EASE OF RETRIEVAL MODERATES THE EFFECTS OF POWER: IMPLICATIONS FOR THE REPLICABILITY OF POWER RECALL EFFECTS

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Past investigations show that asking participants to recall a personal episode of power affects behavior in a variety of ways. Recently, some researchers have questioned the replicability of such priming effects. This article adds to this conversation by investigating a moderator of power recall effects: ease of retrieval. Four experiments find that the effects of the power recall manipulation are reduced or even reversed when the power episode is difficult to recall. This moderation is demonstrated across three effects associated with power: confidence, disobedience, and unethical behavior. This moderation occurs regardless of whether ease of retrieval was measured or manipulated. These findings offer insight to the efficacy of the power recall manipulation and provide one explanation for failures to replicate (i.e., populations or situations differ in ease of retrieval). Overall, this work encourages a cumulative science by fine-tuning our understanding of when recalling experiences of power drive behavior.

Keywords: power, ease of retrieval, recall manipulation, priming

Power is a fundamental social force that drives thought and behavior, shapes interactions, and ultimately helps guide our lives. Defined as "asymmetric control

over valued resources in social relations" (Magee & Galinsky, 2008, p. 361), power can transform psychological functioning. For example, compared to powerless individuals, the powerful tend to act more often (Galinsky, Gruenfeld, & Magee, 2003), behave more selfishly (Dubois, Rucker, & Galinsky, 2015), negotiate more assertively (Magee, Galinsky, & Gruenfeld, 2007), express their true attitudes (Galinsky, Magee, Gruenfeld, Whitson, & Liljenquist, 2008), and resist the influence of others (Johnson & Lammers, 2012).

Power seems so ingrained in the psyche that even the mere exercise of writing about a past experience of having power can affect how people think about and act upon reality in the present. For example, in one experiment, Galinsky and colleagues (2003) found that recalling a past experience of power increased the probability that participants moved a fan that was blowing cold air in their face. Since this experiment, various studies have shown that recalling an experience of power can transform people in a wide variety of ways, making this manipulation one of the most used power inductions in the past decade (Galinsky, Rucker, & Magee, 2015).

CHALLENGES TO THE POWER LITERATURE

Recent concerns have been raised about the validity of and replicability of such "priming" manipulations (e.g., Kahneman, 2012; Newell & Shanks, 2014). These critiques have not been aimed at power research directly, but power is often manipulated using various priming procedures (see Galinsky, Rucker, & Magee, 2015). Given power researchers' reliance on priming to test the downstream effects of power, this current debate is relevant and requires consideration.

One response to this concern is to conduct more replications testing the reliability of past findings (Klein et al., 2014; Koole & Lakens, 2012). Although replications are valuable and can be informative, the current work uses an alternative approach to contribute to this debate. Specifically, we explore a moderator of *when* the power recall manipulation might succeed versus fail in activating power-induced feelings and behaviors. Identifying moderators represents a potentially cost-effective way of increasing reliability because it offers insight as to *why* effects may sometimes fail to replicate, even when a proposed relationship exists (Fiedler, Kutzner, & Krueger, 2012). Enhancing the manipulation's effectiveness offers a potential complement to using larger samples sizes (Funder et al., 2014). Furthermore, understanding when manipulations are more versus less effective contributes to building a cumulative science.

EASE OF RETRIEVAL

Given that organizations tend to adopt hierarchical structures that grant varying degrees of power (Michels, 1959; Sidanius & Prato, 1999; Weber, 1978) and people experience social roles associated with more or less power (Biddle, 1979; Ng, 1980),

it seems likely that the ease with which people can recall experiences of power might vary markedly between individuals. For those who frequently experience powerful positions or who for other reasons find it easy to think of their personal past, recalling such experiences may be easy, but for others this might prove difficult. The current article tests the hypothesis that a key variable in cognitive processing—the ease versus difficulty people experience when recalling past episodes of power—can moderate the effectiveness of the power recall manipulation on downstream cognition. We predict that the power recall manipulation is more likely to produce previously established effects when the recalled information comes to mind with little effort, but more likely to attenuate, or even reverse, prior effects when people experience difficulty in recalling.

This hypothesis is grounded in a large literature that demonstrates the effect of information on judgment can be affected by the ease with which that information is retrieved (e.g., Schwarz, 1998; Schwarz, Bless, Strack, Klumpp, Rittenauer-Schatka, & Simons, 1991; Schwarz & Clore, 1996; Tversky & Kahneman, 1973; Wänke, Schwarz, & Bless, 1995; Winkielman, Schwarz, & Belli, 1998). For example, Schwarz and colleagues (1991) asked participants to list either 6 or 12 examples of assertiveness. They reasoned that participants would experience greater difficulty in recalling 12 examples and that participants would conclude this difficulty stems from their own lack of assertiveness. Indeed, participants who provided 12 examples reported being less assertive than those who provided only 6 examples—despite generating more examples. A wealth of research has replicated this basic finding in domains ranging from product evaluation (Wänke, Bohner, & Jurkowitsch, 1997) to social policy opinions (Wänke, Bless, & Biller, 1996) to teaching evaluations (Fox, 2006).

