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WHO IS DEPLETED BY GOALS? THE ROLE OF A MOTIVATIONAL INDIVIDUAL
DIFFERENCE

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ABSTRACT

Applications of goal setting theory yield numerous beneficial performance outcomes (Locke & Latham, 1990). However, recent findings suggest that goal setting is not unconditionally positive (e.g., Schweitzer, Ordóñez, & Douma, 2004). Goal setting may cause self-regulation depletion, or a decreased ability to regulate oneself (Welsh & Ordóñez, 2014), but prior research has not addressed the role of individual differences in the relationship between goals and depletion. The purpose of the current study was to examine whether motivational traits, such as action/state orientation, result in some individuals being more or less depleted by goal setting. Action/state orientation, a trait-level response to goal-striving intentions and behaviors, was found to significantly moderate the relationship between goal structure and self-regulation depletion, such that individuals with a strong action orientation were less depleted than individuals with a state orientation in the high goal condition. These findings suggest that action/state orientation serves as a boundary condition in understanding the "dark" side of goal setting and its relationship to self-regulation depletion.

Keywords: goal setting, self-regulation, ego depletion, action/state orientation

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Introduction

Previous decades witnessed a surge in the use of goal setting theory in the workplace (Miner, 2003) because of its ability to increase effort, persistence, and performance on tasks (Locke & Latham, 2002). Although prior research has highlighted the effectiveness of goal setting, the potential of goal setting to produce undesirable outcomes has only recently been investigated (e.g., Barsky, 2008; Ordóñez, Schweitzer, Galinsky, & Bazerman, 2009; Schweitzer, Ordóñez, & Douma, 2004). Specifically, goal setting has been shown to facilitate unethical behavior (Schweitzer et al., 2004). Goal setting may cause unethical behavior through self-regulation depletion (Welsh & Ordóñez, 2014). Welsh and Ordóñez (2014) found that repeatedly setting high goals depletes individuals' abilities to self-regulate, causing performance on subsequent tasks to suffer. Welsh and Ordóñez (2014) recommended future research to investigate individual differences as boundary conditions in the relationship between goal setting and self-regulation depeletion, because "individual personality traits may strengthen or attenuate the connection between goals and depletion" (p. 88).

Answering their call, the current study's purpose was to explore action/state orientation, a motivational individual difference, as a moderator of the relationship between goal setting and self-regulation depletion. By further investigating and understanding the conditions and characteristics connected to self-regulation depletion, organizations and individuals may craft more informed policies and decisions that consider the effects of repeatedly setting specific and difficult objectives and standards.

Literature Review

<u>Goal Setting</u>

In the late 1960s, a new perspective on motivation emerged: goal setting theory. Locke (1968) argued that previous psychological research neglected the relationship between conscious goals, intentions, and task performance. To address this negligence, Locke (1968) proposed that an individual's conscious ideas regulate his/her actions such that 1) hard goals produce a higher level of performance than easy goals, 2) specific hard goals produce a higher level of performance than "do your best" goals, and 3) behavioral intentions regulate choice behavior. Early investigations found that Locke's goal setting theory dramatically increased performance in work settings (Latham & Baldes, 1975).

Goals affect performance through four mechanisms (Locke & Latham, 2002): direction of attention and focus, intensity of effort, persistence, and cognitive arousal (i.e., facilitating the development of strategies to "work smarter, not harder"). The evidence for the effectiveness of goal setting in increasing performance is robust, with hundreds of studies finding significant and beneficial outcomes from implementing goal setting theory (Locke & Latham, 1990; 2002).

Until recently, few researchers challenged the benefits of goal setting (e.g., Hollenbeck & Klein, 1987; Shapira, 1989). In their pioneering research, Schweitzer and colleagues (2004) investigated goal setting and unethical behavior on a sample of 154 undergraduates in a laboratory setting. Participants were tasked with creating words from a set of letters, and then instructed to score their work. Results showed that those with unmet goals were more likely to overstate their performance than those with "do your best" goals and students who failed to reach their goals by a small margin were more likely to falsely claim that they had reached their goals than students who failed to reach their goals by a large margin (Schweitzer et al., 2004).

Self-Regulation

Although a significant portion of behavior is the product of unconscious and automatic processes (Bargh, 1997), the portion of behavior which requires a deliberate, conscious, and controlled response may be disproportionately influential on the important long-term successes of individuals. Self-regulation, or the "ability to alter one's responses based on rules, goals, ideals, norms, plans, or other standards" (Baumeister & Vohs, 2016, p. 68) is consistently linked with positive outcomes, such as good adjustment, less pathology, better grades, and more interpersonal successes (Tangney, Baumeister, & Boone, 2004).

In the context of self-regulation, standards are ideas about how something should or should not be, which may include goals, norms, values, morals, laws, expectations, or previous responses. Within the strength model of self-regulation depletion, self-control and self-regulation may be used interchangeably, but self-control may also refer to an individual's trait-level capacity to self-regulate (Baumeister, 2003; Muraven & Baumeister, 2000). Ego depletion refers to a state of diminished self-regulatory resources. Individuals with depleted self-regulation resources are in a state of ego depletion and are less able to engage in self-regulatory behaviors in subsequent tasks (e.g., Baumeister & Vohs, 2016; Muraven & Baumeister, 2000). For example, people who were asked to suppress their emotions during an emotionally evocative film did not perform as well on a subsequent task as those who were not instructed to suppress their emotions (Muraven, Tice, & Baumeister, 1998). Similarly, participants who were instructed to suppress thoughts performed more poorly on a subsequent task than participants who were instructed to express their thoughts (Muraven et al., 1998). These results suggest that self-regulation relies on a finite resource, which experiences some reduction when exerted.

Early self-regulation research showed that behaviors which require self-regulation draw from a common and limited resource (Baumeister, Bratslavsky, Muraven, & Tice, 1998). According to the strength model of self-regulation, individuals may increase their self-control over time as a result of "exercising" their self-regulatory resource (Muraven & Baumeister, 2000; Muraven, Baumeister, & Tice, 1999). In other words, repeatedly engaging in self-regulatory behaviors initially leads to a state of ego depletion. Over time, however, the regulatory resource becomes more resilient to depletion and therefore becomes less depleted, strengthening the regulatory muscle (Oaten & Cheng, 2006). For example, if someone were trying to lose weight, it may be easy to resist the temptation of dessert after dinner. However, if the individual was thinking about and successfully resisting dessert throughout the day, his/her ability to self-regulate at dinner may be exhausted. Therefore, he/she may be in a state of ego depletion. Across many weeks and months of dieting, he/she may increase his/her capacity to self-regulate and not experience a marked depletion of his/her self-regulatory resources, as he/she has been exercising his/her self-regulation for an extended period.

