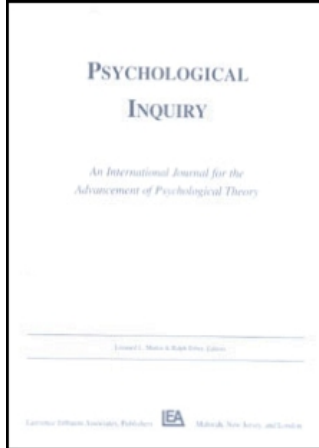


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Relating Mindfulness and Self-Regulatory Processes

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Relating Mindfulness and Self-Regulatory Processes

E. J. Masicampo and Roy F. Baumeister

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Brown, Ryan, and Creswell (this issue) summarize the recent surge in mindfulness research and practices, and they propose methods for developing a further understanding of the mindfulness phenomenon. We share the authors' enthusiasm regarding the usefulness of mindfulness measures and interventions, and in order to facilitate the movement forward in this line of work we highlight two areas where the distinction between mindfulness and self-regulatory (or self-control) processes may require attention.

First, there appears to be some theoretical overlap between mindfulness interventions and self-control exercise. Recent work (for a review, see Baumeister, Gailliot, DeWall, & Oaten, 2006) has shown that engaging in self-control exercises on a daily basis increases the general capacity for self-control, and that such an increase results in a variety of benefits for the self. Given the similarities between self-control programs and mindfulness interventions, we propose that mindfulness therapies may qualify as one example of self-control exercise.

Second, recent work on the antecedents of conscious thought indicates a causal relationship between dispositional mindfulness and positive outcomes that the target article does not address. Brown et al. (this issue) suggest that mindful states facilitate self-regulatory ability and increase well-being. However, an alternative explanation is that successful self-regulation causes both well-being and mindfulness. We propose that individuals with high self-control are less susceptible than others to intrusive thought patterns and that this difference may explain previous findings linking dispositional mindfulness to high self-regulatory capacity.

Mindfulness Interventions as Self-Control Exercise

Baumeister et al. (2006, p. 1780) proposed “anything that could improve self-regulation might

give (clinical psychologists) a powerfully helpful tool to improve therapeutic outcomes”. Mindfulness interventions may represent one such tool. Brown and colleagues (this issue) have attributed the success of mindfulness interventions in clinical settings to the promotion of, among other things, metacognitive insight, exposure to internal and external states, and nonattachment to circumstances and goals in such a way that facilitates successful, integrated functioning. To propose an additional (and possibly alternative) view, we suggest that a general increase in the capacity for self-control may be a major causal link between mindfulness interventions and the benefits that have been associated with them.

Self-Control as a Muscle

Recent work suggests that self-control may operate similarly to a muscle (Baumeister, Bratslavsky, Muraven & Tice, 1998; Muraven & Baumeister, 2000). Support for this view comes from findings that self-control exertion on an initial task leads to decrements in self-control ability in subsequent tasks, thus resembling fatigue of a self-control muscle. As an extension of this analogy, research has examined the idea that regular self-control exercise may strengthen the self-control muscle and thereby increase one's general capacity for self-control.

Research using a variety of self-control interventions has provided converging evidence for the benefits of self-regulatory exercise. Self-control programs have enforced daily regimens of physical exercise (Oaten & Cheng, 2006c), regulation of posture (Muraven, Baumeister, & Tice, 1999), studying (Oaten & Cheng, 2006a), financial monitoring (Oaten & Cheng, 2006b), speech control, and the use of one's nondominant hand (Gailliot, Plant, Butz, & Baumeister, 2007). Participants who completed any of these programs showed reduced susceptibility to self-control fatigue (ego depletion) as measured in the laboratory. Furthermore,

two of these lines of work found a relationship between self-control exercise and better management of household chores, less substance use, healthier diets, improvement in study habits, and better emotion control (Oaten & Cheng, 2006b,c). Thus, specific self-control exercises have been shown to increase the general capacity for self-control, and this has been related to improvements across a number of domains relevant to one's well-being.

Similar Methods and Outcomes

Mindfulness interventions may represent one example of regular self-control exercise. Self-control is frequently defined as the act of altering the self's responses. Each of the interventions reviewed by Brown and colleagues (this issue) encourages its participants to alter and control their responses in some way, often in a manner reminiscent of the self-control procedures used in psychological research.