Building on these findings, we propose that differences in ease of retrieval may also affect the power recall manipulation by signaling to people whether the recalled content is diagnostic (Petty, Briñol, & Tormala, 2002; Petty, Briñol, Tormala, & Wegener, 2007). When the experience of power is retrieved easily, participants might, consciously or unconsciously, misattribute this ease to the experience being diagnostic about one's power. As a result, these individuals' sense of power might be influenced by the recall task (Loersch & Payne, 2011). In contrast, difficulty in retrieving an experience of power might be misattributed to the information recalled not being diagnostic (Wheeler, DeMarree, & Petty, 2007, 2014; Wichman, Briñol, Petty, Rucker, Tormala, & Weary, 2010). If people need to spend considerable effort to retrieve an experience of power, this difficulty might reduce the impact of the manipulation on one's sense of power, even if the content of their thoughts emphasizes power (see also DeMarree, Loersch, Briñol, Petty, Payne, & Rucker, 2012).

OVERVIEW

The current research investigates whether ease of retrieval shapes the impact of the power recall manipulation across three domains previously found to be af-

fected by power: confidence, disobedience, and unethical behavior. Experiment 1 explores whether naturally occurring differences in ease of retrieval moderate the documented positive effect of recalling an experience of power on feelings of confidence (Anderson & Galinsky, 2006; Fast, Sivanathan, Mayer, & Galinsky, 2012; Lammers, Dubois, Rucker, & Galinsky, 2013; Magee et al., 2007; Schmid & Schmid-Mast, 2013). Using a similar design, Experiments 2 and 3 explore whether ease of retrieval moderates the documented negative effect of recalling power on obedience (Galinsky et al., 2008; Kraus, Chen, & Keltner, 2011; Lammers, Galinsky, Gordijn, & Otten, 2012) and the documented positive effect of power on the likelihood of engaging in unethical behavior (Dubois et al., 2015; Lammers, Galinsky, Dubois, & Rucker, 2015; Lammers, Stapel, & Galinsky, 2010). Finally, Experiment 4 provides a final test of our hypotheses by orthogonally manipulating both ease of retrieval and power.

GENERAL METHOD

Across experiments, participants were recruited on Amazon Mechanical Turk (minimum HIT approval rate 90%). We set sample size in advance in all studies, achieving slightly different *N* in some studies, as is common in online research. We did not look at any of the results prior to collecting all data. We report all data exclusions, all manipulations, and all measures in our experiments.

EXPERIMENT 1: EASE AND CONFIDENCE

METHOD

Participants and Design. Ninety-seven U.S. American respondents participated (55 men, 42 women, mean age 35.4 years) in return for U.S. $0.50. Given a lack of prior information on effect size, we set sample size a priori to 100. This provides us with enough power ($1 − \beta = 0.90$) to detect a medium effect of $f = 0.15$. Respondents were randomly assigned to one of two experimental conditions: high-power ($n = 48$) or low-power ($n = 49$) recall, with ease of retrieval serving as a measured factor.[1]

Power Manipulation. Participants first completed a power recall prime (see Galinsky et al., 2003 for details). High-power participants were instructed to recall a time "in which you had power over another individual or individuals." Low-power participants were instructed to recall a time "in which someone else had power over you or where you lacked power." In both conditions, power was defined as a

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1. For an unrelated study, Experiment 1 included questions about protest intentions *after* our measure of confidence and a control condition ($n = 55$) without ease of retrieval items. These were excluded due to their lack of relevance to the present hypotheses. In the control condition, feelings of confidence were roughly in the middle between the low-power and high-power conditions, $M = 5.26$, $SD = 1.25$. For exploratory reasons, Experiments 1 and 4 measured Generalized Sense of Power and confidence associated with the described events, *after* our main measures.

situation in which one person evaluated another person or controlled their ability to get something they wanted. All participants were instructed to describe the situation, what happened, and how they felt—entering a minimum of 300 characters before continuing.

Feelings of Confidence. We measured current feelings of confidence by asking participants how "confident," "certain," "self-assured," and "sure of yourself" they felt on 7-point scales anchored at "1 = not at all" and "7 = very much." All items were positively correlated and averaged into a single index (α = .92).

