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Kentaro Fujita¹

Abstract

The notion that self-control entails effortful inhibition of impulses dominates prevailing psychological models of self-control. This article describes some of the conceptual and empirical limitations of defining self-control as the effortful inhibition of impulses. The present article instead advocates for a dual-motive conceptualization, which describes self-control as the process of advancing distal rather than proximal motivations when the two compete. Effortful impulse inhibition in this model represents only one of many means by which people promote their self-control efforts. Adopting a dual-motive approach offers new insight and proposes several new research directions. This article discusses these implications and calls for psychologists to reconsider the way self-control is currently understood.

Keywords

self-control, delay-of-gratification, self-regulation, goal pursuit

Self-control failure—the inability to make decisions and act in a manner consistent with one’s global goals and values—represents one of the most puzzling phenomena of human behavior. Despite their best intentions not to, dieters indulge in fattening foods, consumers spend more money than they can afford, smokers continue to smoke, and the sedentary excuse themselves from exercising. People frequently appear all-too-willing to sacrifice the attainment of their goals and values to indulge in tempting, immediately gratifying rewards. For decades, social and personality psychologists have played an important role in a multidisciplinary effort to understand why having sufficient skills, knowledge, and opportunities still leaves people unable to behave as they intend (for reviews, see Baumeister & Heatherton, 1996; Herman & Polivy, 2004; Metcalfe & Mischel, 1999; Mischel, 1974; Mischel, Shoda, & Rodriguez, 1989; Muraven & Baumeister, 2000; Trope & Fishbach, 2005; Trope & Neter, 1994).

A common notion shared by many psychological conceptualizations of self-control is that self-control entails the effortful inhibition of temptation impulses. The central thesis of this article is that although effortful inhibition of impulses is an important component of self-control, it may be a mistake to conclude that effortful inhibition is necessary for or defining of self-control. What this article attempts to highlight are the problems associated with defining self-control as effortful impulse inhibition and the insights that researchers can attain by adopting an alternative conceptualization.

What Is Self-Control?

Throughout much of the history of research on self-control, researchers have defined self-control as a preference for larger delayed rewards over smaller immediate rewards (Ainslie, 1975; Hoch & Loewenstein, 1991; Kirby & Herrnstein, 1995; Mischel, 1974; Mischel et al., 1989; Rachlin, 1995; Rachlin & Green, 1972; Schelling, 1978; Strotz, 1955; Thaler & Shefrin, 1981). This conceptualization of self-control is the basis for research in delay-of-gratification and temporal discounting. For example, in classic research studies by Walter Mischel and his colleagues (see Metcalfe & Mischel, 1999; Mischel et al., 1989, for review), children were presented with a small, immediately available reward in the form of a single marshmallow. They were told that if they could wait out a 15-minute delay without consuming it, they would receive a larger reward in the form of two marshmallows. Thus, these children were presented with the self-control dilemma of having one marshmallow now versus two marshmallows later. Very few children under the age of 4 are capable of waiting the full 15 minutes required to receive the

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larger reward. Research in the temporal discounting tradition (also referred to as delay discounting) similarly presents participants with choices between smaller immediate versus larger delayed rewards. Participants in these studies, for example, choose between receiving \$10 now versus \$100 a year from now. Although traditional economic theory suggests that people should discount the value of distant future rewards, the rate of observed discounting is often much higher than is considered normative (e.g., Green, Fristoe, & Myerson, 1994; Kirby & Herrnstein, 1995). Thus, people appear to prefer smaller immediate rewards over larger delayed rewards to their economic disadvantage.

From a motivational perspective, self-control dilemmas as exemplified by delay-of-gratification and temporal discounting represent conflicts between two motives: one that presses for a smaller, more concrete and proximal reward, and the other that presses for a larger, more abstract and remote reward (Fujita, 2008; Hoch & Loewenstein, 1991; Mischel, 1974; Mischel et al., 1989; Rachlin, 2000). The conflict is such that only one of these two motives can be satisfied. Thus, self-control dilemmas are fundamentally dual-motive conflicts. Successful resolution of the self-control problem requires acting consistently with the motive that presses for the larger, more abstract, distal reward. The proximity and salience of the smaller, more concrete reward, however, renders this act challenging.

To appreciate this dual-motive account of self-control, consider a prototypical self-control dilemma: dieters confronted with chocolate cake. Better health and physical appearance may motivate dieting behavior, but the abstractness and remoteness of these motivations stand in stark contrast to the more concrete, immediately satisfiable motivation to have the indulgent taste of chocolate in one's mouth. Self-control entails acting consistently with one's more abstract, distal motivations, which in this case represents sacrificing the opportunity to taste the chocolate cake in favor of one's health and physical appearance concerns. Self-control failure, on the other hand, entails acting in a manner consistent with one's concrete, proximal motivations, which in this case represents sacrificing one's distal concerns of health and physical appearance in favor of enjoying the immediate and direct experience of chocolate. This situation represents a self-control conflict because the dieter's distal and proximal motivations press for opposing actions. The dieter can satisfy only one or the other. Note that such a structural conflict is less evident among non-dieters. In the absence of a countervailing distal motivation (i.e., the desire to lose weight), chocolate cake is unlikely to provoke a conflict between distal and proximal motivations.¹

