Journal of Experimental Social Psychology 62 (2016) 68–74

Contents lists available at ScienceDirect

Journal of Experimental Social Psychology

journal homepage: www.elsevier.com/locate/jesp

Framing effortful strategies as easy enables depleted individuals to execute complex tasks effectively☆

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HIGHLIGHTS

- We argue that depleted individuals prefer strategies framed as easy.
- Adoption of easy strategies should reduce conservation of energies for future needs.
- When an easy strategy was assigned, depleted individuals had a good performance.

ARTICLE INFO

Article history:
Received 4 March 2015
Revised 19 October 2015
Accepted 20 October 2015
Available online 21 October 2015

Keywords:
Ego depletion
Executive functions
Conservation

ABSTRACT

It is argued that depleted individuals are concerned with conserving energy and therefore prefer strategies framed as easy. When such easy strategies can be adopted, the concern with conserving energy is reduced, and subsequent task performance restored. Indeed, Experiment 1 showed that adopting a strategy framed as easy but suboptimal (vs. difficult but optimal) reduced the need to conserve energy, and this enabled depleted individuals to perform as well as non-depleted individuals. Experiment 2 showed that when an objectively optimal negotiation strategy was framed as easy (rather than difficult), depleted negotiators were more likely to adopt the strategy and therefore achieved better outcomes. We conclude that depleting executive functions leads to a preference for an easy strategy and that when framing strategies as easy, the need to conserve energy is alleviated and task performance is maintained.

"If you have a difficult task, give it to a lazy man — he will find an easier way to do it."
Hlade's Law

1. Introduction

To survive and prosper, individuals engage executive functions to successfully perform various tasks that require reasoning and decision making (Kane et al., 2004; Miyake, Friedman, Emerson, Witzki, & Howerter, 2000). Indeed, executive functioning benefits academic achievement (Best, Miller, & Naglieri, 2011), facilitates the inhibition of socially inappropriate behaviors (Von Hippel & Gonsalkorale, 2005), promotes compliance with dietary restraints (Hofmann, Gschwendner, Friese, Wiers, & Schmitt, 2008), and sustains fidelity in romantic relationships (Pronk, Karremans, & Wigboldus, 2011). At first blush, it thus seems that effective and operative executive functions have largely beneficial effects, and that impairments of executive functioning undermine both concurrent and subsequent task performance.

Here we propose a more nuanced perspective that builds on recent theorizing and findings that executive functions are based on limited resources that can be depleted by previous exertion of executive control (Baumeister & Vohs, 2007; Hofmann, Schmeichel, & Baddeley, 2012; Inzlicht & Schmeichel, 2012; Kaplan & Berman, 2010; Schmeichel, 2007). We argue and show that depleting executive functioning and the concomitant need to conserve energy (Baumeister & Vohs, 2007) creates a preference for easy-to-implement, low-effort task strategies, and that adopting such strategies reduces the depleted individual's concern for energy conservation. Precisely therefore, the depleted individual can and will perform subsequent tasks at relatively high levels of effectiveness. Only when depleted individuals are unable to adopt easy, low-effort task strategies, or are forced to pursue subsequent tasks using difficult-to-implement, high-effort strategies, will the concern for energy conservation de-motivate and impair effective

☆ Financial support was provided by a grant from The Netherlands Organization for Scientific Research NWO-432-08-002 to CKWDD. Author contributions: MG, FSTV and CKWDD conceived of the project, MG and FSTV conducted experiments and analyzed the data. MG drafted the manuscript and FSTV and CKWDD provided critical revisions.

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http://dx.doi.org/10.1016/j.jesp.2015.10.005
0022-1031/

performance on subsequent tasks. In two experiments we tested this conservation of energy explanation of strategic preference following depletion. Our results reveal when and why taxing executive functioning does, versus does not, hamper performing relatively complex, ill-defined tasks that involve creative ideation and multi-issue negotiation.

2. Depletion impairs executive functioning and motivates energy conservation

According to the strength model of self-control (Baumeister, Bratslavsky, Muraven, & Tice, 1998; Muraven & Baumeister, 2000; Muraven, Tice, & Baumeister, 1998), self-regulation requires the calibrated use of limited resources. Exerting self-control in one situation therefore undermines self-control performance in subsequent situations. Indeed, such "ego-depletion" affects the ability to suppress impulses and override dominant responses (Hagger, Wood, Stiff, & Chatzisarantis, 2010). For example, ego depleted individuals are less willing to taste unpleasant substances (Vohs et al., 2008), and less persistent on unknowingly unsolvable tasks (Wan & Sternthal, 2008).

Building on these and related findings, Schmeichel (2007) argued that a process similar to the depletion of self-regulatory resources applies to executive functioning more generally, and therefore to human performance in general. Exerting executive control depletes (mental) resources and this in turn impairs subsequent executive functioning. When individuals were instructed to ignore irrelevant information appearing on their screen during a presentation, they performed worse on a subsequent task measuring working memory capacity, than individuals who only watched the presentation. Similarly, executive functioning decreased when individuals were previously asked to inhibit dominant writing tendencies (Schmeichel, 2007). Other works revealed similar effects: Exerting executive control, whether by regulating emotions, engaging working memory, or inhibiting impulses, depletes subsequent executive functioning (Inzlicht, Schmeichel, & Macrae, 2014).