Ease of Retrieval. Participants first answered two items measuring how difficult it was to "retrieve" and "remember" the experience and two other items measuring how difficult it was to remember "the details of" and "the feelings during" the experience. All four items were completed on 7-point scales anchored at "1 = very difficult" and "7 = very easy." All items were positively correlated and averaged into a single index (α = .85). In all experiments ease of retrieval was measured after the dependent variable.

Manipulation Check. Finally, participants reported how they felt in their recalled incident using the items "powerful," "dominant," and "powerless" (reverse coded), on 7-point scales anchored at "1 = strongly disagree," and "7 = strongly agree." All items were correlated and averaged into a single index (α = .92). These items assessed the retrieved experience's content (i.e., whether the experience itself was associated with these items) as opposed to participants' current subjective sense of power.

RESULTS

Preliminary Analyses. Participants in the high-power condition reported greater power in their recalled situation, M = 5.31, SD = 0.97, than those in the low-power condition, M = 2.31, SD = 1.23, $t(95)$ = 13.27, $p < .0001$, d = 2.71, CI 95%$_{difference}$ = [2.55, 3.45]. Ease of retrieval did not differ between the high-power, M = 5.84, SD = 0.74, and low-power conditions, M = 5.66, SD = 0.65, $t(95)$ = 1.24, p = .22, d = 0.26. Ease of retrieval did not correlate with feelings of power, r = .14, p = .16. Together, these results suggest that natural variation in ease of retrieval occurred within condition but not between conditions.

Main Analysis. A regression analysis testing the effect of condition (low-power = 0, high-power = 1), ease of retrieval (standardized), and their interaction on feelings of confidence revealed a main effect of power, Beta = 0.20, B = 0.56, SE = 0.27, $t(93)$ = 2.07, p = .04, CI 95%$_{B}$ = [0.02, 1.09], and the predicted interaction, Beta = 0.33, B = 0.61, SE = 0.27, $t(93)$ = 2.23, p = .028, d = 0.46, CI 95%$_{B}$ = [0.07, 1.15]. See Figure 1. Using the Process macro (Hayes, 2008), we found that power increased feelings of confidence at the mean value of ease of retrieval, B = 0.56, SE = 0.27, $t(93)$ = 2.07, p = .04, and this effect was stronger at +1 SD above the mean, B = 1.17, SE = 0.39, $t(93)$ = 3.02, p = .003. The effect of power was reduced and not significant at -1 SD below the mean, B = -0.05, SE = 0.38, $t(93)$ = -0.13, p = .90.
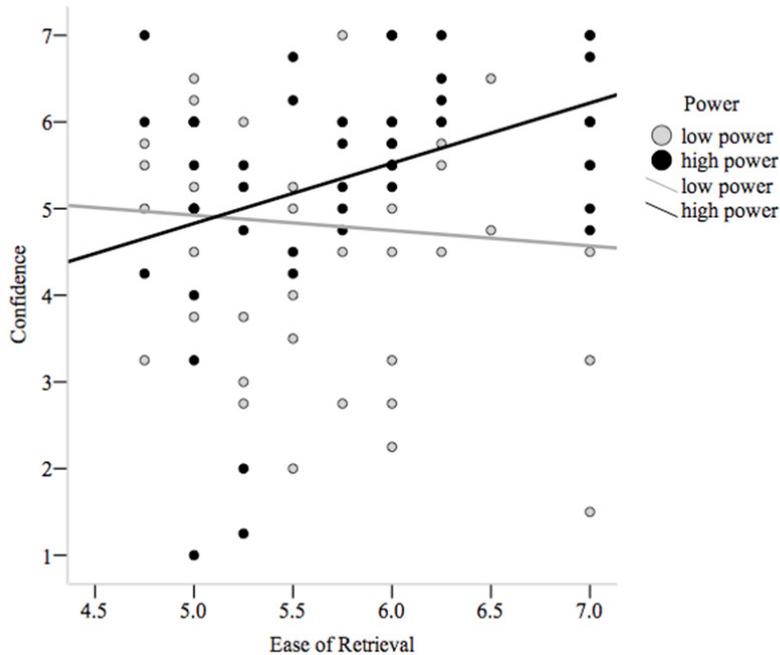
FIGURE 1. Study 1: Feelings of confidence (1–7) after recalling an experience of low (grey) or high (black) power, by ease of retrieval, including fit lines. At high ease of retrieval (+1 *SD*), participants in the high-power condition felt significantly more confident than those in the low-power condition, $p = .003$. The same was the case at average levels of ease of retrieval (at the Mean), $p = .04$. This effect was not significant at low levels of ease of retrieval (-1 *SD*), $p = .90$.

