

Feeling Depleted and Powerless: The Construal-Level Mechanism

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Abstract

Individuals exercise self-control daily to achieve desired goals; at the same time, people engage in social interaction daily and influence (feel powerful) or are influenced (feel powerless) by others. Does controlling the self have an unforeseen consequence for people's perception of their capacity to control others? Five studies—one correlational and four experimental—demonstrate that ego depletion from prior self-control determines one's personal sense of power; low-level, concrete mental construals account for this relationship. Our results showed that people with higher trait self-control reported a greater sense of power (Study 1). People who had depleted their self-control-related regulatory resources (vs. those who had not) experienced a lower sense of power (Study 2). The relationship between ego depletion and low sense of power was mediated by construal level (Study 3) and observed only when low-level, concrete construals were present, but not under high-level, abstract construals (Studies 4 and 5).

Keywords: self-control; self-regulation; ego depletion; sense of power; construal level

Feeling Depleted and Powerless: The Construal-Level Mechanism

Power is defined as disproportionate control over valuable resources (French & Raven, 1959; Goldhamer & Shils, 1939; Thibaut & Kelley, 1959) and the capacity to control and influence others or resources (Anderson, John, & Keltner, 2012). Power comprises not only one's social position (e.g., leadership status, material wealth) but also one's perception of influence and control over others. This latter construct is termed the *personal sense of power* (Anderson et al., 2012). A person's perception of power influences their behavior more than their actual power; for example, an individual who possesses power but experiences a low sense of power is less effective at influencing others than are those with a higher sense of personal power (Bandura, 1999; Chen, Langner, & Mendoza-Denton, 2009). Sense of power has profound impact on multiple aspects of human life (Keltner, Gruenfeld, & Anderson, 2003); thus, it is important to understand its origin. The purpose of our research is to examine an antecedent of one's personal sense of power, as well as the related mechanism.

The burgeoning power-related literature has focused narrowly on power's consequences. For example, the powerful propose creative solutions (Galinsky, Magee, Gruenfeld, Whitson, & Liljenquist, 2008); express, rather than suppress, their inclinations (Hecht & LaFrance, 1998); show implicit racial prejudice (toward African Americans, for instance; Guinote, Willis, & Martellotta, 2010), interpersonal insensitivity (Galinsky, Magee, Inesi, & Gruenfeld, 2006), self-interest (Inesi, Gruenfeld, & Galinsky, 2012; Maner & Mead, 2010), or improved performance on executive functioning (Smith, Jostmann, Galinsky, & van Dijk, 2008). In contrast, *antecedents* of sense of power have remained largely overlooked. Only a handful of studies have examined social position or control over resources as determinants of individuals' perception of their capacity to control others (Burt, 1992; Emerson, 1962; Fiske, 1993).

Our research focuses on ego depletion from prior self-control as an antecedent of sense of power. We ask: What happens to a person's sense of power after he or she controls the self? Individuals exercise self-control daily, suppressing or controlling impulses to meet personal or organizational goals (Logue, 1995). At the same time, people engage in social interaction daily and influence (feel powerful) or are influenced (feel powerless) by others. We propose that these two seemingly unrelated daily tasks may be interrelated. Moreover, our research elucidates a mental process through which ego depletion after self-control relates to sense of power, based on construal-level theory (Trope & Liberman, 2003, 2010), which is concerned with the mental representation of tasks or actions at a high (abstract thinking about *why*) or low (concrete thinking about *how*) level. Our proposed construal-level mechanism linking ego depletion and sense of power is useful because it is easy to shift the focus of our thinking (e.g., from how to why), allowing us, in turn, to maintain a sense of power after ego depletion—as our research will demonstrate. In a series of five studies using general population (Studies 1 through 4) and undergraduate samples (Study 5), we (1) elucidate the link between ego depletion and sense of power and (2) unearth the mental process underlying this relationship.

Ego Depletion and Construal Level

People often experience a strong impulse to enact behaviors that deviate from their personal or organizational goals. Examples include overspending, overeating and/or eating unhealthy foods, breaking promises, and expressing anger inappropriately. Such impulses need to be suppressed to maximize goal achievement. The ability to control such impulses, emotions, thoughts, and desires is called *self-control* (Muraven & Baumeister, 2000). A meta-analysis (De Ridder, Lensvelt-Mulders, Finkenauer, Stok & Baumeister, 2012) showed that self-control requires a cognitive process that facilitates choice between a valuable but delayed outcome and a

less valuable but immediate one (Ainslie, 1975). Self-control facilitates decisions in greater accord with individuals' long-term goals (Gottfredson & Hirschi, 1990). Self-control is seen as part of the cool-cognitive system, which includes executive functioning related to reasoned judgments and strategic plans, which help regulate impulses (Loewenstein, 1996; Metcalfe & Mischel, 1999). Thus, self-control emerges from cognitive efforts requiring regulatory resources (Baumeister, Bratslavsky, Muraven, & Tice, 1998; Baumeister, Heatherton, & Tice, 1994).

Importantly, the limited pool of self-control-related regulatory resources can be temporarily depleted (Muraven & Baumeister, 2000). Like a muscle, the capacity to control impulses can be strengthened and fatigued (Vohs, Baumeister, & Tice, 2008). Specifically, because regulatory resources are limited, effort focused on self-control diminishes the reserve of regulatory resources required for subsequent tasks. Thus, after people engage in any activity that requires self-control, they experience momentary *ego depletion*, which makes them feel cognitively fatigued and hampers their ability to execute subsequent tasks demanding self-control (Mead, Baumeister, Gino, Schweitzer, & Ariely, 2009; Muraven, Tice, & Baumeister, 1998).