Although self-control represents a type of self-regulation, not all self-regulation necessarily entails self-control. Self-regulation refers to the general process by which people adopt and manage various goals and standards for their thoughts, feelings, and behavior, and then ensure that these goals and standards are met (e.g., Carver & Scheier, 1982,

1990). Self-regulation involves numerous challenges, which include deciding which goals to pursue, planning how to pursue these goals, implementing these plans, protecting goals from competing concerns, and deciding whether to continue or abandon goals following success or failure feedback (e.g., Gollwitzer, 1990). Self-control is one of these specific self-regulatory challenges—promoting one's abstract and distal goals when they are threatened by competing concrete and proximal goals. Self-regulation, however, can involve other challenges that do not involve the dual-motive conflict that a self-control dilemma presents. Shooting a free throw in basketball, for example, requires careful regulation of one's balance and hand-eye coordination in service of one's athletic goals (e.g., Baumeister, 1984; Beilock & Carr, 2004). Yet, it would be inappropriate to characterize this example as a self-control dilemma as basketball players are not normally tempted to miss their free throws. Shooting a free throw is not a dual-motive situation wherein distal motivations conflict with concrete, proximal motivations. Instead, it involves the self-regulatory challenge of matching one's actions as closely as possible to a behavioral standard. Not all choice dilemmas, moreover, entail self-control conflicts. Consider the student forced to choose between two classes that are equally desirable and instrumental to his or her academic goals. Although this student might struggle and feel conflicted about this decision, neither option would undermine his or her more abstract academic goals. As there is no need to promote a distal over a proximal motive, this decisional conflict does not represent a self-control dilemma. Instead, this situation exemplifies the self-regulatory challenge of selecting the most appropriate means to attain a desired end.

Self-control is thus the process of advancing abstract, distal motives over concrete, proximal motives when the two motives directly conflict. Self-control is not, however, necessarily and prescriptively a good thing. Overzealous pursuit of one goal can lead to other valued goals being unfulfilled (e.g., Fishbach & Dhar, 2007; Kivetz & Keinan, 2006). People may also pursue goals that are ultimately unsatisfying or detrimental (e.g., Deci & Ryan, 1985). Whereas self-control might improve the likelihood of attaining a valued goal, attaining this goal is not necessarily adaptive or functional. Thus, whether self-control is good in a prescriptive sense requires nuanced consideration.

Effortful Inhibition of Impulses

Psychological analyses of self-control broadly attempt to explain how people advance their abstract, distal motives over conflicting concrete, proximal motives in decision and action. Much of this work has focused on the effortful inhibition of temptation impulses. Inspired in large part by dual-process and dual-systems theories that have dominated research in social psychology (e.g., Devine, 1989; Fazio, 1990; Gilbert, 1991; Greenwald & Banaji, 1995; Petty &

Cacioppo, 1986; Smith & DeCoster, 2000; Strack & Deutsch, 2004; see Chaiken & Trope, 1999, for an extensive overview), researchers have suggested that self-control failures occur due to the inability to inhibit impulses that are activated by salient temptations. Researchers in this tradition typically define impulses broadly as any thought, feeling, or behavior activated in response to a salient temptation that promotes securing and indulging in that temptation. From a motivational standpoint, impulses are those cognitive, affective, and behavioral reactions that concur with one's more concrete, proximal motivations in a given situation. Left unimpeded, these temptation impulses lead to self-control failures. This tradition of research proposes that self-control requires recognizing these impulses as undesirable and inhibiting them. This inhibition process is believed to be initiated consciously and to require sufficient cognitive and motivational resources. Any decrements in one's conscious resources can disrupt this inhibition process, allowing one's impulses to dictate evaluation, choice, and behavior. This proposed intrapsychic conflict between impulse activation and effortful impulse inhibition is evident in many theoretical accounts of self-control in psychology, including models of ego depletion (e.g., Baumeister & Heatherton, 1996; Muraven & Baumeister, 2000), hot versus cool systems (e.g., Metcalfe & Mischel, 1999), visceral versus rational decision making (e.g., Loewenstein, 1996), impulsive versus reflective systems (e.g., Hofmann, Friese, & Strack, 2009), and implicit versus explicit cognitions (e.g., Wiers & Stacy, 2006).

The notion that self-control entails the effortful inhibition of impulses is supported by three interrelated lines of research. This work suggests that (a) impulses are activated by salient temptations, (b) stronger impulses are associated with more numerous self-control failures, and (c) decrements to one's cognitive and motivational resources increase the likelihood of self-control failure.

Activation of Impulses by Salient Temptations. Research indicates that salient temptations indeed activate impulses to indulge in those temptations. For example, food cues, such as visual displays and smells, prompt restrained dieters to report greater hunger and cause them to eat greater quantities of indulgent foods (e.g., Fedoroff, Polivy, & Herman, 1997, 2003). Similarly, smokers who have abstained from smoking report significantly more positive thoughts about smoking when exposed to a lit cigarette versus a roll of tape (e.g., Sayette & Hufford, 1997; Sayette, Martin, Wertz, Shiffman, & Perrott, 2001). Research, moreover, has suggested that the activation of impulses requires little, if any, conscious deliberation. For example, mere exposure to incidental words related to palatable foods spontaneously activates positive hedonic thoughts among restrained eaters, distracting them from the focal task at hand (e.g., Papies, Stroebe, & Aarts, 2007). Likewise, smokers evidence more positive thoughts in response to sensory stimuli associated with smoking than

nonsmokers, even on measures that do not require conscious introspection or deliberation (e.g., Sherman, Rose, Koch, Presson, & Chassin, 2003).