EXPERIMENT 2: DISOBEDIENCE

METHOD

Participants and Design. In return for $0.50, 146 American respondents participated (91 men, 54 women, mean age 34.5 years). Participants were randomly assigned to either the high-power ($n = 78$) or low-power condition ($n = 68$). Ease of retrieval was measured. This provides us with enough power ($1 – \beta = 0.90$) to detect small-to-medium effects of $f = 0.10$. The procedure was the same as that of Experiment 1, including the same power manipulation, ease of retrieval manipulation check ($\alpha = .85$), and power manipulation check ($\alpha = .87$), both averaged into two indices. The key difference was in our dependent measure.

Disobedience. Participants were given a scenario where they were requested by their landlord to move out of their current apartment as soon as possible. Participants indicated how fast they would comply with this request, between today (1) and in four months (10). Higher scores indicate stronger disobedience.

RESULTS

Preliminary Analyses. Participants in the high-power condition reported greater feelings of power, $M = 4.65$, $SD = 1.15$, than those in the low-power condition, $M = 2.37$, $SD = 1.06$, $t(144) = 12.44$, $p < .0001$, $d = 2.07$, CI 95%$_{difference}$ = [1.92, 2.64]. Ease
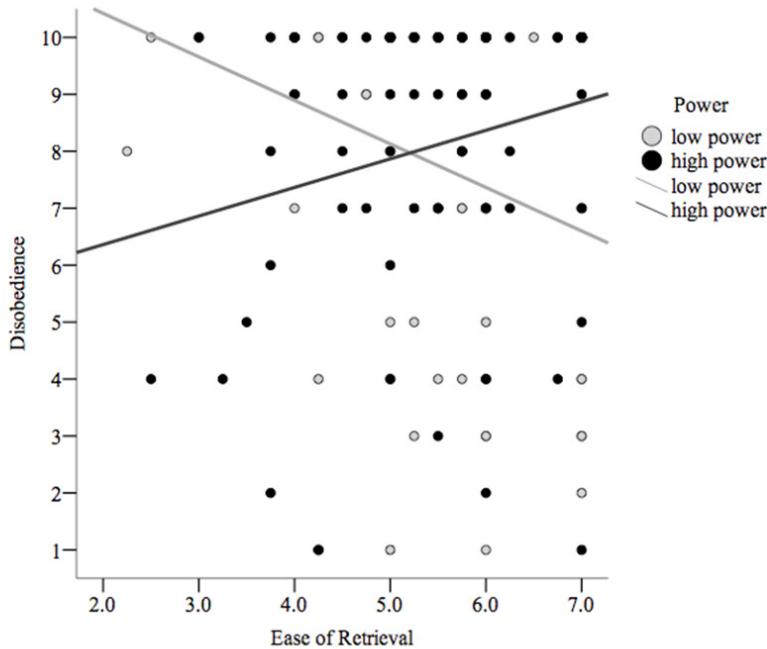
FIGURE 2. Study 2: Disobedience (1–10) after recalling an experience of low (grey) or high (black) power, by ease of retrieval, including fit lines. At high ease of retrieval (+1 *SD*), participants in the high-power condition were significantly more disobedient than those in the low-power condition, $p = .010$. This effect was not significant at average levels of ease of retrieval (at the Mean), $p = .494$, and even marginally reversed under low levels of ease of retrieval (-1 *SD*), $p = .097$.

of retrieval did not differ between the high-power, $M = 5.47$, $SD = 1.12$, and low-power conditions, $M = 5.42$, $SD = 1.01$, $t(144) = 0.29$, $p = .77$, $d = 0.05$, and ease of retrieval did not correlate with feelings of power, $r = .03$, $p = .68$.

Main Analysis. A regression analysis testing the effect of power, ease of retrieval, and their interaction on disobedience, showed an unexpected main effect of ease of retrieval, Beta = -0.30, $B = -0.82$, $SE = 0.34$, $t(142) = -2.38$, $p = .02$, CI $95\%_B =$ [-1.49, -0.14], no main effect of power, Beta = 0.06, $B = 0.30$, $SE = 0.44$, $t(142) = 0.69$, $p = .49$, CI $95\%_B = [-0.57, 1.18]$, but the predicted interaction between power and ease of retrieval, Beta = 0.38, $B = 1.35$, $SE = 0.45$, $t(142) = 3.01$, $p = .003$, $d = 0.51$, CI $95\%_B = [0.47, 2.24]$. See Figure 2. Using the Process macro (Hayes, 2008), we found that power increased disobedience among people who experienced high ease of retrieval (+1 *SD*), $B = 1.65$, $SE = 0.63$, $t(142) = 2.62$, $p = .010$, but this effect was not significant at the mean, $B = 0.30$, $SE = 0.44$, $t(142) = 0.69$, $p = .494$, and even tended to reverse among people who experienced low ease of retrieval (-1 *SD*), $B = -1.05$, $SE = 0.63$, $t(142) = -1.67$, $p = .097$.