In this regard, depleted individuals are left with limited resource capacity that makes them perceive a subsequent task as more difficult (Baumeister et al., 1994, 1998). According to the construal-level perspective (Trope & Liberman, 2003, 2010; Vallacher & Wegner, 1989), different levels of mental representation foster task-dependent planning and effectiveness of actions. For easy tasks, individuals adopt high-level, abstract construals focusing on primary goals related to the task (*why*) and its desirability. For difficult tasks, people adopt low-level, concrete construals associated with the task's specificity (*how*). The use of such a low-level representation enhances the feasibility of pursuing an action (Liberman & Trope, 1998; Vallacher

& Wegner, 1989). Thus, depleted individuals, perceiving a subsequent task as more difficult (Baumeister et al., 1994, 1998), adopt low-level, concrete mental representations of the subsequent task. Past research has demonstrated that ego depletion leads individuals to adopt a narrower view and approach to categorization, and more concrete language (Bruyneel & Dewitte, 2012)—these reflect low-level construals. Moreover, depleted individuals show increased preference for decision options associated with lower-level construals (e.g., feasibility over desirability, secondary features over primary features); this pattern was mediated by heightened focus on resource constraints under low-level construals (Wan & Agrawal, 2011).

Ego Depletion and Sense of Power

We predict that due to the effects of low-level, concrete construals, depleted individuals are likely to perceive they have insufficient resources to influence and control others, decreasing their sense of power. Construal-level theory (Trope & Liberman, 2003, 2010) suggests that construal level is related to multiple dimensions of psychological (temporal, spatial, and social) distance. High-level, abstract construals are associated with psychological distance, whereas low-level, concrete construals are related to psychological proximity. Under high-level construals, people perceive they have more time, more space, and broader social networks; thus they are likely to feel they have greater resources and to feel less dependent on others, wielding more power over them. In contrast, under low-level construals, people think they have limited time, little space, and narrower social networks; as such, they are likely to feel that they have fewer resources and are dependent on others. Thus, due to the effects of low-level, concrete construals, when people experience ego depletion following self-control they are likely to perceive they have limited resources for effectively influencing others. In sum, we hypothesize that (1) depleted individuals are likely to perceive a low sense of power; (2) construal level should

mediate the relationship between ego depletion and sense of power; (3) if indeed low sense of power emerges from low-level construals (preceded by ego depletion), then the effect of depletion on power should be observed only under low-level construals, but not under high-level construals.

The construal-level literature provides support for our hypothesis. When individuals focus on abstract (not concrete) concepts, they experience a sense of flexibility and choice, which implies that many options remain available; thus they feel a greater sense of control (Smith, Wigboldus, & Dijksterhuis, 2008). As such, individuals who focus on abstract concepts feel more powerful (Smith & Trope, 2006), dominant, assertive, and confident, rather than submissive, passive, and timid; they also tend to overestimate their sense of control, and prefer roles involving supervision of others (Smith, Wigboldus et al., 2008). These past findings are consistent with our hypothesis that ego depletion relates to low sense of power by altering depleted individuals' mental representation of a subsequent task into a low-level, concrete construal. Our proposed link between ego depletion and power, as mediated by construal level, has never been examined directly.

Overview of the Studies

We tested the proposed relationship between ego depletion from prior self-control and sense of power and its underlying construal-level mechanism in a five-study series. Study 1 used a correlational design to study participants' trait self-control (i.e., high level of dispositional self-regulatory resources) and sense of power. The remaining four studies used experimental designs to test causal relationships among ego depletion, construal level, and sense of power. Specifically, Study 2 examined the effect of depletion on sense of power. Study 3 assessed whether construal level would mediate the link between depletion and sense of power. Study 4 further tested the

mechanism using the moderation approach to assess whether low sense of power post-depletion would be observed only under low-level construals, but not under high-level construals. Finally, Study 5 sought to replicate our findings using alternate manipulations of depletion and construal level and an indirect measure of sense of power in an expected social interaction.

Study 1

Study 1 examined the relationship between trait self-control and sense of power. We predicted that individuals with high trait self-control (i.e., those who have higher dispositional self-regulatory resources) would have a high sense of power.

Method

We recruited participants through MTurk website (see Buhrmester, Kwang, & Gosling, 2011, for more on this research platform). Seventy-six US-based individuals (35 males, 41 females; mean age = 30.99, $SD = 10.6$) whose first language is English participated for nominal monetary compensation. Participants responded to a 36-item trait self-control measure on a scale from 1 (*not at all*) to 5 (*very much*) (Tangney, Baumeister, & Boone, 2004). Items included “I am good at resisting temptation,” “People would say that I have iron self-discipline,” and “I’d be better off if I stopped to think before acting” (reverse-coded) ($\alpha = .93$). Next they responded to an 8-item personal sense of power measure on a scale from 1 (*disagree strongly*) to 7 (*agree strongly*) (Anderson et al., 2012). Items included “In my relationship with others, I can get them to listen to what I say,” “In my relationship with others, I think I have a great deal of power,” and “In my relationship with others, even when I try, I am not able to get my way” (reverse-coded) ($\alpha = .94$). Finally they completed demographic measures.