Goal Setting and Self-Regulation

The four mechanisms of goal setting (attention, effort, persistence, and arousal) require self-regulation (Locke & Latham, 2002). Directing attention toward a task requires an individual to resist tasks that are not goal-related, and therefore requires an individual to regulate their behaviors and thoughts (Rothkopf & Billington, 1979). Setting goals also encourages increased effort. This may be physical, self-reported, or physiological effort (Bandura & Cervone, 1983; Bryan & Locke, 1967; Sales, 1970). Increasing effort on a task requires increased resistance of alternative thoughts or behaviors, which requires an individual to exert his/her self-regulatory resources (Baumeister & Vohs, 2016). Similarly, persisting on a task requires an individual to

repeatedly engage in self-regulation and to persevere in behaviors and thoughts that are goal-relevant (Gino, Schweitzer, Mead, & Ariely, 2011). A wealth of self-regulatory research indicates that these four mechanisms may lead to ego depletion (e.g., Baumeister et al., 1998; Baumeister & Vohs, 2016; Muraven & Baumeister, 2000). Despite their relatedness, no research had linked self-regulation depletion and goals until Welsh and Ordóñez (2014).

Welsh and Ordóñez (2014) argued the four mechanisms of goal setting (attention, effort, persistence, and arousal) are closely theoretically linked to depletion. For example, demanding goals were hypothesized to require more motivation, focus, and persistence in order to meet the goal than "do your best" (DYB) goals or low goals. This increased demand on an individual may require an individual to induce more depletion than would otherwise be induced in a DYB or low goal situation. Therefore, setting consecutively high goals may be more depleting than setting consecutively low or DYB goals due to the repeated use of self-regulatory resources because of increased motivation, focus, and persistence.

Welsh and Ordóñez (2014) administered five rounds of a problem-solving task (Mazar, Amir, & Ariely, 2008) to 159 undergraduate students in a laboratory setting. Each round of the task consisted of twenty matrices, each of which contained a set of twelve three-digit numbers (e.g., 8.92). In each matrix, only two numbers summed to exactly ten. Participants were given three minutes per round to find the numbers within each matrix that summed to ten. Those in the high goal condition were tasked with solving twelve matrices, which approximately 10% of students completed based on pretesting (Welsh & Ordóñez, 2014). Participants assigned to the low goal condition were tasked with solving three matrices, which appoximately 90% of the pretesting sample accomplished. Participants assigned to the third condition were told to do their best.

Welsh and Ordóñez (2014) found that goal structure affects ego depletion such that repeated high goals strongly deplete an individual's self-regulatory resource, followed by "do your best" and then low goals, in decreasing order. It was also found that depletion mediates the relationship between goal structure (e.g., high, low, DYB) and unethical behavior (i.e. misreporting self-scored performance).

Although they did not examine individual differences themselves, Welsh and Ordóñez (2014) suggested "individual personality traits may strengthen or attenuate the connection between goals and depletion" (p. 88). Following their recommendation, the present study's purpose is to explore action/state orientation, a motivational individual difference, as a moderator of the relationship between goal setting and self-regulation depletion. By further investigating and understanding the conditions and characteristics connected to self-regulation depletion, organizations and individuals may craft policies and make decisions that consider the effects of continuously setting highly demanding objectives and standards.

Action/State Orientation

Action/state orientation began as a way of explaining the dynamics of human action (Kuhl, 1984). At any given moment, an individual faces many conflicting goals, which are desirable and feasible. Traditional motivational theories are not able to account for the process of resolving conflicting action tendencies (Atkinson & Birch, 1970). Action control mechanisms allow individuals to commit to a single course of action, rather than changing course midway. In particularly demanding situations, action control mechanisms allow individuals to maintain the pursuit of their course of action (i.e., goal) rather than succumb to the demands of the situation.

For example, if a college student had the goal of passing a final exam, his/her course of action may include studying for the final exam. However, his/her peers may pressure him/her to go to a friend's party. If the individual were to engage his/her action control mechanism, he/she would be able to resist going to the friend's party and instead remain on his/her course of action and continue to study.

Action/state orientation is a trait-level response to goal-striving intentions and behaviors (Ruigendijk & Koole, 2014). Previous work has identified three dimensions of action/state orientation: preoccupation, hesitation, and volatility (Diefendorff, Hall, Lord, & Strean, 2000). Each dimension and the general notion of action/state orientation is a continuum with two opposing poles (Diefendorff et al., 2000). Each of the three dimensions (i.e. preoccupation, hesitation, and volatility) has an opposing pole in either the state-oriented or action-oriented direction. Preoccupation is opposite disengagement; hesitation is opposite iniatitive; volatility is opposite persistence. The relationships between the dimensions of action/state orientation and the general notion of action/state orientation are depicted in Figure 1.

State Orientation   **Action Orientation**

| Preoccupation	**Dimension 1: Preoccupation**	Disengagement
Hesitation	**Dimension 2: Hesitation**	Initiative
Volatility	**Dimension 3: Volatility**	Persistence
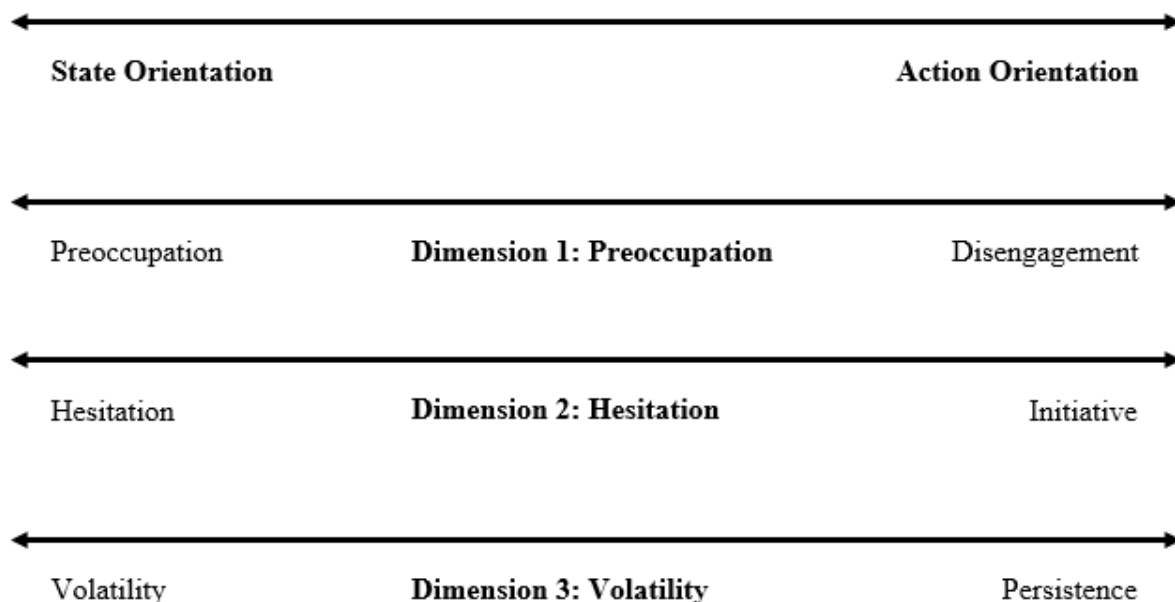
Figure 1. Theoretical diagram of action/state orientation and its three dimensions