Stronger Impulses Are Associated With Self-Control Failure. A second stream of research demonstrates that those with stronger impulses (i.e., impulses that are harder to inhibit) are more likely to experience self-control failures. For example, the more strongly one associates alcohol and smoking with positivity, the more likely one is to drink to excess and smoke, respectively (e.g., de Houwer, Custers, & De Clercq, 2006; Huijding & de Jong, 2006; Waters et al., 2007; Wiers & Stacy, 2006). Similarly, the more strongly a temptation automatically draws people's attention, the more likely they are to fail at self-control (e.g., Waters et al., 2003).

Decrements in Cognitive and Motivational Resources Promote Self-Control Failure. A third line of research indicates that demands on conscious resources can impair self-control. For example, people are more likely to choose chocolate cake over fruit salad as a snack when rehearsing a 7-digit number string (e.g., Shiv & Fedorikhin, 1999; see also Ward & Mann, 2000). Cognitive load similarly exacerbates temporal discounting—the tendency to prefer smaller immediate over larger delayed rewards (e.g., Hinson, Jameson, & Whitney, 2003). Other factors that might impair one's cognitive capacity such as emotional distress and alcohol consumption also increase self-control failures (e.g., Hull & Slone, 2004; Polivy, Herman, & McFarlane, 1994; Rutter, 1987; Shiffman & Balabanis, 1995). Additional research shows that individual differences in cognitive resource capacity affect people's self-control. For example, deficiencies in working memory predict overeating (e.g., Hofmann, Gschwendner, Friese, Wiers, & Schmitt, 2008) and problematic drinking behavior (e.g., Whitney, Hinson, & Jameson, 2006).

Beyond cognitive capacity, self-control also appears to require sufficient energy. Research on ego depletion suggests that disparate acts of self-control all draw from a shared resource of energy (e.g., Baumeister & Heatherton, 1996; Muraven & Baumeister, 2000). When this energy store is depleted, people are no longer able to inhibit their impulses and fail in their self-control efforts. For example, prior acts of self-control (e.g., eating radishes in the presence of more alluring chocolate chip cookies) reduce self-control in subsequent tasks (e.g., persistence on unsolvable puzzles; Baumeister, Bratslavsky, Muraven, & Tice, 1998). States of ego depletion have also been linked to overeating (e.g., Vohs & Heatherton, 2000) and excessive alcohol consumption (e.g., Muraven, Collins, & Nienhaus, 2002).

On Defining Self-Control as Effortful Inhibition of Impulses

The research reviewed above makes clear that effortful inhibition of impulses enhances self-control; thus, it is

unsurprising that it plays a central role in psychological models. This article does not dispute the importance of effortful impulse inhibition in self-control. Many writers have gone one step further, however, and have suggested that effortful impulse inhibition is a necessary or defining feature of self-control. That is, they explicitly or implicitly define self-control as the effortful inhibition of impulses. Although some might view this change in how self-control is defined as merely a semantic issue, it represents a fundamental shift away from longstanding dual-motive conceptualizations.

Defining self-control as the effortful inhibition of impulses conflates a strategy that people use to promote a particular end with the end itself. Recall that dual-motive conceptualizations propose that self-control requires people to advance their abstract and distal motivations over competing concrete and proximal motivations. Effortful impulse inhibition in this context is interesting because it represents a means by which people promote those abstract, distal motivations. It, however, is only one of many mechanisms that people might use. Espousing effortful impulse inhibition as a defining feature of self-control has led researchers to neglect other efficacious mechanisms that people use to promote their abstract, distal motivations over competing concrete, proximal motivations. Three areas of research highlight some of the alternative strategies that people use. These findings are difficult to reconcile with a definition of self-control as the effortful inhibition of impulses.

Regulating the Availability and Opportunity to Indulge in Temptation. Effortful impulse inhibition models suggest that the self-control process begins with the activation of impulses in response to salient temptations. The focus is thus on those processes that are engaged after an impulse has been initiated. What remains largely unaddressed, however, are the processes that people engage in to avoid salient temptations in the first place and to limit the effect of those anticipated temptations on behavior. Research has repeatedly shown that when people are able to anticipate potential self-control failures, they prospectively restrict the future availability of and opportunity to indulge in temptations (e.g., Ainslie, 1975; Hoch & Loewenstein, 1991; Rachlin, 1995, 2000; Thaler & Shefrin, 1981; Trope & Fishbach, 2000, 2005; Wertenbroch, 1998). The most cited example of such behavior is Odysseus, who, wishing to hear the singing of the Sirens, bound himself to his ship's mast to prevent being seduced to steer it into the dangerous shoals. Such prospective self-control efforts, however, are evident among nonmythical individuals as well. For example, people deposit money into "Christmas club accounts" that pay no interest yet charge early withdrawal fees (e.g., Thaler & Shefrin, 1981). This financially counternormative behavior renders the deposited money less available for splurging on indulgent temptations, thus enhancing the likelihood of self-control success.