Results and Discussion

We calculated a trait-self-control score for each participant by averaging his or her score

for all 36 items, with an overall higher score indicating higher trait self-control. We calculated sense of power scores in the same way, with higher overall scores indicating higher sense of power. Bivariate correlations showed that, consistent with our hypothesis, trait self-control ($M = 3.37$, $SD = .60$) and sense of power ($M = 4.84$, $SD = 1.20$) were positively correlated, $r(76) = .34$, $p < .003$.

This study provided initial evidence of the proposed relationship between self-control and sense of power. In the next study, we examine whether after exerting self-control, thus leaving only limited resources for subsequent self-control, people are likely to experience a low sense of power. Because Study 1 was correlational in design, its results cannot suggest a causal relationship between self-control and sense of power. Thus, all subsequent studies used an experimental design to yield causal evidence for our proposition that ego depletion following self-control exertion leads to low sense of power.

Study 2

Study 2 examined the causal effect of ego depletion on sense of power. Participants were randomly assigned to a depletion or baseline (no-depletion) condition, then responded to the sense of power measure used in Study 1. We predicted that participants in the depletion condition would experience a lower sense of power than those in the baseline condition.

Method

One-hundred-and-twenty-four US-based MTurk users whose first language is English (66 males, 58 females; mean age = 32.01, $SD = 12.87$) participated for nominal monetary compensation. Following Meade and Craig (2012), we used an instructed-response item (i.e., “Please ignore the question below about how you are feeling and instead check only the ‘none of the above’ option as your answer”) at the end of the study, to identify careless respondents (those

who failed to read instructions carefully) and exclude them from our analyses.

Half of the participants was randomly assigned to the depletion condition. Following the depletion manipulation (Wegner, Schneider, Carter, & White, 1987), participants were instructed to avoid thinking about a white bear during the task and to insert asterisks or the phrase “white bear” in their text input whenever they thought of a white bear, to focus their attention on the experimental manipulation. They were informed that the study’s purpose was to examine how people use words in sentences, and instructed to list all their thoughts for 6 minutes. Suppressing unwanted thoughts is a standard depletion exercise. Thought-suppression requires much more effort than letting thoughts flow naturally (Muraven et al., 1998). The other half of the participants was randomly assigned to the baseline (no-depletion) condition. Following Tice, Baumeister, Shmueli, and Muraven (2007), they were informed that participants in other conditions had to restrict specified thoughts, but they were free to think about anything. After 6 minutes, the online survey advanced to the next screen automatically and participants reported how effortful it had been to comply with instructions on a scale of 1 (*not at all*) to 9 (*very much*)—to check the effectiveness of the depletion manipulation (Baumeister et al., 1998). Then participants responded to the sense of power (Anderson et al., 2012) and demographic measures.

Results and Discussion

Manipulation checks. Participants in the depletion condition reported that complying with instructions was indeed more effortful ($M = 5.31$, $SD = 2.80$) than did those in the baseline (no-depletion) condition ($M = 4.08$, $SD = 2.55$), $t(122) = 2.57$, $p = .011$, $d = .46$, 95% CI = [.28, 2.19], indicating that our depletion manipulation was successful.

Sense of power. We averaged the eight sense-of-power-measure items to create a sense-of-power index ($\alpha = .94$). Participants in the depletion condition scored lower on the sense-of-

power index ($M = 4.62$, $SD = 1.31$) than those in the baseline condition ($M = 5.08$, $SD = 1.00$), $t(122) = 2.23$, $p < .03$, $d = .39$, 95% CI = [.05, .88] (see Figure 1), providing causal support for our hypothesis that ego depletion following self-control exertion reduces sense of power. Having established the relationship between ego depletion and sense of power, in the next studies we examine the construal-level mechanism underlying this relationship.

Study 3

The purpose of Study 3 is to examine directly the mediating role of construal level for the relationship between ego depletion and sense of power. We predicted that depleted participants would experience lower sense of power than non-depleted participants; this effect would be mediated by construal level.

Method

One-hundred US-based MTurk users whose first language is English (49 males, 51 females; mean age = 31.84, $SD = 12.12$) participated for nominal monetary compensation. We used the same screening procedure as in the preceding studies (Meade & Craig, 2012) to filter out careless responses.

Half of the participants was randomly assigned to the depletion condition and the other half to the baseline (no-depletion) condition; we created both conditions using the same method as in the preceding studies (Wegner et al., 1987). After 6 minutes, the task automatically ended. In addition to the single item measuring the effectiveness of the depletion manipulation (see Study 2), we added a manipulation-check item asking participants to report how tired they were during the task on a scale of 1 (*not at all*) to 9 (*very much*) (Baumeister et al., 1998). Participants responded to the two manipulation-check items for ego depletion (“effortful” and “tired”; $r = .37$, $p < .001$). Then participants responded to the construal-level measure (Behavioral Identification

Form; Vallacher & Wagner, 1989). The BIF assesses the level at which individuals construe certain activities, measuring tendency to view an activity (e.g., “Making a list”) in terms of the low-level, concrete actions related to *how* it is performed (“Writing things down”) or the high-level, abstract motivations for *why* it is performed (“Getting organized”). We first assigned scores of 0 for the low-level construal choice and 1 for the high-level construal choice for each of the actions in the BIF questionnaire ($\alpha = .71$). A construal-level-score was then obtained by summing each participant’s score for all BIF questions, with higher total scores indicating higher (abstract) construal levels and lower total scores indicating lower (concrete) construal levels. Finally, participants completed the sense of power measure used in the preceding studies (Anderson et al., 2012) ($\alpha = .89$).