The preoccupation dimension of action/state orientation indicates the degree to which individuals explicitly process information related to some past, present, or future state (Diefendorff et al., 2000). The action-oriented pole (disengagement) of the preoccupation dimension entails an individual's ability to detach from thoughts about alternative goals or undesirable events that may interfere with progress on the present task. The state-oriented pole (preoccupation) of the preoccupation dimension may consist of an individual's thoughts related to an unpleasant experience, which often includes failure (Kuhl, 1994).

The hesitation dimension of action/state orientation addresses the ease with which an individual is able to initiate goal-directed behaviors and activities (Diefendorff et al., 2000). The action-oriented pole (initiative) of the hesitation dimension would see more ease in initiating work on tasks and less perseveration about the task. The state-oriented pole (hesitation) of the hesitation dimension suggests difficulty in an individual's ability to begin a task (i.e. hesitate).

The volatility dimension of action/state orientation addresses an individual's ability to maintain the action-control mode throughout a task or intention and persist throughout the task without succumbing to distractions (Diefendorff et al., 2000). The action-oriented pole (persistance) of the volatility dimension suggests that individuals predisposed to an action-orientation would exhibit more persistance and focus on a task until its completion. In contrast, the state-oriented pole (volatility) of the volatility dimension refers to an individual's tendency, when predisposed toward a state orientation, to be easily distracted from a present task by an alternative one. The volatility of a state-oriented individual is not necessarily because of a definiciency in persistence, but an overactivity in the initiation of new tasks (Kuhl, 1984).

Individuals with an action orientation tend to disengage their action control mechanism in only the most demanding or threatening situations, which promotes rapidly initiating work on tasks, persisting on the current task, and easily detaching from thoughts about alternative goals or undesirable events. In contrast, state-oriented individuals tend to have difficulty initiating and persisting on tasks, as they are more distracted by thoughts about alternative tasks and tend to have an impaired ability to detach from thoughts about alternative goals or undesirable events. All of these short-comings cause state-oriented individuals to be less likely to maintain focus until a task is completed (Jostmann & Koole, 2010).

Individuals differ in their reliance on behavioral routines. For those that tend to be catastatic, or state oriented, established behavioral routines are relied on more frequently. This state-oriented position disengages the action control mechanism, which can be particularly beneficial during uncontrollable or uncertain situations (McIntosh, Sedek, Fojas, Brzezicka-Rotkiewicz, & Kofta, 2005). Individual differences appear in the points at which individuals disengage their action control mechanism in favor of relying on behavioral routines. During highly uncontrollable, uncertain, and threatening situations, nearly all people disengage the action control mechanism. However, moderately uncontrollable or threatening situations allow for individual differences in action versus state orientation to more clearly emerge. Although some may maintain an action orientation until the most demanding and threatening circumstances, others may revert to a state orientation in only moderately demanding and threatening circumstances (Kuhl, 1984).

An individual with an action orientation responds to demanding situations with clear and non-delayed decisions as a result of their implemented action control mechanism. This mechanism allows an individual to enter a metastatic mode of control which promotes change.

For example, action-oriented individuals experience fewer discrepancies with their intention to exercise and actual exercise behavior than state-oriented individuals, who tend to have more discrepancies between their intention to exercise and actual exercise behavior (Kendzierski, 1990).

Action/state orientation differences are noteworthy because they are not explained by the "Big Five" personality dimensions (Baumann & Kuhl, 2002; Diefendorff, Hall, Lord, & Strean, 2000), self-esteem (Koole & Jostmann, 2004), achievement motivation (Heckhausen & Strang, 1988), or emotion suppression and reappraisal strategies (Koole, 2004). Therefore, one may conclude that action/state orientation is truly an individual difference distinct from other closely related theoretical constructs.

Hypotheses

When high goals are set, individuals are more motivated, focused, and persistent, which increases performance on tasks (Locke & Latham, 2002). However, the same mechanisms are also theorized to contribute to the depletion of self-regulatory resources (e.g., Baumeister et al., 1998; Hagger, Wood, Stiff, & Chatzisarantis, 2010). Because high goals may require more motivation, focus, and persistence than low goals, they should also be more depleting. Indeed, Welsh and Ordóñez (2014) found that high goals deplete an individual's self-regulatory resources more than low goals. Seeking to replicate this hypothesis, I predicted that:

Hypothesis 1: Individuals in the high goal condition will report more depletion than individuals in the low goal condition.

The action control framework of behavior theorizes that behavior is governed by a balance of reactive and proactive control processes, where reactive control relies on existing, established routines or schemas that require little or no conscious supervision, and proactive control, where individuals are not able to rely on pre-established behavioral routines (Ruigendijk & Koole, 2014). When an individual is in proactive control (i.e., the action control mechanism is activated), difficult goals are able to be executed without hesitation, preoccupation, or thoughts about competing goals. Because an action-oriented individual initiates tasks and disengages from thoughts about competing goals, they are overcoming pre-established behavioral routines and consciously choosing to engage in proactive behaviors, which require lingustic representations and goal-oriented thought processes (Ruigendijk & Koole, 2014). An action-oriented individual routinely exhibits self-regulation through their conscious direction toward goal-oriented behavior, which 'exercises' their self-regulatory muscle, causing them to become more resilient to future self-regulation depletion. This increased resiliency to depletion should

allow action-oriented individuals to experience less depletion in response to high goals than state-oriented individuals.

Because state-oriented individuals have a tendency to perseverate regarding past experiences, especially past failures, become distracted by competing tasks, and are more likely to inappropriately initiate new tasks, they may deplete their self-regulatory resource in response to demanding goals, as these characteristics may become exacerbated by high goals.

Hypothesis 2: Action/state orientation will moderate the relationship between goal structure and ego depletion such that individuals with an action orientation will be less depleted than individuals with a state orientation in the high goal condition.

Method

Participants

This study sampled 127 undergraduate students from a large public university. Students received course credit for their participation.

Procedure

In a single online survey, participants first completed an action state orientation scale. Participants then completed five rounds of a problem-solving task (e.g., Mazar et al. 2008; Welsh & Ordóñez, 2014). Following each round, a depletion scale was administered.