Laboratory self-control manipulations often involve the challenging task of controlling one's attention by focusing on specific visual or auditory stimuli (and perhaps excluding others). The mindfulness interventions described by Brown and colleagues (this issue) seem to place similar demands on the minds of its participants. Mindfulness-based stress reduction (MBSR) features daily exercises in which participants are required to guide their awareness toward their bodies, their thoughts, and specific images in daily sessions that run for as long as 90 min at a time. In similar fashion, laboratory self-regulation tasks that require individuals to focus their visual attention for as brief a period as 7 min are sufficient for inducing self-regulatory fatigue (e.g., DeWall, Baumeister, Stillman, & Gailliot, 2007). Therefore, the awareness-management exercises used in mindfulness interventions may serve as a similar and even more enduring version of the attention control tasks used in self-control research.

Some mindfulness interventions also resemble laboratory self-control tasks in their use of the conscious control of motor behaviors. In his *cleaning house* mindfulness exercise, for example, Hanh (1976) proposes, "fully focus[ing] your attention on each task" while moving "three times more slowly than usual" when performing regular household chores (p. 86). This and other practices are reminiscent of the methods used for self-control exercise requiring participants to control their movements by monitoring their posture (Muraven et al., 1999) and using their nondominant hand for tasks such as brushing one's teeth, eating, opening doors, and using a computer mouse (Gailliot et al., 2007). These motor instructions, like those prescribed by Hanh, facilitate conscious control by requiring participants to perform everyday behaviors in atypical ways.

Self-control and mindfulness interventions are similar in their execution as well as their structure. Both

programs require the execution of daily activities over extended periods, and this by itself can be seen as implementing a general level of control in one's life. Thus self-control and mindfulness interventions share a number of features: the careful regulation of one's thoughts and behaviors, daily adherence to exercises, and the commitment to such exercises over a period of weeks or months.

Given that self-control and mindfulness interventions are similar in their design, it is not surprising that they produce similar results. Among the various outcomes attributed to mindfulness interventions are improvements in physical health, mental health, behavior regulation, emotion regulation, and interpersonal relationships. Several of these benefits have been attributed to regular self-control exercise as well. Oaten and Cheng (2006b,c) have linked regular self-control exercise to improvements in behavior regulation and emotion regulation and to adherence to habits beneficial to one's physical health. A direct causal link between self-control exercise and other specific benefits has yet to be shown; however, because self-control exercise has been shown to increase general self-regulatory capacity, it is plausible that self-control exercise would at least indirectly contribute to many other positive outcomes. For instance, good self-control has been linked to healthier interpersonal relationships, better mental health, and superior academic performance (Tangney, Baumeister, & Boone, 2004), and regular self-control exercise may help bolster these outcomes.

Separating Mindfulness Interventions from Self-Control Exercise

Future research should address the extent to which the benefits of mindfulness interventions are specific to mindfulness practices or whether they are a result of a more general self-control mechanism. Brown and colleagues (this issue) propose that mindfulness is beneficial to the extent that it provides a new perspective of one's internal and external environments. However, self-control exercise has produced many of the same benefits as mindfulness practices through the simple execution of repeated self-regulatory behavior. Therefore the unique contribution of other, central aspects of mindfulness interventions, such as metacognitive insight and nonattachment, should be clarified in future work.

Dispositional Mindfulness Facilitates Successful Self-Regulation and Vice Versa

A mindful state may facilitate self-control and well-being. However, how does an individual achieve the clarity of thought that is characteristic of mindful

awareness? One possibility is that an individual simply chooses to live in the present moment by fending off intrusive and unwanted thoughts. An alternative view is that mental presence or peace of mind is a state achieved by those who have freed themselves from unwanted worries; perhaps by tying up loose ends, so to speak, and becoming more or less pleased with the current state of affairs. We propose that the latter view may provide a more plausible explanation for individual differences in dispositional and state mindfulness, and that mindfulness may be understood because of, as well as an antecedent for, successful goal management and well-being. Thus, individuals who are successful at managing and regulating their goals may be more likely to exhibit qualities related to mindful awareness.

Brown and colleagues (this issue) suggest that mindfulness may inhibit distraction from intrusive thoughts and facilitate self-regulatory ability. However, our own work (Masicampo & Baumeister, 2007) is consistent with the view that goal fulfillment, relative to goal frustration, leads to both fewer intrusive thoughts and better self-control. Our work found that unfulfilled goals increased conscious thoughts about the goal, and that these intrusive thoughts were related to subsequently poor performance both on intellectual tasks and in self-regulatory domains. These findings are consistent with theories of mind wandering (Smallwood & Schooler, 2006) and rumination (Martin & Tesser, 1996, 2006) suggesting that off-task, nonpresent thoughts may occur in the service of unfulfilled personal goals. Therefore, the successful fulfillment of these goals should eradicate intrusive thoughts and help create a disposition for mindful awareness.