Results and Discussion

Manipulation check. As expected, participants in the depletion condition reported a higher average score ($M = 4.43$, $SD = 1.61$) on the manipulation checks than those in the baseline (no-depletion) condition ($M = 3.37$, $SD = 2.01$), $t(98) = 2.86$, $p = .005$, $d = .58$, 95% CI = [.33, 1.80], confirming that the depletion manipulation was again successful.

Hypothesis testing. We predicted that depleted participants would experience a lower sense of power than non-depleted participants; this effect would be mediated by construal level. An independent-samples *t*-test showed a significant difference for sense of power between the depletion and baseline conditions, $t(98) = 2.07$, $p = .041$, $d = .41$, 95% CI = [.02, .78]. As predicted, depleted participants reported a lower sense of power ($M = 4.81$, $SD = 1.12$) than non-depleted participants ($M = 5.21$, $SD = .81$), replicating Study 2’s results. The effect of depletion manipulation on construal level was also significant, $t(98) = 2.49$, $p = .014$, $d = .51$, 95% CI = [.32, 2.81]. Depleted participants adopted a lower (concrete) construal ($M = 7.40$, $SD = 2.59$)

than non-depleted participants ($M = 8.96$, $SD = 3.50$; see Figure 2), replicating prior research (Bruyneel & Dewitte, 2012; Wan & Agrawal, 2011).

We tested the mediation effect of construal level using the bootstrapping procedure (Hayes, 2012, Model 4) based on a sample of 1,000 and 95% confidence intervals (Preacher & Hayes, 2008; Shrout & Bolger, 2002). The confidence intervals did not contain zero [-.2528, -.0058], indicating that the indirect effect of ego depletion on reduced sense of power through construal level was significant. Having demonstrated construal level as a mediator linking ego depletion and sense of power, we designed Studies 4 and 5 to reveal converging evidence for the construal-level mechanism using the moderation approach.

Study 4

Study 4 uses the moderation approach to seek additional evidence for our construal-level mechanism. Because Study 3 shows that construal level mediates the effect of ego depletion on sense of power, the following studies will show that a low-level construal is responsible for the effect. In Study 4, we predict that after self-control exertion the relationship between ego depletion and sense of power should be manifest only under a low-level construal, but not under a high-level construal. Participants undergoing the same depletion manipulation used in the preceding studies were primed with either a high- or low-level construal, then responded to the sense-of-power measure used previously. We used a 2 (ego depletion: depletion vs. no-depletion/baseline) x 2 (construal level: high vs. low) between-participants experimental design.

Method

One-hundred-and-twelve US-based MTurk users whose first language is English (60 males, 52 females; mean age = 32.54, $SD = 11.72$) participated for nominal monetary compensation. We used the same filtering procedure as in the prior studies (Meade & Craig,

2012).

Participants were randomly assigned to one of the four conditions in our 2 (ego depletion) x 2 (construal level) between-participants design. First, they performed the same ego-depletion task or baseline-condition task used in the preceding studies (Wegner et al., 1987). Subsequently, they were primed with either a high- or low-level construal. Following Fujita, Trope, Liberman, and Levin-Sagi (2006), participants in the high-level construal condition were instructed to specify eight superordinate category labels (e.g., “You eat pasta. Pasta is an example of _____” and “You get on the bus. A bus is an example of _____”). Participants in the low-level construal condition were instructed to specify subordinate exemplars of eight categories (e.g., “You listen to music. An example of music is _____” and “You wear some clothes. An example of clothes is _____”). Then participants completed the sense of power (Anderson et al., 2012) and demographic measures.

Results and Discussion

Manipulation check. As expected, participants in the depletion condition reported a higher average score ($M = 5.01$, $SD = 2.07$) on the manipulation checks (“effortful” and “tired”; $r(112) = .36$, $p < .001$) than those in the baseline (no-depletion) condition ($M = 4.18$, $SD = 1.89$), $t(110) = 2.21$, $p < .03$, $d = .42$, 95% CI = [.09, 1.57], suggesting that the depletion manipulation was again effective.

Hypothesis testing. A 2 (ego depletion) x 2 (construal level) ANOVA on sense of power showed a significant main effect of ego depletion, $F(1, 108) = 5.88$, $p < .02$, $\eta_p^2 = .05$, 95% CI = [.07, .70], indicating that depleted participants experienced a lower sense of power ($M = 4.66$, $SD = .85$) than non-depleted participants ($M = 5.03$, $SD = .79$), consistent with our prior results. Moreover, a planned comparison showed that, as predicted, there was a significant effect within

the low-level construal condition: Depleted participants subsequently primed with a low-level construal experienced a lower sense of power ($M = 4.57$, $SD = .84$) than non-depleted participants ($M = 5.05$, $SD = .78$), $F(1, 108) = 4.08$, $p < .05$, $\eta_p^2 = .04$, 95% CI = [.01, .95].

However, as expected, this pattern disappeared under the high-level construal condition:

Depleted participants subsequently primed with a high-level construal showed similar levels of sense of power ($M = 4.74$, $SD = .87$) as non-depleted participants ($M = 5.03$, $SD = .82$; $p = .17$).