Problem-Solving Task

Students completed five rounds of a problem-solving task (Mazar et al., 2008), with each round containing twenty matrices. Each matrix contained twelve three-digit numbers (e.g., 2.73). Participants were instructed to click on the two numbers in each matrix that summed to exactly ten. Each round lasted three minutes, after which participants were automatically redirected to the depletion scale. This task was used by Welsh and Ordóñez (2014), except that this study converted the matrices to an online format. Matrices are included in Appendix A.

Goal Structure Manipulation

Two goal conditions were randomly assigned: high goal (58 participants) or low goal (69 participants). The goal in the high goal condition was set at the 90th percentile of performance and the goal in the low goal condition was set at the 10th percentile of performance, as has been done in previous goal setting studies (e.g., Latham & Seijts, 1999; Schweitzer et al., 2004; Welsh & Ordóñez, 2014). Following the benchmarks used by Welsh and Ordóñez (2014), participants in the high goal condition were asked to complete 12 matrices, and participants in the low goal condition were asked to complete three matrices.

Measures

Action/state orientation was measured using a 22-item dichotomous forced-choice Action Control Scale (ACS) (Diefendorff et al., 2000). A sample item is "When I have to solve a difficult problem, (1) I usually don't have a problem getting started on it, or (2) I have trouble sorting things out in my head so that I can get down to working on the problem." The first option indicates an action orientation, and the second indicates a state orientation. The ACS demonstrated sufficient reliability ($\alpha = 0.79$). The full scale is included in Appendix C.

Self-regulation depletion was measured using four items from the State Ego Depletion Scale (Ciarocco, Twenge, Muraven, & Tice, 2010). The same four items were used by Welsh and Ordóñez (2014). An example item is "My mental energy is running low." Items were rated on a Likert-type seven-point scale, ranging from strongly disagree to strongly agree. The four-item scale demonstrated strong reliability ($\alpha = 0.98$). The full scale is included in Appendix C.

Results

Baseline self-regulation depletion levels were checked to ensure that no differences emerged across the high and low goal conditions prior to the goal structure manipulation using a one-way ANOVA. Mean baseline depletion in the high goal condition (*M = 16.69*) was not significantly different (*F = 1.507, p > 0.05*) from mean baseline depletion in the low goal condition (*M = 15.52*).

Hypothesis 1 stated that individuals in the high goal condition will report more depletion than individuals in the low goal condition. As shown in Figure 2 below, the results trend toward the high goal condition being more depleting than the low goal condition. However, a one-way ANOVA shows that the differences in depletion between the high and low goal condition were not significant at any goal period (see Table 2 in Appendix A for ANOVA table). Differences in ego depletion in the high goal and low goal conditions were not statistically significant, therefore *Hypothesis 1* is not supported.
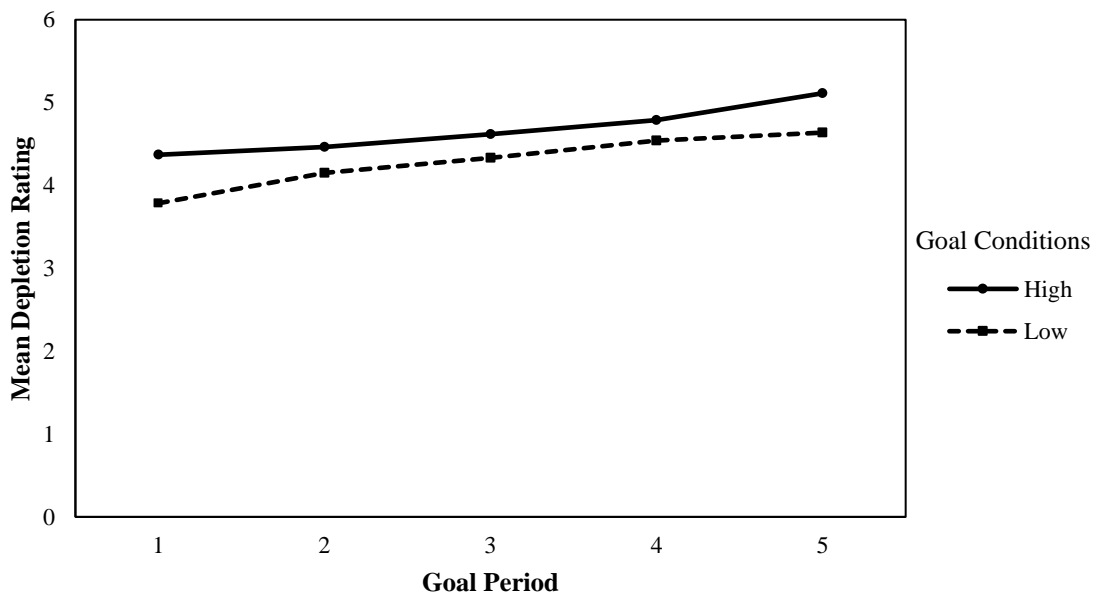
Figure 2. Mean depletion ratings of each condition by goal period

     Hypothesis 2 stated that action/state orientation will moderate the relationship between goal structure and ego depletion such that individuals with an action orientation will be less depleted than individuals with a state orientation in the high goal condition. This was tested using moderated hierarchical regression analyses. To increase the interpretability of the regression coefficients, the moderator variable was centered (Aiken & West, 1991). Baseline depletion was the first variable entered into the regression equation to control for preexisting levels of self-regulation depletion. Next, a dummy-coded goal structure variable was entered. Then, action/state orientation was entered. Lastly, the interaction between goal structure and action/state orientation was entered.

     As shown in Table 1, analyses showed the interaction between action versus state orientation and goal structure to significantly account for variance in ego depletion *(R^2_{change} = 0.059; F_{change} = 7.997, p < 0.005)* The full model was significant as well *(F = 3.599, p < 0.01).* The interaction term was also significant *(β = -0.301, p < 0.005).*

Variable	Step 1			Step 2			Step 3			Step 4		
F	4.48[*]			3.05			2.02			3.60[**]		
R^2	0.04			0.05			0.05			0.11		
ΔR^2				0.01			0.00			0.06[+]		
	b	*SE*	*β*	*b*	*SE*	*β*	*b*	*SE*	*β*	*b*	*SE*	*β*
Step 1: Baseline Self-Regulation Depletion												
	.24	.65	.19[*]	.21	.11	.18[*]	.21	.14	.18	.22	.13	.18[+]
Step 2: Goal Structure												
				1.65	1.30	.11	1.65	1.31	.11	1.51	1.27	.10
Step 3: Action/State Orientation												
							.00	.18	.00	.30	.21	.18
Step 4: Action/State Orientation * Goal Structure												
										-.84	.30	-.30[**]