EXPERIMENT 3: UNETHICAL BEHAVIOR

METHOD

Participants and Design. One hundred American respondents (60 men, 40 women, mean age 31.6 years) participated in a short survey in return for $0.50 in which

FIGURE 3. Study 3: Unethical behavior (Willingness to speed, 1–7) after recalling an experience of low (grey) or high (black) power, by ease of retrieval, including fit lines. At high (+1 *SD*) ease of retrieval, participants in the high-power condition were more inclined to show unethical behavior than those in the low-power condition, *p* = .002. This effect was not significant at average ease of retrieval (at the Mean), *p* = .28, and tended to reverse under low ease of retrieval (-1 *SD*), *p* = .101.

they were randomly assigned to either the high-power (*n* = 52) or low-power condition (*n* = 48), with ease of retrieval as a measured factor. We set sample size a priori to 100 participants, which offers us sufficient power (1 − β = 0.90) to detect a medium effect of *f* = 0.15. We used the same power manipulation, measure of ease of retrieval (α = .92), and power manipulation check (α = .95) as in prior experiments. We changed our dependent measure to unethical behavior.

Unethical Behavior. We measured unethical behavior using a measure from Lammers et al. (2010, Experiment 2). Participants indicated how acceptable it would be to disobey traffic regulations and break the speed limit to make it to their appointment despite being late. Specifically, participants were presented with a 7-point scale anchored at 1 = unacceptable and 7 = very acceptable. Higher scores indicated a greater willingness to engage in unethical behavior.

RESULTS

Preliminary Analysis. High-power participants reported greater power, *M* = 5.32, *SD* = 1.14, than low-power participants, *M* = 1.80, *SD* = 1.08, *t*(98) = 15.80, *p* < .0001, *d* = 3.17, CI 95%$_{difference}$ = [3.08, 3.96]. Ease of retrieval did not differ between the

high-power, $M = 5.04$, $SD = 1.49$, and low-power conditions, $M = 5.18$, $SD = 1.44$, $t(98) = 0.46$, $p = .65$, $d = 0.09$, and did not correlate with feelings of power, $r = -.03$, $p = .77$.

Main Analysis. A regression analysis testing the effect of power, ease of retrieval, and their interaction on unethical behavior showed a main effect of ease of retrieval, Beta = -0.57, $B = -0.90$, $SE = 0.22$, $t(96) = -4.12$, $p < .0001$, CI 95%$_B$ = [-1.34, -0.47], no main effect of power, Beta = 0.10, $B = 0.32$, $SE = 0.30$, $t(96) = 1.08$, $p = .28$, CI 95%$_B$ = [-0.27, 0.91], but the predicted interaction between power and ease of retrieval, Beta = 0.47, $B = 1.02$, $SE = 0.30$, $t(96) = 3.41$, $p < .001$, $d = 0.70$, CI 95%$_B$ = [0.43, 1.62]. See Figure 3. Power increased unethical behavior at +1 SD above the mean, $B = 1.34$, $SE = 0.42$, $t(96) = 3.19$, $p = .002$, but this effect was not significant at the mean, $B = 0.32$, $SE = 0.30$, $t(96) = 1.08$, $p = .28$, and even tended to reverse at -1 SD below the mean, $B = -0.70$, $SE = 0.42$, $t(96) = -1.66$, $p = .101$.

EXPERIMENT 4: MANIPULATED EASE OF RETRIEVAL

Thus far we have found ease of retrieval moderates three prior documented effects in the literature. However, as ease of retrieval was measured it is unclear as to whether the experience was due purely to ease of retrieval or another factor such as differences in structural positions of power among our participants that facilitated ease of recall. To address the problems inherent in our correlational designs, Experiment 4 directly manipulated ease of retrieval, using a classic manipulation that instructs participants to generate a few (easy) or many (difficult) examples (Schwarz et al., 1991) and then measured feelings of confidence as in Experiment 1. We expected that generating a few experiences of power (high ease of retrieval), would increase confidence more than generating many experiences (low ease of retrieval).

METHOD

Participants and Design. A total of 202 Americans (130 men, 72 women, mean age 30.4 years) participated in a short survey in return for $0.50, providing us with enough power $(1 - \beta = 0.90)$ to detect a medium effect of $f = 0.25$. Respondents were randomly assigned to a 2 (power: high versus low) by 2 (ease of retrieval: high versus low) between-participants design $(n_{high\text{-}high} = 58; n_{high\text{-}low} = 43; n_{low\text{-}high} = 58; n_{low\text{-}low} = 43)$.