Children also appear to be cognizant that self-control can be enhanced by restricting the availability of and opportunity to indulge in temptations. Children's self-control abilities increase with age (e.g., Mischel et al., 1989), and one explanation for this is their increasing awareness of the goal-undermining effects of exposure to temptations (e.g., Mischel & Mischel, 1983; Rodriguez, Mischel, & Shoda, 1989). Whereas 4-year-old children mistakenly believe that exposure to temptation increases self-control, 7- and 8-year-old children understand that occluding or removing temptations is a more effective strategy (e.g., Mischel & Mischel, 1983). Age-related improvements in self-control thus appear to be related to children's understanding that the first step to self-control is to avoid having the opportunity to indulge in immediately available temptations.

Contemporary approaches that view effortful impulse inhibition as the hallmark of self-control largely ignore this proactive and prospective regulation of exposure to and opportunity to indulge in temptations. The defining features of successful effortful impulse inhibition are not present in these instances. Take, for example, a dieter who decides to walk home using an alternative route that purposefully bypasses walking in front of a bakery. As no temptation is ever directly encountered, no temptation impulse is prompted by the sights and smells of baked goods, and there is thus no corresponding need for effortful inhibition of that impulse. Self-control is achieved not through effortful impulse inhibition but rather through the regulation of one's decision-making environment. As no impulse is ever activated and there is no corresponding need to inhibit such an activated impulse, effortful impulse inhibition perspectives are silent to whether the dieter's alternative route home constitutes self-control success. This sort of behavior is commonplace, however, and is clearly motivated to protect people's distal over competing, yet more proximal, motives (e.g., Hoch & Loewenstein, 1991; Mischel & Mischel, 1983; Rachlin, 2000; Rodriguez et al., 1989; Thaler & Shefrin, 1981; Trope & Fishbach, 2000, 2005; Wertenbroch, 1998).

Self-Control Without Conscious Deliberation. One of the foundational principles of psychology is that people's capacity to process and respond consciously to their social environments is limited (e.g., Bargh & Chartrand, 1999; Fiske & Taylor, 2008; Shiffrin & Schneider, 1977). Although people are capable of consciously attending to and processing specific information, they rely for the most part on cognitive procedures that require little conscious effort, intention, monitoring, or resources to process information from our environments. These same principles can be extended to self-regulation and self-control. People can consciously monitor their environments for opportunities to attain valued goals and, once detected, consciously control their behaviors to capitalize on these opportunities, as effortful impulse inhibition models of self-control suggest. It would be more cognitively efficient, however, to relegate these tasks to

processes that require less conscious effort and fewer resources. Research has indicated that people routinize and automate goal-striving behaviors in response to various environmental cues. For example, if a student consistently engages in academic achievement in a classroom, stimuli such as desks and chalkboards eventually become cues that prompt achievement behavior. Exposure to such cues can promote goal-striving behavior even in the absence of conscious awareness, intent, and monitoring (e.g., Bargh, Gollwitzer, Lee-Chai, Barndollar, & Troetschel, 2001; Chartrand & Bargh, 1996).

The purpose of such routinization and automatization of behavior is to free up resources and to increase one's ability to "multitask." In most situations, people monitor several goals simultaneously, and such automated processing allows them to balance their attention across multiple goals at the same time. Consider, for example, the dieter who is on a date at a restaurant. He not only has to avoid indulging in decadent foods, but he also has to pay attention to his date, present himself in a positive light, and avoid eyeing other attractive restaurant patrons. In these situations of multiple, simultaneous self-control conflicts, effortful self-control in the resolution of one conflict (e.g., selecting low-calorie foods) might jeopardize the successful resolution of the others (e.g., paying attention to his date rather than his food, presenting himself in a positive rather than bluntly honest light, averting his gaze from other attractive patrons to his date). If instead he could relegate some of his self-control to processes that demand fewer resources, he could more effectively attain multiple goals at the same time. People are indeed capable of developing such procedures (e.g., Fishbach, Friedman, & Kruglanski, 2003; Fishbach & Shah, 2006; Fishbach, Zhang, & Trope, 2010; Moskowitz, Gollwitzer, Wasel, & Schaal, 1999; Papies, Stroebe, & Aarts, 2008).

Fishbach and her colleagues (2003), for example, have suggested that when sufficiently motivated, people can develop over time an asymmetric pattern of cognitive associations between distal goals and proximal temptations to promote self-control. Specifically, self-control is enhanced to the extent that thoughts about temptations promote thinking about goals, but thoughts about goals do not reciprocally promote thinking about temptations. This asymmetric pattern of associations biases people's thoughts in favor of their distal goals when they encounter salient proximal temptations, thus increasing the likelihood of self-control success. Indeed, using subliminal sequential priming methodology, Fishbach and her colleagues (2003; see also Papies et al., 2008) found that people evidence cognitive associations whereby temptations (e.g., "cake") promote the activation of goals (e.g., "slim"), but the activation of goals does not promote the activation of temptations. One can observe these automatic asymmetric associations even when participants' cognitive resources are burdened. Demonstrating the efficacy of these associations, the magnitude of the asymmetry reliably distinguishes those with a history of self-control

success versus failure (e.g., Fishbach et al., 2003, Study 4; Papies et al., 2008). Supporting the causal role that these asymmetric associations have in promoting self-control, the presence of incidental temptation cues (copies of *Chocolatier* magazine) can paradoxically enhance rather than impair self-control (choosing an apple over a candy bar as a snack; Fishbach et al., 2003). These results thus suggest that people's self-control can benefit from the operation of mechanisms that do not tax conscious resources.