Effects of depleting mental resources on subsequent reductions in (cognitive) performance are often explained in terms of reduced executive functioning and reduced mental capacity to perform. For example, Gailliot et al. (2007) suggested that engaging in a depleting impulse-control task reduces the physical resources needed to engage full executive control in subsequent tasks. They presented results showing that restoring glucose-levels through a sugar-rich (versus sugar-free) drink enabled depleted individuals to engage executive control again and to perform relatively well in subsequent tasks. Apart from the fact that impulse-suppression tasks may not deplete the metabolic energy needed for executive control (Wagner, Tennen, & Wolpert, 2012), the empirical support for the "glucose-account" has met with some criticism (Kurzban, 2010), and may be explained too in terms of the subjective experience of being energized (Cole & Balcetis, 2013; Job, Walton, Bernecker, & Dweck, 2013). Rather than elevating blood-level glucose, sugar-rich drinks may exert its effects through activation of motivational reward circuitries in the brain (Molden et al., 2012; also see Carter, Jeukendrup, & Jones, 2004; Chambers, Bridge, & Jones, 2009).

That effects of depletion on subsequent task performance are in part motivational points to a conservation of energy account of ego-depletion effects. Following self-control tasks, individuals may be less willing to deploy energy in subsequent tasks, so as to conserve energy for future needs (Inzlicht & Schmeichel, 2012; Muraven, Shmueli, & Burkley, 2006). Indeed, following depletion, individuals perform poorly on self-control tasks, but only when they expect to exert self-control thereafter again, in a subsequent third task (Muraven et al., 2006). Likewise, when individuals believe that self-control is a matter of motivation rather than energy, performance on a typical self-control task (i.e., squeezing a handgrip) remains unaffected by ego-depletion (Job, Dweck, & Walton, 2010). Finally, Clarkson, Hirt, Chapman, and Jia (2011) showed that when individuals attributed their experienced depletion to external cues, they actually displayed increased self-regulation ability and had increased rather than decreased working memory capacity. It thus appears that depletion undermines subsequent executive functioning because of increased motivation to conserve energy and to actively monitor available resources. Metaphorically, exerting depleting self-control creates a lazy rather than exhausted individual.

3. Depletion and task-strategy preferences

Much of the work on exerting self-control and depleting resources implicitly or explicitly assumes that "depleted" individuals will, on subsequent tasks, show poorer performance than non-depleted individuals, either because they do not have enough resources for a good performance or because they are motivated to conserve energy for subsequent performance (Inzlicht & Schmeichel, 2012; Inzlicht et al., 2014). What has not been considered, however, is that when facing new tasks, individuals have more or less discretion with regard to the strategy they employ to perform that task. For example, when preparing for an upcoming exam, a student may decide to study all textbook chapters or, alternatively, focus on those chapters that were discussed during lectures. While the latter strategy is less likely to generate high performance, it certainly is less effortful and easier to implement.

It stands to reason that depleted individuals prefer easy-to-implement, low-effort strategies more than difficult, high-effort strategies despite the fact that low-effort strategies more likely result in sub-optimal performance. The energy-depletion account (Gailliot & Baumeister, 2007) suggests that depleted individuals have such a preference for easy strategies because they cannot engage in difficult task-strategies. The presently advanced conservation of energy account suggests, however, that such a preference for easy, low-effort strategies is motivated by depleted individuals' heightened concern about conserving mental energy. In contrast to the energy-depleting account, the conservation of energy account implies that when depleted individuals are enabled to adopt low-effort, easy strategies, their concern with conserving energy is reduced. Ironically, perhaps, this means that depleted individuals may be motivated again to expend resources on new tasks and perform relatively well. This idea is consistent with work from Janssen, Fennis, and Pruyn (2010), showing that concern for saving energy, inferred by performance on a Stroop task, was lower when depleted participants did not expect to be the target of a persuasive attempt – which requires effortful counterpersuasion – as compared to when they were forewarned of such attempt. In the latter case, conservation of resources was functional and consequently Stroop performance was hindered.

Extending these findings, we propose that a beneficial reduction of conservation needs can be obtained not only by varying anticipation of the task following the critical task as done by Muraven et al. (2006) or Janssen et al. (2010), but rather also by changing the expectancy about the modalities required to perform the critical task. This could be a central mechanism to effectively counteract depletion in a large number of situations in which varying expectations about what will follow the critical task, could be impracticable or ineffective.

The idea that providing easy strategies reduces depleted individuals' concern with conserving energy, allowing them to pursue new tasks in a motivated and relatively effortful manner, resonates with work showing that when individuals progress towards a goal, the initial commitment to that goal decreases and attention can be directed to other goals (Amir & Ariely, 2008; Fishbach & Dhar, 2005). For example, Fishbach and Dhar (2005) found that among individuals concerned with physical shape, expectation of future workout led to increased willingness to consume fat food. Other studies showed that when an important goal is pursued, individuals seek out others that are instrumental for that focal goal, but when goal progress is good, such preferences for instrumental others are weakened (Fitzsimons & Fishbach, 2010; see also Fishbach, Dhar, & Zhang, 2006).