Power and Ease of Retrieval Manipulations. Participants in the high ease of retrieval condition were asked to provide two experiences where they felt either high or low power. Participants in the low ease of retrieval condition were asked to provide eight experiences where they felt either high or low power. Participants were instructed to do their best, but they were allowed to end the task once they were unable to come up with more examples. Participants spent more than twice as long in the low ease of retrieval condition $(M_{seconds} = 199, SD_{seconds} = 166)$ compared to the high ease of retrieval condition $(M_{seconds} = 84, SD_{seconds} = 65)$. Participants also
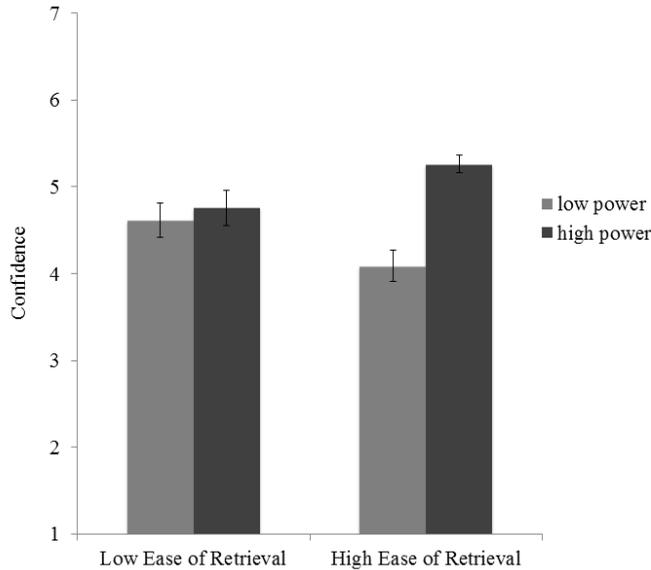
FIGURE 4. Study 4: Mean levels of confidence (1–7), as a condition of recalling eight (low ease of retrieval) or two (high ease of retrieval) experiences of low or high power. In the high ease of retrieval conditions, participants felt significantly more confident in the high-power than in the low-power condition, $p < .0001$, but this effect was not significant in the low ease of retrieval conditions, $p = .61$.

generated more than twice as much text in the low ease of retrieval condition ($M_{characters} = 285$, $SD = 173$) than in the high ease of retrieval condition ($M_{characters} = 115$, $SD = 74$). All but one (99.1%) of the participants in the high ease of retrieval condition completed both experiences ($M = 1.99$, $SD = 0.09$), while in the low ease of retrieval condition only 80.2% of participants were able to provide all eight examples ($M = 7.33$, $SD = 1.64$).

Feelings of Confidence. Participants completed the same measure of confidence as in Experiment 1. We computed an index based on the average of all items ($\alpha = .94$).

Manipulation Checks. Participants completed the same power manipulation check items as in prior experiments. We formed an index based on the average of all items ($\alpha = .94$). Next, participants completed a four-item ease of retrieval manipulation check. Two items asked how easy and challenging (reverse coded) it was to fill up all the boxes and two items asked how often participants felt frustration and irritation (both reverse coded) during the task, all on a 7-point scale. We averaged across all four items to form an index ($\alpha = .88$).

RESULTS

Manipulation Checks. Participants in the high-power condition recalled experiences of a more powerful nature ($M = 5.20$, $SD = 1.09$) than those in the low-power condition ($M = 2.18$, $SD = 1.01$), $t(200) = 20.44$, $p < .0001$, $d = 2.87$, CI 95%$_{difference}$ = [2.73, 3.31]. Participants also considered the overall task to be easier in the high ease of retrieval conditions, $M = 5.16$, $SD = 1.24$, than in the low ease of retrieval

conditions, $M = 4.08$, $SD = 1.27$, $t(200) = 6.03$, $p < .0001$, $d = 0.86$, CI 95%$_{difference}$ = [0.72, 1.43].[2]

Feelings of Confidence. A 2 (power: high versus low) by 2 (ease of retrieval: high versus low) ANOVA on feelings of confidence revealed a main effect of power, $F(1, 198) = 14.54$, $p < .0001$, eta^2$p = .07$, qualified by a significant interaction, $F(1, 198) = 8.83$, $p = .003$, $d = 0.42$, eta^2$p = .04$. No main effect of ease of retrieval emerged, $F < .01$, $p = .94$. See Figure 4. Within the high ease of retrieval conditions, participants felt more confident in the high-power ($M = 5.26$, $SD = 0.78$), than in the low-power condition ($M = 4.09$, $SD = 1.40$), $t(114) = 5.58$, $p < .0001$, $d = 1.03$, CI 95%$_{difference}$ = [0.76, 1.59], but in the low ease of retrieval condition participants felt equally confident in the high-power ($M = 4.76$, $SD = 1.33$) and low-power conditions ($M = 4.62$, $SD = 1.31$), $t(84) = 0.51$, $p = .61$, $d = 0.11$, CI 95%$_{difference}$ = [-0.42, 0.71].