Bootstrapping procedure (Hayes, 2012, Model 1) based on a sample of 1,000 and 95% confidence intervals showed a significant conditional effect of ego depletion on sense of power within the low-level construal condition [-.9462, -.0086], but not within the high-level construal condition [-.7036, .1268]. Thus, Study 4 provides converging evidence for the construal-level mechanism using the moderation approach. Ego depletion after self-control exertion reduces sense of power only under a low-level construal.

Study 5

Study 5 aims to replicate the results of Study 4 in a more controlled setting with different manipulations of ego depletion and construal level and an indirect measure of sense of power in an expected social interaction—to garner converging evidence for our hypothesis across measurement types. To measure sense of power, we used a simple buyer-seller negotiation scenario used in prior work on power and competitive interaction (Magee, Galinsky, & Gruenfeld, 2007). Research on negotiation indicates that the powerful are more aggressive in their first offer (Magee et al., 2007) and demand more and concede less than the powerless (De Dreu, 1995). We hypothesized that to the extent that depleted people experience low sense of power, they would be less aggressive in their first offer in a negotiation than non-depleted participants; this pattern would be observed only under a low-level construal, but not under a

high-level construal. We again used a 2 (ego depletion: depletion vs. no-depletion/baseline) x 2 (construal level: high vs. low) between-participants experimental design.

Method

One-hundred-and-one undergraduate students at a northeastern U.S. university (49 males, 52 females; mean age = 19.55, $SD = 1.82$) participated as part of a course requirement.

Participants were randomly assigned to one of the four conditions in our 2 (ego depletion) x 2 (construal level) between-participants design. Following the depletion manipulation (Schmeichel, 2007), all participants were instructed to write a short essay about a recent trip for 6 minutes. In the depletion condition, participants were instructed to avoid using the common letters A and N. In the baseline (no-depletion) condition, participants engaged in a writing task requiring minimal self-control: They were instructed to avoid the letters X and Z. Subsequently, participants reported how difficult they found the writing task and how much self-control they applied to avoid the indicated letters, on a scale of 1 (*not at all*) to 5 (*very much*)—to check the effectiveness of the depletion manipulation (Schmeichel, 2007).

Afterward, participants were primed with either a high- or low-level construal using Freitas, Gollwitzer, and Trope's (2004) procedures. Participants in the high-level construal condition were instructed to focus attention on *why* they do things they do (health improvement, specifically). They listed five reasons for why they maintain and improve physical health. In the low-level construal condition, participants were instructed to focus attention on *how* they do things, and to list five ways in which they maintain and improve physical health.

Then, participants were presented with a simple buyer-seller negotiation scenario as an indirect measure of sense of power (Magee et al., 2007): "You are buying a new car. The seller suggested \$20,000 for the first offer. What would be your counter offer?" The dependent

measure was the amount of money participants (buyers) suggest for the counter offer, where lower counter offers indicate a higher sense of power (Magee et al., 2007).

Results and Discussion

Manipulation check. As expected, participants in the depletion condition reported a higher average score ($M = 4.62$, $SD = .48$) on the manipulation checks ($r[101] = .60$, $p < .001$) than those in the baseline condition ($M = 2.47$, $SD = 1.03$), $t(99) = 13.47$, $p < .001$, $d = 2.67$, 95% CI = [1.83, 2.46]. This result confirmed that the depletion manipulation was effective.

Hypothesis testing. A 2 (ego depletion) x 2 (construal level) ANOVA on counter offer showed a significant main effect of ego depletion, $F(1, 97) = 4.73$, $p = .032$, $\eta_p^2 = .05$, 95% CI = [83.37, 1830.28], indicating that depleted participants made higher (less aggressive) counter offers ($M = 16068.63$, $SD = 1526.50$) than non-depleted participants ($M = 15120.00$, $SD = 2694.59$), suggesting that depleted participants experienced a lower sense of power. Planned comparison showed, replicating the results of Study 4, a significant effect within the low-level construal condition: Depleted participants subsequently primed with a low-level construal made higher counter offers ($M = 16204.55$, $SD = 1452.90$) than non-depleted participants ($M = 14923.08$, $SD = 2419.47$), $F(1, 97) = 4.04$, $p < .05$, $\eta_p^2 = .04$, 95% CI = [16.61, 2546.33]. However, as expected, this pattern disappeared within the high-level construal condition: Depleted participants subsequently primed with a high-level construal made counter offers ($M = 15965.52$, $SD = 1597.60$) similar to those of non-depleted participants ($M = 15333.33$, $SD = 3002.41$; $p = .30$). Bootstrapping procedure (Hayes, 2012, Model 1) based on a sample of 1,000 and 95% confidence intervals showed significant conditional effect of depletion on sense of power within the low-level construal condition [16.6052, 2546.3319], but not within the high-level construal condition [-572.7253, 1837.0931].

Thus, Study 5 provides additional robustness to our prior findings, suggesting that the experience of a low sense of power was not due to the lack of control over cognition (such as thoughts about a white bear) but rooted in ego depletion and low-level construal. Replicating the effects with different manipulations of ego depletion and construal level and a different measure of sense of power provides compelling evidence for the relationships among ego depletion, construal level, and sense of power.