Although temptation cues generally elicit spontaneously positive evaluations of indulging in those temptations (e.g., Papies et al., 2007; Sayette & Hufford, 1997; Sherman et al., 2003), Fishbach and colleagues have suggested that people can counter these impulses by activating more negative associations (Fishbach & Shah, 2006; see also Fishbach et al., 2010). Over time, those who are sufficiently motivated can automate such responses so that these negative evaluations are activated with little conscious intent or deliberation. Participants in their studies completed a reaction-time task in which they were asked to respond to various temptations (e.g., "cake," "party") and goals (e.g., "slim," "study") by moving a joystick lever either toward or away from the computer screen. As participants are unaware that faster reaction times in pushing the lever toward rather than away from a presented stimulus indicate more positive evaluations, this task allows for an assessment of spontaneous, nondeliberative evaluations (e.g., Cacioppo, Priester, & Berntson, 1993; Eder & Rothermund, 2008). Results revealed that more successful self-regulators evidenced more negative evaluations of temptations, as indicated by their faster reaction times to pull the lever away rather than toward temptation stimuli. Furthermore, training participants to pull the lever away from temptations faster led to greater self-control in subsequent tasks, demonstrating the causal role that these evaluations have on self-control (Fishbach & Shah, 2006, Studies 4 & 5). These data suggest that people can learn to counter temptation impulses by automatically activating negative associations of temptations and that associating temptations with negativity in this way can promote self-control with little conscious intervention or deliberation.

Although most theorists have assumed that the development of nondeliberative cognitive operations takes repeated and consistent practice over time (e.g., Bargh, 1990), research suggests that such time and effort may not be necessary. Research on implementation intentions suggests that simply generating a plan to engage in specific behavior in a specific situation may be sufficient to create an automatic goal-striving response (e.g., Gollwitzer, 1999; Gollwitzer, Fujita, & Oettingen, 2004; Gollwitzer & Sheeran, 2006). Implementation intentions are behavioral plans that take the form of an *if-then* contingency. That is, in generating plans for future goal behavior, implementation intentions are formed when people specify *if* they find themselves in situation X, *then* they will do Y. Simply instructing participants to rehearse an implementation intention several times ("*If I*

see the number 5 on the computer screen, *then* I will type in my response particularly fast!”) is sufficient in creating automatic goal-striving behavior when the situation specified by the plan is later encountered (e.g., Brandstätter, Lengfelder, & Gollwitzer, 2001). It appears, then, that even with minimal practice, implementation intentions prompt people to engage in goal-striving behaviors, and such behaviors can be initiated in the heat-of-the-moment with little conscious deliberation. Research has documented the success of implementation intentions in promoting self-control in numerous domains, including procrastination on academic assignments, health screening, and health promoting behaviors (see Gollwitzer & Sheeran, 2006, for review). Thus, the development of self-control mechanisms requiring little or no conscious deliberation may not require the consistent practice over time that some have assumed.

Collectively, these findings suggest that people may be able to protect their distal motivations from being undermined by proximal motivations using mechanisms that do not entail the effortful inhibition of impulses. People appear capable of using other cognitive mechanisms that counter the threat of temptation efficiently and without requiring the conscious resources and effort that effortful impulse inhibition models suggest are necessary for self-control.

Cognitive Reappraisal. Defining self-control as the effortful inhibition of impulses also overlooks research that highlights people’s ability to capitalize on cognitive reappraisal to promote self-control. A fundamental tenet in psychology is that people’s judgments, decisions, and behaviors do not necessarily reflect the objective features of their social worlds but rather their subjective interpretations or construals (e.g., Balcells & Dunning, 2006; Bruner, 1957; Griffin & Ross, 1991; Hastorf & Cantril, 1954; Kunda, 1990; Proffitt, Stefanucci, Banton, & Epstein, 2003). People’s experience of an object or event is fundamentally altered upon adoption of alternate construals (also referred to as reappraisals or cognitive transformations; Gross, 2002; Kross, Ayduk, & Mischel, 2005; Liberman, Trope, & Stephan, 2007; Metcalfe & Mischel, 1999; Mischel et al., 1989; Trope & Liberman, 2003, 2010; Vallacher & Wegner, 1985, 1987). Reappraisal of temptations systematically affects self-control decision making; specifically, when people construe events more abstractly, they evidence choices and behaviors that more closely accord with their distal rather than competing proximal motivations (for reviews, see Fujita, 2008; Fujita, Trope, & Liberman, 2006, 2010; Metcalfe & Mischel, 1999; Mischel et al., 1989).