GENERAL DISCUSSION

Four experiments found that recalling an experience of power only consistently produced the predicted effects when participants experienced high ease of retrieval during that recall. Consistent with past work, when retrieval was easy, power increased confidence (Experiments 1 and 4), disobedience (Experiment 2), and unethical behavior (Experiment 3). However, these effects were reduced or even reversed when people experienced retrieval difficulty. Although the observed effects of power were small, these studies appeared reasonably powered, $M_{observed\ power} = .749$, and overall provide evidence in favor of the role of ease of retrieval in shaping the effects of the power recall manipulation.

Although arguably the most utilized social psychological power manipulation (Galinsky et al., 2015), the processes underlying the power recall manipulation have remained largely untested. Conventionally, its effects are explained by the notion that it activates power-related thoughts (Galinsky et al., 2003). The present article suggests that this manipulation operates not only through the content of these recollections, but also through the metacognitive inferences and experiences that accompanies the manipulation (Wheeler et al., 2007, 2014; Wichman et al., 2010). If the recollections are difficult, they are potentially less representative for the person (Greifeneder, Bless, & Pham, 2011; Schwarz, 2011). Furthermore, difficulty in retrieval can induce more analytic information processing styles, which might also attenuate more automatic priming effects (Alter, Oppenheimer, Epley, & Eyre, 2007; Ruder & Bless, 2003).

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2. Additionally, conducting 2 (power: high versus low) by 2 (ease of retrieval: high versus low) ANOVAs on both manipulation checks showed that the manipulations only targeted their respective manipulation checks. Specifically, the power manipulation affected the power manipulation check, $F(1, 198) = 412.93$, $p < .001$, and this effect was not moderated by the ease of retrieval manipulation, $F(1, 198) = 0.01$, $p = .91$; while the ease of retrieval manipulation affected the ease of retrieval manipulation check, $F(1, 198) = 36.17$, $p < .001$, and this effect was not moderated by the power manipulation, $F(1, 198) = 0.33$, $p = .57$.

IMPLICATIONS FOR THE POWER RECALL MANIPULATIONS

The present work has potential implications for the current replicability discussion (Kahneman, 2012; Newell & Shanks, 2014), especially for efforts to replicate power research. We find evidence supportive of prior findings in the power literature when ease of retrieval is high. However, the fact that the manipulation can fail to produce an effect when retrieval is difficult opens up the door for false negatives and premature conclusions. If a population or situation produces retrieval difficulty, then a failure to replicate may not be indicative of a lack of any true relationship between a priming manipulation and a dependent variable of interest. That is, while failures to replicate may sometimes be indicative of a false positive, researchers must be mindful of the possibility of unmeasured population or situational moderators (see Fiedler et al., 2012).

Indeed, where Experiments 1 and 4 showed the expected main effects of power, Experiments 2 and 3 showed no significant main effects of power ($p = .49$ and $p = .28$, respectively, albeit directionally consistent). Yet we argue that it would be premature to conclude that these two studies offer no evidence of a possible relationship between the power recall manipulation and the dependent measures of interest. In fact, the expected relationships were present, but only among those participants who experienced high ease of retrieval. And this is exactly where the effect should be stronger, based on decades of ease of retrieval research (Schwarz, 1998; Schwarz et al., 1991; Schwarz & Clore, 1996; Tversky & Kahneman, 1973; Wänke et al., 1995). Of course, what is unknown is whether the lack of main effects in Experiments 2 and 3 is ultimately due to greater variability in ease of retrieval compared to the original experiments or other unexplored characteristics.

Nonetheless, this research suggests the potential value of including ease of retrieval in future research using the power recall manipulation. These concerns may be particularly important if the population that the sample is drawn from is anticipated to experience difficulty in recalling an experience of power. For example, difficulty in retrieving an experience of power might be more common among prisoners, blue-collar workers, and low-income consumers. It is also possible that a population of interest might experience situational difficulty of retrieval. For instance, students during finals week might possibly find it hard to think about an experience of power and control as they might be ruminating on how powerless and helpless they feel as their professors decide on their grades.