General Discussion

People suppress strong impulses, emotions, and thoughts to avoid deviation from their goals. Our research suggests such self-control has an unforeseen consequence for people's perception of their capacity to control others, as related to their personal sense of power. Results from five studies revealed strong evidence for our hypotheses that ego depletion from prior self-control is an antecedent of personal sense of power, and construal level is the underlying mechanism. Specifically, individuals with higher trait self-control had a greater sense of power (Study 1), and those whose self-control-related regulatory resources were depleted reported a reduced sense of power (Study 2). Moreover, the effect of ego depletion on sense of power was mediated by construal level (Study 3) and observed only under a low-level construal, but not under a high-level construal (Studies 4 and 5). Thus, the direct link between ego depletion and sense of power remains when depleted individuals think concretely, but disappears when they think abstractly. Construal level is easy to manipulate (as we did) through a simple mental process, allowing depleted people to maintain a sense of power by adopting high-level mental representations.

Theoretical Contributions

The current research extends the power-related literature by elucidating a new

antecedent of sense of power: ego depletion from prior self-control. The power literature has focused primarily on the consequences of this construct, with antecedents given relatively little attention. Limited research examining antecedents of sense of power has demonstrated the effects of abstract thinking (Smith, Wigboldus et al., 2008), incidental exposure to words representing significant power and influential role or structural position, authority, and decision-making capacity (Smith, Jostmann et al., 2008). Our research sheds light on the factors beyond external and socio-structural variables that affect sense of power. We show that ego depletion resulting from self-control has an unforeseen effect on one's perception of power, with construal level as the underlying mental-process mechanism.

Our findings suggest that sense of power is not determined solely by one's social position or control over valued resources (Anderson et al., 2012), but can be affected by mental effort. Smith, Wigboldus et al. (2008) found that individuals' mental construal affects their sense of power. Our research adds to this by showing that mental construal links ego depletion resulting from self-control and sense of power. Additionally, Smith, Jostmann et al. (2008) found that a lack of power impairs the executive function of inhibition, which involves suppressing unwanted responses. Extending this work, our research demonstrated the reverse causality, such that the effort to suppress unwanted responses (i.e., ego depletion) leads to the experience of low sense of power.

Our research also enhances the self-control literature by elucidating a new consequence of ego depletion. We demonstrated that depletion leads individuals to experience a low sense of power. Past research has shown that depletion undermines judgments and decisions, including as related to dishonesty (Mead et al., 2009), smoking (Shmueli & Prochaska, 2012), alcohol consumption (Muraven, Collins, & Nienhaus, 2002), overspending (Vohs & Faber, 2007),

inappropriate sexual behavior (Gailliot & Baumeister, 2007), and dieting failures (Vohs & Heatherton, 2000). Our work demonstrated that effort focused on self-control diminishes individuals' perception of the resources demanded to control others, impairing their perception of their capacity to control others. In doing so, the current research shows that ego depletion has not only intrapersonal consequences but also relational ones.

Moreover, it is possible to reinterpret past self-control research through the lens of our current hypotheses and findings. For instance, previous work shows that depleted individuals demonstrated greater willingness to make sacrifices than others (Righetti, Finkenauer, & Finkel, 2013). Our research suggests that sense of power may be an underlying mechanism: Depleted people experience a low sense of power and consequently, as Righetti et al. (2013) show, sacrifice more than those who are not depleted. In addition, people with higher trait self-control are more satisfied with life because they are adept at dealing with motivational conflict and avoiding it in the first place (Hofmann, Luhmann, Fisher, Vohs, & Baumeister, 2013). Adding to this finding, our work implies that sense of power could potentially explain the happiness of those with high trait self-control. Because the powerful feel they can enact behaviors that align with their inclinations well, they tend to feel more authentic subjective-well-being than the powerless (Kifer, Heller, Perunovic, & Galinsky, 2013).

Limitations and Future Research

Our analysis using G*Power indicates that with an expected effect size of 0.5 and statistical power of 0.8, an independent-sample *t*-test and 2×2 design both require a sample size (*n*) of 128. Although we had planned to use a sample size of 128, we could not collect data for more than 128 participants in our studies because we filtered out careless respondents, and thus our analyses did not reach the 0.8 power level in all cases. Still our studies here ranged in power

from 0.5239 (Study 3) to 0.8751 (Study 1), all of which lie within or exceed the range of statistical power (0.45 to 0.65) for a typical study in personality and social psychology (Rossi, 2013), thus validating our findings. Nevertheless, our results should be interpreted with caution in consideration of potential power issues.

Another limitation is that all studies in the current research relied on self-reported measures of sense of power. Because we focused on *subjective* sense of power as our dependent variable, the use of self-reported measurements was purposeful. Future research might extend our findings by examining sense of power as measured behaviorally, or the downstream consequences of sense of power. Because ego depletion influences sense of power, it is also likely to affect multiple power-related behaviors found in the literature, such as moral decision-making (Lammers & Stapel, 2009), display of emotion (Diefendorff, Morehart, & Gabriel, 2010), implicit prejudice (Guinote et al., 2010), creativity (Galinsky et al., 2008), interpersonal sensitivity (Galinsky et al., 2006), self-interest (Inesi et al., 2012; Maner & Mead, 2010) and authenticity and subjective well-being (Kifer et al., 2013). These represent rich veins of future research. As such, our research integrating the ego depletion and power literatures suggests new directions for future research within both.