In one of the first studies to demonstrate reappraisal as a self-control promoting mechanism, Moore, Mischel, and Zeiss (1976; see also Mischel & Moore, 1973) presented preschoolers with a choice of two rewards (two marshmallows vs. a pretzel). After children indicated which of the two rewards they preferred, they were promised the more preferred reward if they could wait out a delay without consuming the less preferred reward that was made immediately

available. Half of the children were asked to reconstrue the immediately available reward more abstractly by pretending that they were observing a picture surrounded by a picture frame. As a control, the other children were asked to attend to the reward as they normally would. Those instructed to reconstrue the immediately available reward as a picture delayed gratification longer than those who did not. It is important that Moore and colleagues also had two additional conditions in which children were presented with a picture of the less preferred but immediately available reward rather than the real reward itself. Half of those children were asked to reconstrue the picture more concretely as if the reward were real, whereas the other half were asked to attend to the picture as they normally would. Those instructed to reconstrue the depicted reward more concretely evidenced nearly identical poor delay of gratification as those children exposed to the real reward. Thus, irrespective of how the temptation was presented (picture vs. real), children who construed a temptation relatively more abstractly versus concretely showed greater self-control.

In emotion regulation research, reappraisal (or reappraisal) of an emotion-evoking event can obviate the need for effortful inhibition strategies such as suppression (e.g., Gross, 2002). Reappraisal is believed to alter fundamentally the experience of the event such that the emotion is no longer evoked. No subsequent effortful regulation of that emotion is thus necessary. Research by Fujita and Han (2009) extended this idea to self-control conflicts, demonstrating that abstract reappraisals promote self-control by transforming the temptation impulse experience.² Female college students first generated abstract category labels versus concrete exemplars for a series of 40 everyday objects (e.g., “animal” vs. “poodle” for the object “dog”), a task that research has shown induces abstract versus concrete reappraisals that carry over to subsequent unrelated tasks (e.g., Fujita, Trope, Liberman, & Levin-Sagi, 2006). Fujita and Han then measured the degree to which participants associated apples versus candy bars with positivity versus negativity (e.g., Karpinski & Hilton, 2001). These associations capture people’s evaluation of objects without requiring conscious introspection or deliberation (e.g., Fazio & Olson, 2003; Greenwald, McGhee, & Schwartz, 1998) and have been used in other research as a measure of temptation impulses (e.g., Hofmann, Rauch, & Gawronski, 2007; see also Fishbach & Shah, 2006; Fishbach et al., 2010). As the consumption of candy bars represents a failure of self-control among many female college students, who frequently report being concerned with weight loss (e.g., Mintz & Betz, 1988), associating candy bars with positivity rather than negativity (relative to apples) can be interpreted as the experience of a temptation impulse. As predicted, abstract reappraisals altered the experience of temptation impulses: Participants associated candy bars less with positivity versus negativity when induced to construe events abstractly rather than concretely. Moreover, as a more direct measure of self-control, Fujita and Han then had participants

indicate their preferences toward eating an apple versus eating a candy bar. Those induced to construe events more abstractly overwhelmingly preferred the apple, and these construal-dependent preferences were mediated by their evaluative associations. This latter finding suggests not only that abstract construals promote greater self-control but also that they may do so in the absence of conscious effort or deliberation. By altering the nature of the temptation impulse through cognitive transformation, more abstract construals of events represent an efficient alternate strategy with which to promote self-control, one that may not require effortful inhibition of impulses.

In Defense of Defining Self-Control as Effortful Impulse Inhibition?

The three lines of research discussed above each suggest mechanisms that people use to promote their distal over proximal motivations that do not entail the effortful inhibition of impulses. A dual-motive approach to self-control would suggest that these should all be considered means by which people enhance their self-control efforts. In contrast, an advocate of effortful impulse inhibition models might instead propose that these mechanisms represent some other class of self-regulation. Distinguishing effortful impulse inhibition on one hand and these other distal motive-promoting mechanisms on the other, however, creates conceptual and empirical issues that researchers should carefully consider.

Imagine that a dieter is presented with a snack choice between an apple and a piece of chocolate cake, and he chooses the apple. Is this an act of self-control? If we are to distinguish self-control from other types of regulation on the basis of effortful impulse inhibition, we cannot answer this question without some measure of psychological processing. Effortful impulse inhibition models suggest that choice and behavior are insufficient for documenting self-control. Instead, we would need to confirm that the dieter indeed made this choice via effortful impulse inhibition rather than via some alternative mechanism, such as asymmetric temptation-goal associations, implementation intentions, or reconstrual. Dual-motive conceptualizations of self-control provide a clearer, more immediate answer. The dieter has successfully pursued an abstract and distal motivation (health and physical appearance concerns) over a concrete and proximal motivation (the desire to taste chocolate) and has thus demonstrated self-control. Rather than provide greater clarity, suggesting that effortful impulse inhibition is a unique and defining feature of self-control creates conceptually and empirically cumbersome distinctions.

Self-Control as the Resolution of a Dual-Motive Conflict

The limitations of conceptualizing self-control as the effortful inhibition of impulses arise from conflating the means

by which people achieve an end (effortful impulse inhibition) with the end itself (prioritizing distal over conflicting proximal motivations). How one defines self-control is not merely a semantic issue. This subtle shift in definition has real implications for what phenomena and psychological processes a theoretical account of self-control needs to address. Given the limitations of the effortful impulse inhibition conceptualization, it makes sense to embrace an alternative: self-control as the resolution of a dual-motive conflict.

