Organizational Behavior and Human Decision Processes 115 (2011) 13–24

Contents lists available at ScienceDirect

Organizational Behavior and Human Decision Processes

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

Being of two minds: Switching mindsets exhausts self-regulatory resources

Ryan Hamilton [a,*], Kathleen D. Vohs [b], Anne-Laure Sellier [c], Tom Meyvis [c]

[a] Marketing Department, Goizueta Business School, Emory University, United States
[b] Marketing Department, Carlson School of Management, University of Minnesota, United States
[c] Marketing Department, Leonard Stern School of Business, New York University, United States

ARTICLE INFO

Article history:
Received 12 September 2009
Accepted 15 November 2010
Available online 8 December 2010
Accepted by Daan van Knippenberg

Keywords:
Mindsets
Self-regulation
Self-control
Executive functioning
Resource depletion
Judgment and decision making

ABSTRACT

The human psyche is equipped with the capacity to solve problems using different mental states or mindsets. Different mindsets can lead to different judgment and decision making styles, each associated with its own perspective and biases. To change perspective, people can, and often do, switch mindsets. We argue, however, that mindset switching can be costly for subsequent decisions. We propose that mindset switching is an executive function that relies on the same psychological resource that governs other acts of executive functioning, including self-regulation. This implies that there are psychic costs to switching mindsets that are borne out in depleted executive resources. One implication of this framework is that switching mindsets should render people more likely to fail at subsequent self-regulation than they would if maintaining a consistent mindset. The findings from experiments that manipulated mindset switching in five domains support this model.

Introduction

People have the remarkable ability to solve the same problems using qualitatively different methods. In the physical world, one can use different tools to complete the same task. In the psychological world, one can use different mental states to reach the same goal. These mental states, broadly referred to as mindsets, consist of sets of mental processes that produce a disposition or readiness to respond in a particular manner (Gibson, 1941; Gollwitzer, 1990). Mindsets have proven to be important for explaining human judgment and decision making in that some mindsets can ameliorate or exacerbate decision biases. For example, activating a counterfactual mindset minimizes the confirmation bias observed in group decision making (Kray & Galinsky, 2003). Activating a transactional mindset (e.g., an "everything must go" mindset for sellers or an "I've absolutely gotta have it" mindset for buyers) diminishes and can even reverse the endowment effect (Mandel, 2002). A probabilistic mindset (e.g., prompting people to estimate probabilities or ratios) leads to less intuitive, more rational decision making (Rottenstreich & Kivetz, 2006). Yet the converse can occur too in that some mindsets magnify biased responding. For example, people with a high degree of confidence in their own personal objectivity might adopt an "I think it, therefore it must be true" mindset, which can increase gender discrimination (Uhlmann & Cohen, 2007).

A synthesis of previous research suggests that optimal decision making may necessitate the use of more than one mindset. Consider, for example, collectivist mindsets, in which interpersonal ties and group harmony are emphasized, and individualist mindsets, in which autonomy and personal happiness are emphasized. There are tradeoffs in terms of which of these two mindsets is best for group performance because each confers different benefits. Collectivist values are associated with strong norms to be cooperative (Wagner, 1995) and maintain positive, salient group identities (Chatman, Polzer, Barsade, & Neale, 1998). Yet, inventiveness seems to be heightened by an individualist mindset in that groups of people that were induced to activate individualist mindsets are more creative than groups induced to activate collectivist mindsets (Goncalo & Staw, 2006). Therefore, if the tasks facing an organization require both cooperation and creativity—not an uncommon pair of demands—then successful performance might require regular switching between collectivist and individualist perspectives.

Fortunately, mindset theories rest on the assumption that people are not locked into a single *modus operandi* but are in fact able to switch mindsets. Unlike a strong preference such as handedness, people seem able to adopt different mindsets depending on their motives or situational demands. Although there is ample evidence that people can and do switch mindsets, surprisingly little is known about how such switching takes place. In this article, we propose that switching mindsets is an act of executive control and, as such, is governed by the same psychological mechanism

* Corresponding author. Address: Goizueta Business School, Emory University, 1300 Clifton Road, Atlanta, GA 30322, United States.
E-mail address: ryan_hamilton@bus.emory.edu (R. Hamilton).

0749-5978/$ - see front matter © 2010 Elsevier Inc. All rights reserved.
doi:10.1016/j.obhdp.2010.11.005

that enables other forms of executive functioning. Since other acts involving executive functioning are known to consume regulatory resources, leaving people likely to fail at subsequent self-regulation (see Baumeister, Vohs, & Tice, 2007), so too should switching mindsets. In five experiments, we predicted and found that switching mindsets results in poorer self-regulation than maintaining a consistent mindset.

Switching mindsets and executive functioning

Mindsets: definition and properties

The concept of mindsets dates back to some of the earliest experiments in psychology (e.g., Ach, 1905). Those early experiments, and many more since, have found that engaging in certain tasks activates a set of cognitive operations characterized by two properties. First, in order for cognitive procedures to qualify as a mindset, they must be more general than those needed strictly for the completion of the task at hand. Put another way, mindsets promote orientations that are not specific to a particular task but rather represent a global readiness to respond in a particular way (Freitas, Gollwitzer, & Trope, 2004; Gollwitzer, 1990). Second, they are sticky: once activated, mindsets remain active beyond the initial task, thereby influencing subsequent and even unrelated tasks.