Note: N = 127
+ p < .10   * p < .05   ** p < .01

Table 1. Hierarchical regression analyses testing the moderating effect of action/state orientation on the relationship between goal structure and self-regulation depletion

Figure 3 illustrates the interaction plot for action/state orientation (one standard deviation above and below the mean). A simple slope analysis for Figure 2 showed that when individuals were action-oriented, the relationship between goal structure and self-regulation depletion exhibited a negative trend, but was not significant (slope = -2.22, *t = -1.19, p = 0.24*). When individuals were state-oriented, the relationship between goal structure and self-regulation depletion was positive and significant (slope = 5.31, *t = 2.92, p < 0.*005). Therefore, analyses confirm that action/state orientation moderates the relationship between goal structure and self-regulation depletion, but suggest that there is insufficient evidence to support that action oriented individuals were less depleted in the high goal condition than the low goal condition. However, state-oriented individuals were significantly more depleted in the high goal condition than they were in the low goal condition. In conclusion, *Hypothesis 2* received marginal support.
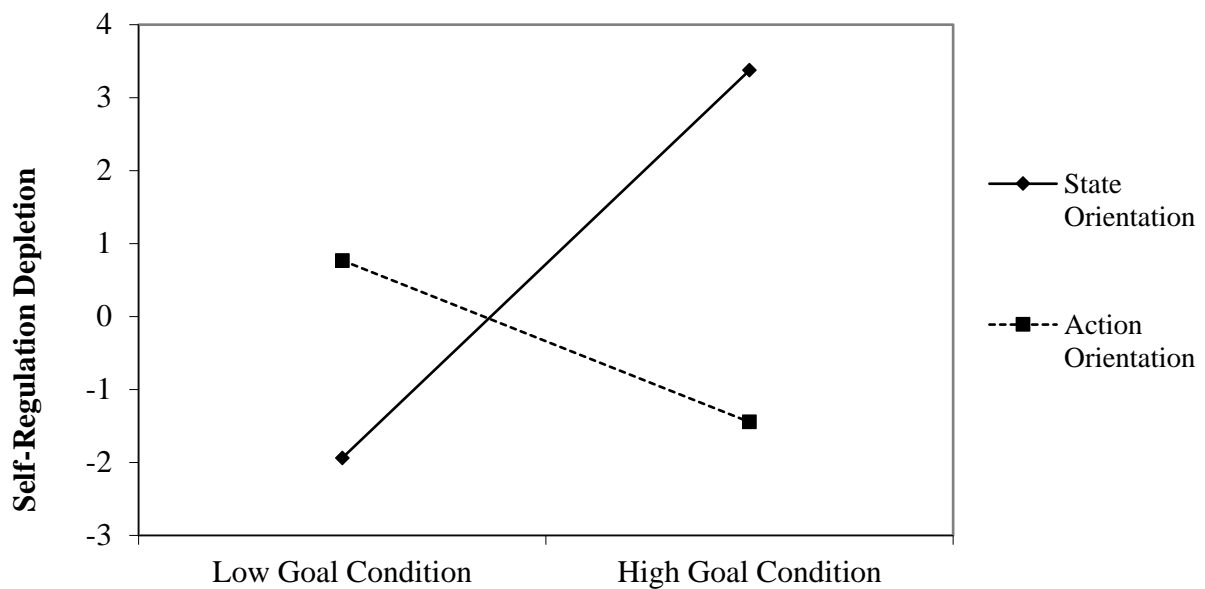
Figure 3. Interaction between goal condition and action/state orientation on self-regulation depletion.

Discussion

The major finding to emerge from this study was that action/state orientation moderated the relationship between goal structure and ego depletion such that individuals with an action orientation were less depleted in the high goal condition than individuals with a state orientation. Therefore, the more frequent engagement of the action control mechanism by action-oriented individuals exercises the individual's ability to self-regulate, gradually increasing the capacity to engage in behaviors which require self-regulation. These results suggest that action/state orientation serves as a boundary condition in understanding the "dark" side of goal setting and its relationship to self-regulation depletion. These results also suggest that organizations should consider their employees' action/state orientation when implementing specific and difficult goals. By being considerate to their employees' self-regulatory cache, organizations and individuals may craft policies and decisions that consider effects of repeatedly setting specific and difficult objectives and standards. Although not measured in the current study, bolstering self-regulation may also reduce unethical behavior (Welsh & Ordóñez, 2014), increase customer service (Chan & Wan, 2012), and promote constructive leadership (Collins & Jackson, 2015).

Surprisingly, no significant differences in ego depletion were observed across high and low goal conditions. The high goal condition did not experience significantly more depletion than the low goal condition, unlike the findings reported by Welsh and Ordóñez (2014). The difference in findings may be due in part to this study's online methodology, whereas the previous self-regulation depletion studies, including Welsh and Ordóñez (2014), have been conducted in the lab. Self-regulation depletion research most frequently occurs in lab settings, where attention and focus are less likely to deviate from the task. However, participants could

have completed this study while listening to music or engaging in some other behavior that draws their attention and focus.

In lab settings, there are few competing intentions or goals, but uncontrolled settings may offer many competing intentions or goals (e.g., watching a television show, playing a game, or completing the online study). The presence of competing goals allows for action/state orientation to accurately reflect its conceptual base (i.e., engaging the action control mechanism to maintain focus and persistence on a single intention or goal in lieu of competing alternatives), therefore the significant moderating effect of action/state orientation is conceptually valid.

Interestingly, individuals with an action orientation were more depleted in the low goal condition than individuals with a state orientation. Hypotheses did not predict differences in ego depletion in the low goal condition across action/state orientations. The observed difference in depletion among action-oriented individuals in the low goal condition suggests that engaging the action control mechanism in situations without high demands is more depleting than reverting to more catastatic tendencies, which save cognitive resources, ergo saving self-regulatory resources. Some research indicates that state-oriented individuals are more likely to conserve regulatory resources during situations with low demands than action-oriented individuals (Jostmann & Koole, 2013). This finding suggests that state-oriented individuals are at an advantage with respect to ego depletion in situations with lower demands.

This study has several limitations. Although great care was taken to ensure internal validity, the findings may not necessarily translate to an organizational setting, where goals and goal-striving behaviors exist over long periods of time. Future research should seek to replicate these findings in organizational settings and across longer timeframes.

In addition, this study is limited because of its online design. Previous self-regulation research has almost exclusively been conducted in laboratory settings, where uncontrollable external stimuli are minimal, allowing for few, if any, distractions. Because participants were not in a laboratory setting, they may have been engaging in behaviors which inhibit self-regulation depletion, such as mindfulness meditation, personal prayer, and positive affect (Friese, Messner, & Schaffner, 2012; Friese & Wänke, 2014; Tice, Baumeister, Shmueli, & Muraven, 2007). Therefore, ego depletion may have been less marked than if the study had occurred in a laboratory setting.