The dual-motive perspective suggests that effortful impulse inhibition represents one of many mechanisms by which people prioritize their distal, abstract motivations over competing proximal, concrete motivations. Without effortful impulse inhibition, people's proximal, concrete motivations might dominate choice and behavior. This prioritization of distal over competing proximal motivations, however, is the same end that is achieved by mechanisms such as regulating the availability of temptations, asymmetric temptation-goal associations, implementation intentions, and reconstrual. Given that effortful impulse inhibition can be rendered less effective as a self-control strategy by burdens on one's cognitive and self-regulatory resources (e.g., Baumeister & Heatherton, 1996; Wegner, 1994), people have developed alternative means to secure their distal, abstract goals. Rather than depend on a single, potentially fallible strategy, when sufficiently motivated, people will use any and all strategies possible to ensure better self-control.

The effortful impulse inhibition story of self-control largely describes a reactionary process of protecting goals from temptations. That is, people inhibit impulses after they are activated by salient temptations. Rather than describe a reactionary self-regulator, dual-motive models of self-control instead allow for people to be more agentic in their self-regulation efforts, proactively anticipating and prospectively implementing strategies to head off the likelihood of self-control failures. Like Odysseus, people prospectively adopt strategies to reduce the likelihood of confronting temptation and to decrease the likelihood of indulging in temptation even if one is indeed encountered. They may also generate implementation intentions to automate goal-striving responses to bolster future self-control efforts when they can detail the specific situations in which temptations are likely to be encountered and can plan appropriate behavioral responses. Some may generate and adopt alternate reconstruals of impending temptations to protect their goals. Others may even develop nondeliberative mechanisms that may further stave off self-control failures through the operation of processes such as asymmetric temptation-goal associations.

The use of some or all of these strategies may obviate the need for effortful impulse inhibition. That is, if people have successfully limited the availability of temptations, generated effective implementation intentions, adopted effective alternate reconstruals, and developed efficient

nondeliberative responses to temptations, in principle no temptation impulse should be experienced. In such cases, people will have avoided activating temptation impulses and should have mechanisms in place that address with little conscious effort any impulses that are prompted by unanticipated temptations. One implication of this reasoning is that the experience of temptation impulses may at times signal the failure of these strategies or the failure to implement these strategies effectively. These impulse experiences may alert people to the need to resort to effortful inhibition as a strategy of last resort (see also Morsella, 2005, Footnote 1).

Another implication of conceptualizing self-control in this way is that people who are generally more successful at self-control should use alternative strategies beyond effortful impulse inhibition to a greater extent. Indeed, research has demonstrated that those with a history of better self-control are more likely to capitalize on opportunities to engage in prospective self-control (e.g., Trope & Fishbach, 2000) and evidence the development of nondeliberative self-control mechanisms (e.g., Fishbach et al., 2003; Fishbach & Shah, 2006; Papiés et al., 2008). Moreover, overreliance on effortful impulse inhibition strategies may be symptomatic of self-control deficiencies. A person who relies solely on effortful impulse inhibition as a means to promote self-control may become vulnerable to failure under certain situational conditions, such as states of distraction, cognitive load, or self-regulatory energy depletion (e.g., Baumeister & Heatherton, 1996; Muraven & Baumeister, 2000; Wegner, 1994; see also Erskine, 2008; Erskine, Georgiou, & Kvavilashvili, 2010). Supplementing effortful inhibition with other strategies that do not share these potential limitations might lead one's self-control to be less contingent on these situational factors. It is ironic, then, that although effortful inhibition can be used to promote self-control, overreliance on this strategy may render people more vulnerable to self-control failures under specific conditions and may represent a systematic underutilization of other means.

The dual-motive approach does not suggest that effortful impulse inhibition is problematic or somehow unimportant to self-control. On the contrary, given sufficient cognitive and motivational resources, people who are capable of effortful impulse inhibition in foregoing temptations should have an advantage over those who are not. Although effortful impulse inhibition may largely be sufficient for self-control, the two are not synonymous. Due to the potential liabilities of effortful impulse inhibition when one's conscious and regulatory resources are burdened, even the most skilled effortful impulse inhibitors may be vulnerable to systematic self-control breakdowns. If such skill at effortful impulse inhibition were matched with effective alternative means—such as limiting the availability of temptations, developing asymmetric temptation–goal associations, and adopting cognitive reconstruals—fewer self-control failures should be expected.

The present perspective also argues for a nuanced perspective when labeling someone “skilled” or “good” at self-control. As people are able to employ a number of different cognitive and behavioral means to promote self-control, deficiencies or failures to use a particular means can be compensated by expertise or greater use of another. For example, research in effortful impulse inhibition suggests that individuals with below average working memory are particularly vulnerable to self-control failures (e.g., von Hippel, 2007; Whitney et al., 2006). It might be tempting to label such individuals as “bad” at self-control as their lower cognitive capacities may be insufficient to inhibit impulses when temptations are directly presented to them. A dual-motive approach suggests a more nuanced perspective. In most psychological studies of self-control, participants are thrust into situations that they have not anticipated and for which they have not had an opportunity to plan their responses. In their everyday lives, however, people have the opportunity to anticipate events and can choose to enter those that are amenable to their goals and to avoid those that are not. Deficiencies in effortful inhibition may be overcome by avoiding temptations in the first place. By circumventing situations that are likely to cause a self-control conflict, people can avoid taxing their deficient effortful inhibition abilities. Rather than reflecting a lack of skill, these individuals have developed a sophisticated response to a potential self-control liability. Whether such individuals are good at self-control may depend critically on what strategy is being assessed and under what conditions the use of this strategy is being observed.