Our findings may also suggest alternative explanations. It is possible that self-control exertion may lead to high, not low, sense of power, because controlling oneself is by definition associated with greater control, which is a form of power related to determining one's outcomes independent of external forces (Cartwright, 1959; Galinsky et al., 2008). However, our research focuses on power over others (Anderson et al., 2012), which is different from power over the self and generates differential effects (Lammers, Stoker, & Stapel, 2011). For example, when individuals experience a sense of power over others (our focus), they are more sensitive to social

environments; conversely, when people experience power over the self, they feel more independent and are less sensitive to social environments (Lammers et al., 2011). Future research might consider differential antecedents or consequences of power over the self and others. Moreover, sense of power related to coworkers could be different from that related to work leaders or close friends and family. Thus future research should examine the effect of ego depletion on relationship-specific sense of power.

It has been suggested that ego depletion is a process in which people's motivation and attention shift; moreover, once people gain sufficient control over themselves, they no longer want to control themselves as much as they did (Inzlicht & Schmeichel, 2012). Our research extends Inzlicht and Schmeichel's (2012) work by demonstrating that people adopt low-level construals when they are depleted, which could be seen as shifts in attention and motivation. In addition, depleted people exhibit lower control not only over the self but also over others. However, Inzlicht and Schmeichel (2012) argued that ego depletion would increase approach-motivated responding, which is a property of powerful, not powerless, people—a point contradicting our findings. Although approach-motivated impulses might increase under ego depletion, the question of whether approach-motivated behavior toward others would also increase awaits future research. Future work might investigate depleted people's motivation to approach toward and control over the self and others.

Future research could also study links between ego depletion and prosocial or antisocial behavior. Juvenile delinquency, such as aggression, alcohol use, and smoking, is likely prevalent among adolescents who lack mental capacity to control their behaviors. Similarly, due to their limited self-regulatory capacity, depleted individuals are more likely to engage in behaviors that offer immediate rewards or relate to hedonic experiences. Because they have exhausted

regulatory resources, they would be shortsighted and fail to consider their behaviors' negative consequences (Gottfredson & Hirschi, 1990). Depleted individuals fail to detect conflict between competing response options, which are generally in line with long-term goals or social norms; instead, they skip such assessment and tend to follow their impulses (Govorun & Payne, 2006). To the extent that depleted individuals are more likely to adopt low-level construals, they are more likely to consider short-term personal benefits than long-term goals (e.g., Förster, Friedman, & Liberman 2004; Wakslak, Nussbaum, Liberman, & Trope, 2008). As such, they are also less likely to pursue prosocial goals or social norms, which are considered to have abstract, intangible (high-level construal) value (Ledgerwood & Callahan, 2012), and would instead engage in antisocial behaviors providing easy or short-term (low-level construal) gratification of desires and thrilling experiences. Future research examining the effect of depletion on prosocial or antisocial behavior will expand our model or at least help delineate its boundaries.

Our research examined sense of power as a consequence of ego depletion. Future work might examine whether sense of power moderates or mediates the link between ego depletion and construal level. Prior research has shown that power moderates the effect of ego depletion (Guinote, 2007). Specifically, when people are instructed *not* to imagine an African American's typical day, they tend to perceive other African-Americans as reflecting stereotypes of poverty, laziness, and ignorance (Devine, 1989). Because suppressed thoughts become more accessible and prominent (Förster & Liberman, 2001), they contaminate subsequent perception and decisions. Guinote (2007) demonstrated that this rebound effect was manifest for people who experienced power, but not for those who did not. Moreover, to the extent that the relationship between power and abstract thinking is bidirectional (Smith & Trope, 2006; Smith, Wigboldus et al., 2008), sense of power may mediate the link between ego depletion and construal level.

Indeed, our exploratory bootstrapping analysis of Study 3 showed that low sense of power mediated the relationship between ego depletion and low-level construals (95% CI = [-.8391, -0.155]). Future work might examine whether sense of power moderates and mediates the influence of ego depletion on construal level, further elucidating interrelationships among ego depletion, construal level, and sense of power.

Practical Implications

Our findings suggest that organizations and managers should consider the impact of employees' ego depletion after self-control exertion on their sense of power. Self-control is required on the part of individuals to meet organizational goals. Thus, understanding psychological processes underlying self-control's impact on ego depletion and sense of power could help organizations form internal strategies. Specifically, if organizations find that a high sense of power suits their organizational culture, they should take into consideration the extent to which the work environment they promote demands employee self-control. An organization featuring many distractions from organizational tasks should recognize that employees must routinely exert significant self-control to stay on-task, leaving them feeling depleted and thus powerless for subsequent tasks, as we show. To mitigate this, managers could emphasize a task's goals, meaning, or related vision, to stimulate higher-level construals among employees, and help them maintain an adequate sense of power.

Alternatively, if organizations are unable to implement such means of encouraging high-level construal, they could establish environments and task contexts that harness potential benefits of employees' lower sense of power. For example, the powerless are known to be less selfish (Inesi et al., 2012; Maner & Mead, 2010), and to show less denigration (Georgeson & Harris, 2006), negative stereotyping (Guinote et al., 2010), and objectification toward others

(Gruenfeld, Inesi, Magee, & Galinsky, 2008). People who resist temptation to follow their self-interest-related instincts in favor of contributing to group goals are valuable assets. The current research sheds lights on important new ways that organizations and managers can understand the implications of their employees' daily use of self-control and its resultant ego depletion, in the context of construal level and sense of power.