The mindset construct has been invoked to explain phenomena as diverse as goal pursuit (Gollwitzer, 1990), inference making (Fiedler, Schenck, Watling, & Menges, 2005), interpersonal relationships (Gagne & Lydon, 2001), stereotyping (Sassenberg & Moskowitz, 2005), and fairness (Van Den Bos, 2002). Other theories do not invoke the term mindset but nonetheless propose that people routinely use qualitatively different orientations when performing the same activity. Theories of this type include construal level theory (Freitas et al., 2004; Trope & Liberman, 2003), which specifies that people can represent actions at either an abstract or concrete level; motivational theories (Puca & Schmalt, 2001), which specify that people pursue goals by adopting either an approach orientation concerned with "maximizing hits" or an avoidance orientation concerned with "minimizing misses" (Crowe & Higgins, 1997); and regulatory mode theory (Avnet & Higgins, 2003), which specifies that people make decisions using either a thorough, comparative assessment strategy or an efficient, noncompensatory locomotive strategy.

Mindsets differ from goals in that mindsets lack the motivational component that is central to goals. Mindsets are a workspace in which other processes, including goal-directed ones, operate. They do not yield a sense of progress toward an end-state and are not characterized by being completed or achieved the way that one would characterize goal pursuit. Consequently, engaging in a behavior that is consonant with a given mindset would not weaken the strength of the mindset, as would occur with goal-directed behavior. Mindsets also differ from memory structures, such as schemas or categories, which are organized representations of prior experiences (Mandler, 1967). Unlike mindsets, schemas do not promote a general orientation; they are more limited in scope, affecting responses only within the domain of the schema/category. For example, a car schema is unlikely to affect evaluations that fall outside the domain of cars, whereas mindsets shape responses to diverse stimuli.

Mindset switching

Mindset theories share the common assumption that situational cues, such as the demands of a particular task, can shift people from using one mindset to using another. For example mindsets that are chronically active due to trait dispositions (Vallacher & Wegner, 1989) or long-term participation in a specific culture (Lee, Aaker, & Gardner, 2000) can temporarily be changed by a situational prime. Given that different mindsets require approaching the world in qualitatively different ways, it is challenging to simultaneously use more than one mindset at a time, similar to attempting to simultaneously focus the eye on an object far away and another one up close. The implication of this is that when one mindset is active, activating another typically requires switching away from the one currently active.

The idea that it is difficult to concurrently maintain multiple mindsets is illustrated by one prominent example of a mindset theory, the Rubicon model of action phases (Gollwitzer, 1990; Heckhausen & Gollwitzer, 1987). According to this model, the act of making a decision causes a hard break between a pre-decision deliberative mindset, in which people acquire and evaluate information, and a post-decision implemental mindset, in which people focus on goal attainment. Just as Caesar's crossing of the Rubicon represented commitment to a course of action, so does making a decision result in a qualitative shift in psychological processing. Because deliberation and implementation mindsets serve such different ends, people do not simultaneously maintain both mindsets but rather switch from one to the other as the situation demands (Gollwitzer, 1990; Heckhausen & Gollwitzer, 1987).

A self-regulation perspective on mindset switching

Although mindset theories acknowledge that people switch mindsets, they do not address how this switching takes place. The current research proposes that switching mindsets is not automatic nor costless, but rather is an act of the executive function, the aspect of the self that also governs self-regulation (Baumeister, 1998) and decision making (Vohs et al., 2008). We define self-regulation as the modification of habitual, natural, or dominant responses. The model from which we work claims that diverse acts of self-control use a common—but finite—executive resource (Baumeister & Heatherton, 1996). According to this limited-resource model, each act of self-regulation consumes some of the resource, thereby leaving a smaller supply available for subsequent attempts at self-regulation. If executive control resources have been sufficiently taxed, people are vulnerable to failures of self-control, including failure to persist at challenging tasks, trouble sticking to a diet, and unintended emotional outbursts (e.g., Baumeister, Bratslavsky, Muraven, & Tice, 1998; Muraven, Tice, & Baumeister, 1998; Vohs & Heatherton, 2000).

The resource-intensive view of self-regulation raises the question of what actions constitute self-regulation. Put another way, what actions would not consume this resource? Previous research has demonstrated that the types of activities that require the oversight of the executive function are circumscribed and have predictable boundaries. For example, short-term memory is generally understood to not require self-regulation and, accordingly, has been shown to be unaffected by prior acts of self-control (Schmeichel, Vohs, & Baumeister, 2003). Also, people must be attempting to regulate in a given domain for responses in that domain to surface after earlier engagement in self-control. To illustrate, although self-regulatory resource depletion increases consumption of dessert foods, this effect only occurs among dieters, because nondieters are not regulating with respect to caloric intake (Vohs & Heatherton, 2000). Only behaviors being regulated should emerge when resources are depleted.

If switching mindsets is an act of the executive function, as we argue, then it should consume self-regulatory resources and diminish people's ability to self-regulate afterward. We predict that maintenance of a mindset does not require excessive self-control, whereas shifting from one mindset to a new mindset, with its