimuli engaging their senses at any moment in time. Attention—the processes that select a given perceptual input from among competing inputs—helps perceivers focus on high-priority stimuli and filter out materials of secondary importance (Pashler, 1998). Ultimately, attention dictates which perceptual information gains a “foothold in consciousness” (Shapiro et al., 1997, p. 291) and which fails to pass the threshold necessary for awareness. From this perspective, the focusing of attention represents a prioritization of information processing, with the allocation of resources being tightly coupled to the survival and motivational importance of the information. Our results suggest that the premium males place on power is manifested in their prioritization of the information reaching their senses.

While interpreted as a consequence of differential socialization, males' heightened power sensitivity may be the product of biology rather than social learning. Sexual selection theory (Darwin, 1871) explains gender differences in terms of divergent selection pressures on the sexes: females maximize fitness through selectivity and males through promiscuity. A reproductive advantage is conferred on males who outrival other males for access to females. From this perspective, heightened sensitivity to power is a trait selected by intrasexual male combat. In the absence of a clear psychological mediator [e.g., self-identification with prescribed sex role norms (Wood et al., 1997); strong power motivation (McClelland, 1975)], the source of this gender difference is debatable. Future research should explicate precisely how power comes to have salience among males.

Decades of research confirm that males are consistently more likely to occupy positions of power – to have asymmetric control over valued resources – than females. Attempts at elucidating the source of this discrepancy implicate a number of factors, including structural constraints (e.g., females lacking the “critical mass” necessary for a self-sustaining presence; Kanter, 1977), demands of family life (Greenhaus & Parasuraman, 1999), and discrimination (Eagly & Karau, 2002). Motivational accounts stipulate that part of the discrepancy can be explained by considering that males are socialized to value power and to engage in behaviors that lead to the attainment of control over resources (e.g., McClelland, 1975). Our results suggest that socialization contributes to the gap not just by reinforcing key behaviors in males but also by sensitizing them to note and recall information that may help speed their ascent to positions of control.

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Appendix A. Supplementary material

Supplementary data associated with this article can be found, in the online version, at doi:10.1016/j.jesp.2009.12.014.

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