Conclusion

A wealth of previous research illustrates the numerous beneficial performance outcomes when organizations implement goal setting theory (Locke & Latham, 1990). Until recently, little research investigated the conditions under which goal setting may produce unintended negative outcomes (e.g., Schweitzer et al., 2004). The purpose of this study was to examine whether motivational traits result in some individuals being more or less depleted by goal setting. Action/state orientation, a trait-level response to goal-striving intentions and behaviors, was found to be a significant moderator of the relationship between goal structure and self-regulation depletion. Specifically, action-oriented individuals were less depleted in response to demanding goals.

This study suggests that action/state orientation is an attention-worthy construct when examining the potential unintended consequences of goal setting, such as self-regulation depletion. With recent research acknowledging the potentially negative consequences of repeatedly adminstering high performance goals (e.g., Barsky, 2008; Schweitzer et al., 2004; Welsh & Ordóñez, 2014), we should be aware that goal setting is not "one size fits all." That is, individuals are different, and have different needs and responses to goals. Organizations should consider individual differences when implementing goal-driven practices, as depleted employees are vulnerable to ethical transgressions (Gino et al., 2011), less able to regulate emotions (Gailliot, Zell, & Baumeister, 2014), and a host of other undesirable outcomes (Tangney et al., 2004). In conclusion, people do not respond in the same ways to goals. Action-oriented individuals may be more resilient to self-regulation depletion, and state-oriented individuals may be more susceptible. Motivational characteristics, such as action/state orientation, are critical in

our understanding of our response to goals. By increasing this understanding, we can more completely understand the benefits and drawbacks of goal setting.

Appendix A: Problem Solving Task

Instructions for Adding to 10 Task
In this task, you will be presented with a series of matrices filled with numbers. Your task is to find and circle two numbers in each matrix that add up to exactly 10. When you find the pair of numbers circle both of them and move to the next matrix.

You will complete five rounds of this task and have been provided with a stack of five worksheets. Before each round, you will answer a few questions and at the end of each round, you will write down how many problems you solved. At the end of the experiment, you will throw away your worksheets and will turn in only this task packet.

For example:

3.91	0.82	3.75
1.11	1.69	7.94
3.28	2.52	6.25
9.81	6.09	2.01

Please complete the following practice problem below:

2.48	1.03	3.76
4.95	6.15	3.42
6.58	5.34	6.21
0.82	9.67	9.38

Matrix Worksheets for High Goal Condition

Round 1:
GOAL: Solve 12 Matrices

1

1.69	1.82	2.11
4.67	2.81	5.04
5.82	5.06	4.28
2.91	7.19	4.57

2

3.17	4.83	3.99
5.66	1.86	5.27
6.83	5.95	4.25
7.01	6.28	3.82

3

0.49	0.74	1.13
3.72	2.66	1.22
3.75	5.22	5.67
8.87	8.23	7.28

4

0.47	4.61	2.57
3.17	3.82	4.38
4.94	8.43	5.39
2.15	4.86	7.54

5

6.66	4.98	4.34
1.39	0.72	5.53
8.61	3.57	3.36
6.80	0.53	7.58

6

0.81	6.88	2.09
4.55	3.75	3.12
4.52	9.41	6.48
6.45	8.48	8.51

7

0.17	3.46	2.44
6.02	9.83	2.63
6.05	6.21	6.61
8.22	7.66	7.54

8

4.74	4.78	7.71
1.61	5.97	4.09
5.96	3.29	9.09
4.84	5.16	2.71

9

1.48	2.47	9.57
2.68	9.52	4.52
8.72	7.69	1.47
6.41	4.44	7.32

10

3.08	9.42	5.87
3.94	5.41	3.42
4.02	5.06	4.12
4.13	4.69	7.06

11

3.15	0.95	2.23
4.98	2.90	2.88
6.66	6.73	7.67
9.75	6.85	8.17

12

0.63	0.65	1.51
2.64	9.37	2.12
2.89	5.98	8.89
9.49	2.34	7.98

13

2.22	4.51	7.13
9.33	9.77	7.88
7.04	1.84	5.22
4.24	1.72	8.16

14

0.74	4.55	1.49
8.51	7.91	8.68
5.62	0.81	2.11
3.75	3.72	9.36

15

5.97	9.62	9.41
3.61	7.39	2.61
5.49	5.03	2.62
7.51	5.71	0.49

16

4.73	2.12	8.99
0.63	8.89	7.76
1.02	2.34	4.98
1.11	0.65	2.91

17

0.12	0.71	0.74
4.27	3.07	2.27
5.09	5.83	5.87
9.27	7.03	5.73

18

2.56	1.93	2.76
7.44	5.03	3.14
7.71	6.38	3.19
8.24	9.18	9.48

19

4.88	2.67	2.22
5.96	5.58	5.22
7.04	7.78	9.33
9.77	9.50	8.52

20

4.16	4.51	1.66
8.29	8.05	9.03
4.73	5.84	5.27
5.21	4.49	7.01

Round 2:
GOAL: Solve 12 Matrices

1

1.72	2.32	8.28
3.72	9.25	4.65
8.38	7.49	0.51
6.24	7.28	7.76

2

3.80	9.42	5.91
3.94	5.41	4.47
4.53	4.59	4.91
3.14	4.21	7.06

3

3.15	0.23	1.31
4.98	2.90	2.88
8.77	6.73	8.79
9.75	6.85	8.10

4

9.55	0.65	1.02
1.64	2.34	2.19
2.89	8.98	8.11
9.88	9.73	9.25

5

2.42	6.63	3.17
2.33	9.77	6.85
4.37	2.21	7.67
2.88	7.83	6.78

6

6.72	4.48	5.90
8.52	8.91	8.62
3.28	3.81	2.10
3.62	3.72	2.48

7

9.75	2.96	8.15
3.61	7.39	7.61
9.45	0.40	2.38
7.62	2.85	1.25

8

0.65	1.06	9.94
3.93	8.89	8.07
1.66	2.34	1.11
7.04	9.34	2.96

9

7.12	5.71	2.74
7.24	6.07	2.32
4.29	7.53	3.76
3.39	7.25	6.59

10

7.24	5.58	0.72
2.24	5.03	8.76
2.72	0.52	4.73
8.28	9.08	9.48

11

4.14	1.74	4.52
5.96	5.58	2.16
7.84	7.98	3.98
9.02	5.96	8.52

12

4.24	9.34	8.66
2.78	8.62	0.78
0.84	5.84	6.76
9.58	0.66	7.52

13

6.19	1.25	2.11
4.22	7.89	3.55
8.25	5.60	4.21
3.11	7.91	4.75

14

7.13	5.82	3.32
6.67	1.26	6.43
9.81	9.17	3.87
1.07	0.28	4.18

15

0.49	0.74	1.13
8.87	2.66	7.25
3.75	5.22	5.67
8.87	8.23	7.71

16

4.70	8.90	2.50
4.18	3.02	3.48
6.42	5.38	7.98
2.20	5.30	5.04

17

6.88	4.92	7.09
1.39	5.08	6.56
8.19	3.67	3.22
2.88	5.43	8.57

18

8.81	1.39	2.56
4.72	4.32	4.21
5.68	3.41	5.89
7.24	8.48	8.09

19

5.17	8.46	2.23
6.62	3.79	3.77
6.43	6.21	3.48
4.97	2.81	7.83

20

5.96	4.78	2.81
1.61	5.97	4.09
3.04	8.76	2.04
7.96	9.22	2.01

Round 3:

GOAL: Solve 12 Matrices

1

2.32	3.97	6.45
8.42	1.84	2.58
4.55	2.94	7.68
4.87	6.51	8.25

2

3.66	9.25	1.22
4.86	4.56	4.10
8.90	0.73	6.44
5.44	6.87	1.77

3

8.22	8.67	4.11
4.93	7.29	8.39
2.61	1.33	5.64
4.55	6.89	8.05

4

3.69	6.31	5.22
4.89	2.41	9.61
3.99	7.08	6.11
4.98	8.59	5.72

5

5.89	8.44	8.70
5.62	7.04	9.12
8.16	4.48	1.58
0.88	2.32	9.96

6

4.75	4.60	1.58
1.89	1.38	4.72
0.84	6.71	6.25
7.62	8.62	3.39

7

7.48	1.21	2.98
3.08	5.81	4.19
7.85	1.47	2.20
4.29	8.59	8.25

8

2.23	7.77	1.09
5.98	6.34	3.33
7.52	4.21	3.48
6.89	4.91	3.55

9

3.08	2.65	6.95
3.33	6.02	3.39
6.67	7.61	7.03
9.62	4.05	0.91

10

8.52	4.12	5.55
9.65	1.23	8.88
8.80	2.44	1.02
2.22	3.85	7.56

11

1.19	7.83	2.05
6.61	6.94	9.95
4.02	0.98	2.17
2.25	8.95	9.97

12

6.08	1.14	6.68
0.36	5.04	4.92
5.86	4.14	7.54
6.94	4.74	9.47

13

5.58	5.33	7.88
6.06	0.62	2.92
4.77	8.88	2.12
4.40	3.84	9.08

14

1.08	9.45	8.95
8.23	4.61	2.77
1.45	6.87	9.12
1.94	0.55	7.31

15

0.61	7.48	7.09
2.91	2.08	7.49
8.50	0.87	8.92
3.98	4.84	7.79

16

6.08	3.27	4.44
9.54	9.89	2.48
0.94	9.37	6.73
1.11	2.40	2.61

17

2.67	7.04	7.71
3.90	5.21	6.62
1.11	5.04	7.10
2.29	0.80	1.83

18

0.34	6.66	1.54
2.67	9.02	6.22
9.46	6.28	8.62
0.69	1.98	1.38

19

9.16	5.31	2.61
3.31	2.94	6.01
5.90	6.72	7.69
2.01	4.69	7.39

20

2.95	1.63	7.91
0.64	8.53	9.36
6.13	2.47	7.84
8.26	4.14	8.01

Round 4:
GOAL: Solve 12 Matrices

1

8.92	2.88	4.38
1.77	6.20	9.01
1.08	2.19	6.62
6.48	2.74	0.54

2

7.77	4.17	1.23
6.82	1.91	0.22
5.83	4.81	4.18
6.29	3.33	7.13

3

1.05	9.87	4.81
6.46	5.59	2.42
4.50	0.07	4.54
0.61	3.65	9.39

4

2.15	6.66	5.95
1.06	2.27	3.34
6.20	4.63	2.94
3.41	8.83	4.43

5

9.96	1.06	2.50
6.34	1.76	5.15
0.28	3.76	3.29
8.61	8.88	1.39

6

5.06	0.64	3.68
4.12	7.43	1.22
5.88	8.88	6.79
8.62	0.13	9.68

7

1.50	7.52	4.44
2.93	7.12	6.55
1.09	0.52	9.48
3.88	8.01	1.49

8

6.04	7.77	5.61
3.41	5.09	5.75
1.11	0.17	3.23
2.40	4.91	6.01

9

3.13	4.84	0.34
2.29	6.02	9.50
6.87	4.12	5.26
1.17	2.19	1.33

10

3.68	5.55	9.85
0.15	1.26	3.13
1.05	6.42	4.16
2.82	4.66	4.10

11

0.20	8.63	2.96
4.15	3.39	9.92
7.80	1.12	1.37
3.42	1.18	3.20

12

8.88	2.66	9.04
0.34	1.48	6.60
2.17	7.51	7.44
4.40	1.12	9.03

13

4.63	6.81	2.05
7.07	2.21	8.89
5.53	4.11	5.57
0.07	6.04	3.19

14

8.21	3.41	4.84
5.16	2.06	8.62
0.51	8.94	3.47
1.13	7.74	1.81

15

9.37	3.05	2.48
0.94	8.52	8.84
9.16	6.95	1.84
0.40	6.21	4.60

16

6.11	3.54	0.71
5.64	4.19	1.04
8.88	4.89	9.29
6.54	1.23	4.91

17

9.46	2.30	7.52
2.48	0.84	2.26
9.10	7.84	5.46
8.02	7.22	1.14

18

8.45	7.01	1.55
4.50	2.95	9.01
1.99	3.17	4.46
3.15	5.50	2.10

19

4.09	2.15	3.77
8.55	7.03	7.43
1.14	0.08	2.45
8.86	0.45	2.57

20

1.17	0.56	9.94
3.87	8.89	7.75
1.11	4.33	6.13
8.14	4.71	6.01

Round 5:
GOAL: Solve 12 Matrices

1

1.52	8.40	6.99
2.36	5.18	3.02
7.77	6.11	7.74
8.26	4.25	6.98

2

5.55	1.23	3.10
0.94	2.43	2.22
8.42	1.58	3.15
6.31	4.67	8.57

3

9.33	4.05	6.20
3.67	2.75	1.19
0.17	7.41	9.83
5.19	8.25	4.08

4

2.25	8.88	4.26
1.12	5.48	7.49
7.10	2.61	0.88
2.13	9.33	1.15

5

1.13	6.37	5.66
4.11	2.20	9.87
6.78	3.63	1.05
8.22	7.33	8.80

6

0.85	8.25	7.40
4.85	6.31	2.97
1.70	8.15	3.79
9.15	6.02	3.30

7

2.87	1.16	4.42
5.58	0.25	8.63
2.37	0.03	6.74
6.13	1.97	3.55

8

9.84	7.61	1.16
3.35	4.21	2.23
2.74	7.16	6.79
8.84	5.02	4.22

9

6.59	1.17	3.41
4.23	8.45	3.69
3.12	8.10	7.48
0.78	5.87	5.43

10

3.76	8.56	2.60
1.44	4.61	9.20
1.80	9.32	7.24
0.04	5.84	6.06

11

0.21	4.16	4.93
3.30	7.81	1.04
1.66	5.17	0.34
7.19	2.91	9.66

12

1.25	5.82	4.44
6.87	1.09	0.33
5.57	4.18	2.13
6.66	6.37	4.49

13

4.84	2.72	6.13
2.10	8.29	6.16
7.28	1.33	8.61
7.44	9.08	4.47

14

7.76	1.94	6.20
0.03	9.49	2.22
3.80	0.55	1.34
8.88	2.21	6.07

15

9.12	5.89	0.41
8.98	4.06	7.79
3.21	5.05	9.64
2.67	1.26	4.11

16

5.36	0.25	9.41
3.87	7.04	2.66
6.35	6.13	3.65
2.58	3.32	1.62

17

8.08	1.92	4.31
1.42	0.47	5.58
5.20	6.69	9.69
2.45	6.19	3.32

18

0.61	8.88	5.64
2.02	4.36	6.39
3.71	2.04	7.94
8.07	0.33	1.92

19

0.72	5.67	9.12
1.55	6.54	3.32
3.08	4.15	4.46
9.28	8.62	9.74

20

2.37	2.17	4.05
4.68	4.29	6.51
6.35	1.40	7.63
0.39	6.71	7.01

Appendix B: Measures

<u>Revised Action Control Scale (ACS) (Diefendorff, Hall, & Strean, 2000)</u>
Listed below are scenarios that occur in everyday life. Please circle the letter that corresponds with the way in which you are more likely to react to each scenario.

1. When I know I must finish something soon:
    a. I have to push myself to get started
    b. I find it easy to get it done and over with
2. When I have learned a new and interesting game:
    a. I quickly get tired of it and do something else
    b. I can really get into it for a long time
3. If I've worked for weeks on one project and then everything goes completely wrong with the project:
    a. It takes me a long time to adjust myself to it
    b. It bothers me for a while, but then I don't think about it anymore
4. When I don't have anything in particular to do and I am getting bored:
    a. I have trouble getting up enough energy to do anything at all
    b. I quickly find something to do
5. When I am getting ready to tackle a difficult problem:
    a. It feels like I am facing a big mountain that I don't think that I can climb
    b. I look for a way that the problem can be approached in a suitable manner
6. If I had just bought a new piece of equipment (for example, a cell phone) and it accidentally fell on the floor and was damaged beyond repair:
    a. I would manage to get over it quickly
    b. It would take me a long time to get over it
7. When I have to solve a difficult problem:
    a. I usually don't have a problem getting started on it
    b. I have trouble sorting things out in my head so that I can get down to working on the problem
8. If I have to talk to someone about something important and, repeatedly, can't find him or her at home:
    a. I can't stop thinking about it, even while I'm doing something else
    b. I easily forget about it until I see the person
9. When I read an article in the newspaper that interests me:
    a. I usually remain so interested in the article that I read the entire article
    b. I still often skip to another article before I've finished the first one
10. When I am told that my work has been completely unsatisfactory:
    a. I don't let it bother me for too long
    b. I feel paralyzed
11. When I have a lot of important things to do and they must all be done soon:
    a. I often don't know where to begin
    b. I find it easy to make a plan and stick with it
12. When one of my co-workers brings up an interesting topic for discussion:
    a. It can easily develop into a long conversation
    b. I soon lose interest and want to go do something else

13. If I'm stuck in traffic and miss an important appointment:
    a. At first, it's difficult for me to start to do something else
    b. I quickly forget about it and do something else
14. When I am busy working on an interesting project:
    a. I need to take frequent breaks and work on other projects
    b. I can keep working on the same project for a long time
15. When I have to take care of something important which is also unpleasant:
    a. I do it and get it over with
    b. It can take a while before I can bring myself to it
16. When something really gets me down:
    a. I have trouble doing anything at all
    b. I find it easy to distract myself by doing other things
17. When I am facing a big project that has to be done:
    a. I often spend too long thinking about where I should begin
    b. I don't have any problems getting started
18. When several things go wrong on the same day:
    a. I usually don't know how to deal with it
    b. I just keep on going as though nothing had happened
19. When I read something I find interesting:
    a. I sometimes still want to put the article down and do something else
    b. I will sit and read the article for a long time
20. When I have put all my effort into doing a really good job on something and the whole thing doesn't work out:
    a. I don't have too much difficulty starting something else
    b. I have trouble doing anything else at all
21. When I have an obligation to do something that is boring and uninteresting:
    a. I do it and get it over with
    b. It can take a while before I can bring myself to do it
22. When I am trying to learn something new that I want to learn:
    a. I'll keep at it for a long time
    b. I often feel like I need to take a break and go do something else for a while

4-item State Ego Depletion Scale
(Welsh & Ordóñez, 2014; Original scale: Ciarocco, Twenge, Muraven, & Tice, 2010)
Please respond to the statements below, describing how you feel right now. We are interested in your feelings at this moment.

    1. I feel mentally exhausted.

    2. Right now, it would take a lot of effort for me to concentrate on something.

    3. I feel worn out.

    4. My mental energy is running low.

Appendix C: Tables & Figures

		Sum of Squares	df	Mean Square	F	Sig.
Round 1 Depletion	Between Groups	172.226	1	172.226	3.568	.061
	Within Groups	6033.033	125	48.264		
	Total	6205.260	126			
Round 2 Depletion	Between Groups	49.503	1	49.503	.948	.332
	Within Groups	6527.331	125	52.219		
	Total	6576.835	126			
Round 3 Depletion	Between Groups	41.633	1	41.633	.728	.395
	Within Groups	7147.816	125	57.183		
	Total	7189.449	126			
Round 4 Depletion	Between Groups	30.342	1	30.342	.502	.480
	Within Groups	7549.516	125	60.396		
	Total	7579.858	126			
Round 5 Depletion	Between Groups	113.465	1	113.465	2.093	.151
	Within Groups	6777.417	125	54.219		
	Total	6890.882	126			

Table 2. ANOVA (Depletion x Condition)

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