Thus, mindfulness may be a cause of goal-related outcomes. In accordance with this view, we suggest that mindfulness is more likely to be earned through the achievement of one's goals rather than willed through meditation or personal preference, and this is consistent with previous work on mental control. Wegner, Schneider, Carter, & White (1987) have shown that thought processes are very difficult to control. When people try to suppress thoughts about a construct, the automatic (and ironic) response is to think about that very construct. Further, recent work suggests that thoughts enter conscious awareness in a predictable and automatic manner (e.g., Bongers, Dijksterhuis, & Spears, 2007; Masicampo & Baumeister, 2007). Therefore, the extent to which people can simply push intrusive thoughts away and focus on the current moment is limited and partial at best. A more plausible mechanism may be to stop intrusive thoughts at the source by fulfilling the goals that would induce unwanted thoughts in the first place. Dispositional mindfulness may be earned through fulfillment of goal rather than induced by sheer will, and this may help explain the relationship between dispositional mindfulness and high self-control.

To be sure, we agree that dispositional mindfulness promotes optimal functioning and well-being. Our own work has shown that intrusive thoughts are disruptive of goal-pursuit, and that a lack of intrusive thoughts facilitates executive functioning across multiple domains (Masicampo & Baumeister, 2007). However, we propose that a bidirectional relationship confounds many of the findings linking a mindfulness disposition to other positive outcomes. Although mindfulness may benefit one's well-being, mindful states may be most accessible to those who already exhibit a high degree of self-control.

Being Mindful of Theoretical Overlap in Future Research

Future work will benefit from a focus on the unique contributions of mindful states for the achievement of positive outcomes. Therefore, we reviewed two potential areas of overlap in the current mindfulness literature. First, mindfulness interventions appear to share many characteristics with self-regulatory exercise. Second, findings on dispositional mindfulness may be compromised by work suggesting that the relationship between mindful states and optimal functioning is bidirectional. Fortunately, controlling for the overlap between mindfulness and self-regulatory factors should not be a difficult task. By using isolated mindfulness inductions in the lab, researchers can eliminate exercise effects and control for individual differences in the disposition for mindful states. Furthermore, laboratory settings should be ideal for assessing the individual mechanisms, such as nonattachment and insight into psychological states that Brown and colleagues (this issue) suggest are behind the positive benefits of mindfulness. Methods sidestepping full-fledged mindfulness inductions and focusing on individual metacognitive factors may prove helpful in exposing the mechanisms that produce positive outcomes independent of self-regulatory processes.

Note

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More Than Mindfulness: When You Have a Tiger by the Tail, Let It Eat You

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The matters discussed in the target article are important. Some of the key ideas in mindfulness based psychotherapy and research are radically different from our cultural (and perhaps human) assumptions. One claim is that lives can be improved by changing the consciousness with which people perceive experiences rather than by changing the contents of the lives and the experiences themselves. A second assertion is that constant monitoring of experience in relation to the ego or self is not only unnecessary but actually detrimental to many dimensions of functioning. Finally, since mindfulness of experience can only occur in the present, our cultural emphasis on maintaining a future time orientation is challenged. These are all contentions that need to be taken seriously.

The authors are to be applauded for taking on this difficult task. They go beyond a focus on clinical outcomes of particular techniques of meditation or therapy to ask questions about the meaning of the techniques and the kind of consciousness that they imply. The paper exhibits sensitivity not only to research requirements but also to some aspects of meditation often missed in meditation research.

However, there is a danger in this field of premature closure. The idea of mindfulness (not necessarily

defined as is done in this paper) was originally drawn from Buddhist psychology and meditation techniques where it forms only one strand of an interdependent, complex whole. The “burgeoning” research interest in mindfulness stems from the success of a number of new therapies in which mindfulness practices play an important role but which are also composed of other interrelated aspects. My aim in these comments is to contextualize this work both within Buddhism and within those therapies. From this I will argue that the various scales purporting to operationalize and measure mindfulness actually measure a different factor; such research may be important in its own right in understanding health, but it is tangential to the theoretical claims in the paper. Seeing mindfulness both in the Buddhist context in its relation to Buddhist conceptions of wisdom and in the modern therapeutic context offers the opportunity to expand our understanding and perhaps offer new ideas for both research and therapy.

The Buddhist Context

Technically, in the Buddhist *Abhidharma* (texts which are often referred to as Buddhist psychology;