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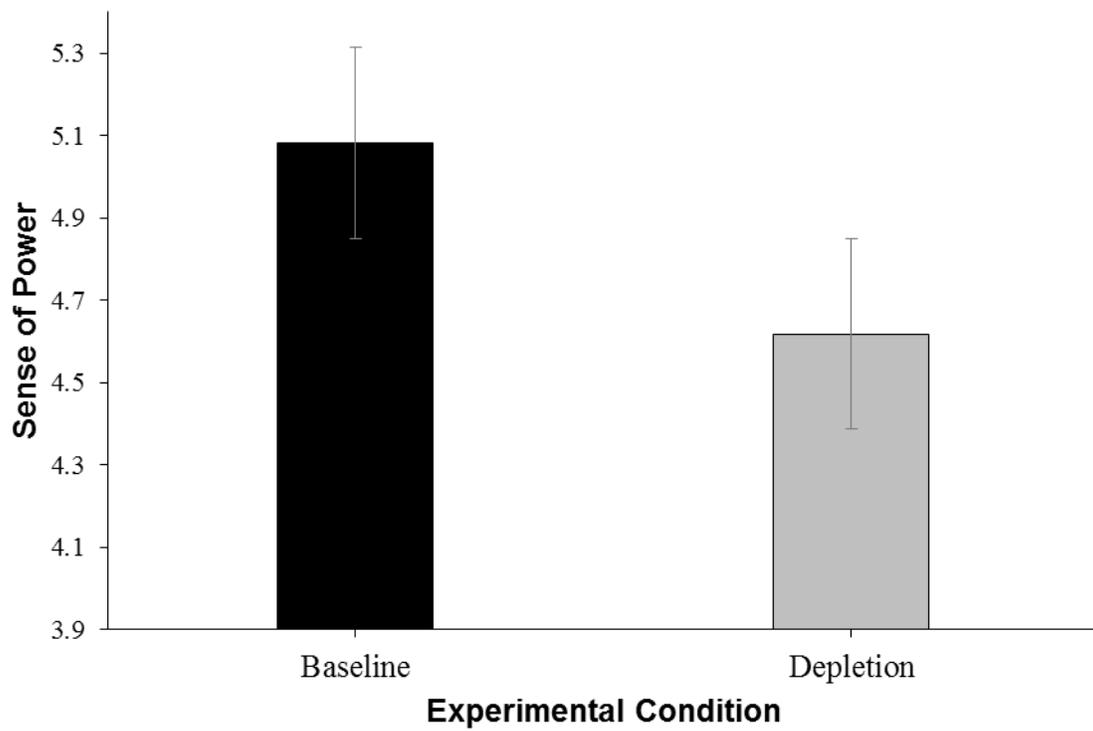


Figure 1. The main effect of ego depletion on sense of power (Study 2). Participants in the depletion condition reported a lower sense of power than those in the baseline (no-depletion) condition.

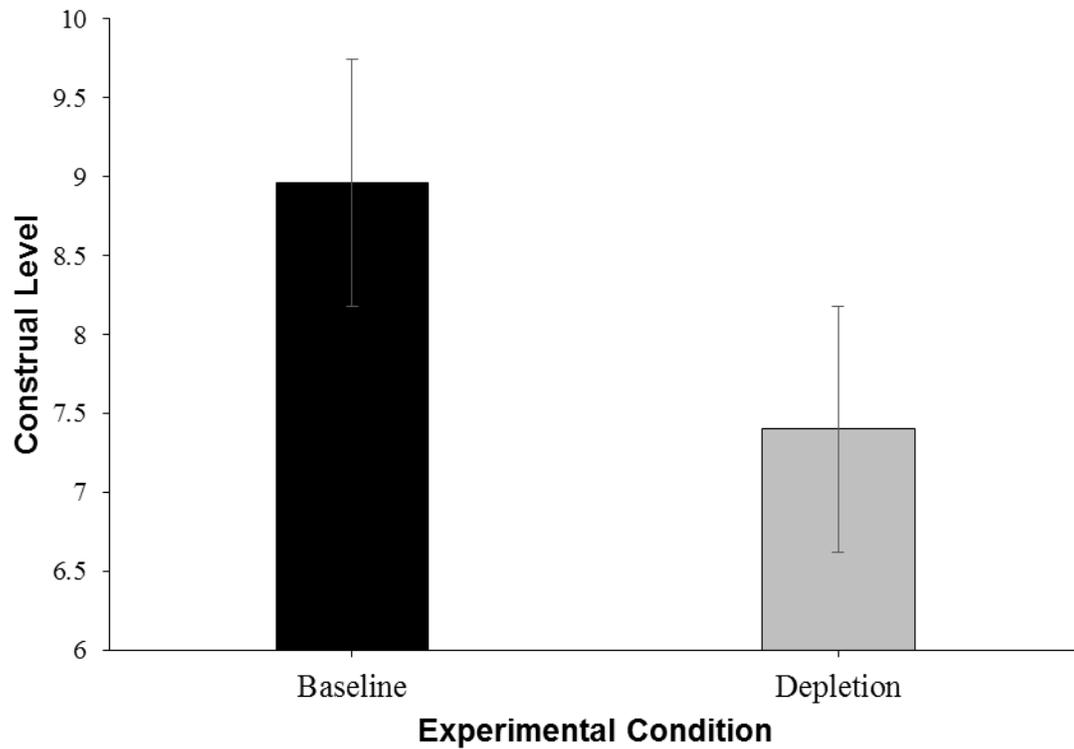


Figure 2. The main effect of ego depletion on construal level (Study 3). Participants in the depletion condition adopted a lower-level construal than those in the baseline (no-depletion) condition.