The present work may also have implications for a recent criticism by Sturm and Antonakis (2015). Specifically, these authors warn that the power recall manipulation may produce effects due to experimenter demand characteristics. That is, due to the nature of the recall task, participants may become aware that the researcher is interested in power. Although this certainly could occur and efforts to disguise a researcher's intent are warranted, Experiment 4 suggests that this may not be an inherent concern with the power recall manipulation. Specifically, if the power recall manipulation was purely driven by demand characteristics, it would seem like participants in the low ease of retrieval condition in Experiment 4 should have

been the most inclined to recognize the purpose of the power manipulation. These individuals were asked to generate eight instead of two examples; they spent more time, generated more text, and supplied more examples compared to participants in the high ease of retrieval condition. The goals of the experimenter should therefore be the most salient to participants in this low ease of retrieval condition, in terms of the emphasis on power, which based on a demand-characteristics explanation should produce the strongest effects of power. Instead, it showed the weakest effect.

IMPLICATIONS FOR OTHER MANIPULATIONS OF POWER AND OTHER PRIMING MANIPULATIONS

Although we only examined the power recall manipulation, other manipulations of power that require participants to engage in specific cognitive tasks might also depend on participants' experienced ease of retrieval. For example, the imagined hierarchical role manipulation of power asks people to either imagine being a boss in charge of employees or an employee led by a boss (Dubois, Rucker, & Galinsky, 2010). It seems possible that people may also differ in the ease versus difficulty with which they form such thoughts and that the accompanying ease may also affect the sense of power associated with the imagined hierarchical role manipulations.

Even power manipulations that are less cognitive in nature than the recall task may be affected by ease of retrieval. For example, consider the power posture manipulation that places participants in an expansive body pose associated with having power (Carney, Cuddy, & Yap, 2010). Analogous to our results, asking participants to hold an expansive high-power posture for a short period may induce feelings of power, whereas asking them to do so for a longer time may result in feelings of awkwardness or unnaturalness, thus paradoxically leading to lower feelings of power. In support of this possibility, a failure to replicate some of the effects reported by Carney and colleagues (2010) featured a methodological difference whereby participants were instructed to adopt the high-power pose for three minutes, compared to one minute in the original instructions (Ranehill, Dreber, Johannesson, Leiberg, Sul, & Weber, 2015). Of course, we do not suggest that ease of retrieval moderates all power manipulations or necessarily explains the inconsistencies between Carney and colleagues (2010) and Ranehill and colleagues (2015). Ease of retrieval simply represents one possible approach to examine potential moderators in establishing whether a particular theoretical relationship of interest can, or cannot, be reliably produced.

Although we only focused on power manipulations, our findings of the moderation of the power recall manipulation by ease of retrieval may have implications for other priming manipulations and aid in replication attempts in these areas as well. For example, previous studies have asked participants to recall a time in which they were socially excluded or included (Park & Maner, 2009) as well as

one's own ethical or unethical deed in the past (Zhong & Liljenquist, 2006). Conceptually, the effectiveness of such recall manipulations might also depend on the ease of retrieval associated with the event recalled. Future research is required to test this possibility, but measuring or manipulation ease may prove fruitful when trying to strengthen or moderate priming manipulations used in past work. Moreover, researchers seeking to strengthen the ability to test and/or detect a possible effect using recall primes might direct their efforts to design paradigms where ease of retrieval is set to be high.

REVERSING VERSUS REDUCING THE EFFECT

Although we consistently found that ease of retrieval moderated the effects of power, it did not systematically reverse the effect. This lack of reversal is atypical for the ease of retrieval literature (Haddock, Rothman, Reber, & Schwarz, 1999; Schwarz et al., 1991; Wänke et al., 1996; Weick & Guinote, 2008). One explanation for our finding is that people overall appeared to find it relatively easy to generate power experiences; across these studies the average reported feelings of ease never fell below 5 on a 7-point scale. This is important, because the power recall can potentially boost performance under pressure, for example during public speaking (Lammers et al., 2013; Schmid & Schmid-Mast, 2013). Yet if recalling power can paradoxically reduce performance, then this recommendation merits caution. The current findings suggest that further exploration is needed.

CONCLUSION

This research offers new insights into when the power recall manipulation is likely to affect cognition. The relationship between the power recall manipulation and three key effects associated with power—confidence, disobedience, and unethical behavior—weaken, disappear, or reverse under low ease of retrieval. Theoretically, these findings suggest that the effects of the power recall manipulation can depend on the ease with which these experiences are brought to mind. These results not only speak to the utility of the power recall manipulation, but they may also carry implications for priming more generally. As such, we believe these findings should be of interest to contemporary psychology in the context of the current replicability debate. Although a small step, acquiring a better understanding of reliable moderators remains essential to building a cumulative science.

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