Deficiencies in effortful impulse inhibition can also be compensated by other strategies beyond limiting temptation availability. For example, developing automatic goal-promoting responses or adopting alternative cognitive reconstruals of temptations would help to reduce the need to rely on one's inadequate effortful inhibition abilities. Thus, just as effortful inhibition may compensate for a failure to limit temptation availability, to automatize goal-promoting responses, and/or to reconstrue the situation, these same strategies may compensate for deficiencies in effortful inhibition.³ Assuming that effortful inhibition is necessary for self-control may lead us astray in characterizing who is good or bad at self-control. People may be better at some strategies than others; assessing self-control success may instead require assessing how well people balance and use their strengths and weaknesses to protect their goals.

New Directions and New Research

The dual-motive approach not only provides greater conceptual clarity to our understanding of self-control but also suggests a number of new research directions. Some of these are discussed below to illustrate the generative potential of this approach.

Understanding Who Uses Alternate Means and When. Although research has demonstrated that people have at their disposal a number of mechanisms to promote self-control beyond effortful inhibition of impulses, little attention has been placed on understanding variability in the use of these alternative means. For example, more needs to be done to understand who is more or less likely, and under what conditions, to restrict the availability of temptations. Similarly, although research demonstrates the efficacy of implementation intentions, it is still unclear whether there are systematic conditions that increase their usage and whether some are more or less likely to rely on them to promote self-control. Understanding who uses these alternative means and when is critical to anyone who aspires to structure social environments to promote self-control. The tools and methods of social psychologists are uniquely suited for addressing this question.

Situational factors can indeed increase the use of means other than effortful impulse inhibition to enhance self-control. For example, studies have shown that situational factors that influence people's construals of events affect their willingness to restrict future opportunities to indulge in temptation. In one study, participants who were induced to construe events more abstractly demonstrated a greater willingness to impose punishment on themselves for future self-control failures than those induced to construe events more concretely (e.g., Fujita & Roberts, 2010). Similarly, asymmetric temptation-goal associations are not rigid responses to temptations but rather are "conditionally automatic," that is, prompted only under certain situations (e.g., Bargh, 1989, 1994). Specifically, people evidence asymmetric temptation-goal associations to a greater extent when they construe events abstractly rather than concretely (e.g., Fujita & Sasota, in press). Given that a number of variables influence the abstractness of people's construals (e.g., Alter & Oppenheimer, 2008; Förster, Liberman, & Shapira, 2009; Libby, Schaeffer, & Eibach, 2009; Liberman et al., 2007; Trope & Liberman, 2003, 2010; Vallacher & Wegner, 1985, 1987), these findings suggest possible interventions that may increase the use of alternatives to effortful inhibition to promote self-control.

A number of other psychological factors might affect whether people use means other than effortful impulse inhibition to promote their self-control. Several of these are discussed below and illustrate this point. One should not view this, however, as an exhaustive list of possibilities.

Identification of self-control conflicts. Some self-control failures may occur because people fail to recognize a situation as one that might undermine their goals and values. That is, people sometimes fail to understand when the critical moments to exert self-control are at hand (e.g., Coelho Do Vale, Pieters, & Zeelenberg, 2008; Myrseth & Fishbach, 2009). The implementation of self-control strategies beyond effortful impulse inhibition critically depends on identifying impending situations as requiring self-control. Any factor that increases this recognition should thus enhance the use

of self-control strategies such as avoiding temptation situations, generating implementation intentions, or adopting cognitive reconstruals. One such factor appears to be whether people identify a behavior as a unique singular act or representative of a broader pattern (e.g., Myrseth & Fishbach, 2009; Rachlin, 1995, 2000; Read, Loewenstein, & Kalyanaraman, 1999). When people focus on what is idiosyncratic and distinct about a situation rather than how that situation is similar to and related to others, they are less likely to consider the broader implications of their actions. As a result, they do not code their behavior as a self-control failure: the sacrifice of an abstract, distal goal in favor of a concrete, proximal reward. If instead, people understand their behavior in terms of a broader pattern, they are more likely to understand that their behavior represents a self-control failure and bring to bear their arsenal of strategies to avoid future failures.

Lay theories. The lay theories that people have about the nature of impulse inhibition may also influence their use of self-control strategies (Job, Dweck, & Walton, 2010; Martijn, Tenbült, Merckelbach, Dreezens, & de Vries, 2002). Those who believe (or are led to believe) that the ability to exert effortful impulse inhibition is limited (vs. unlimited) might be more motivated to search for and adopt alternative means. Similarly, people's theories about the malleability of self-control may play an important role (e.g., Dweck & Leggett, 1988). Those who believe (or are led to believe) that self-control is a malleable skill may be more likely to try to "train in" associations such as asymmetric temptation-goal associations and have them available for use than those who believe that self-control is a fixed ability. People's beliefs about their own self-control abilities may also play an important role in whether they use alternative strategies. For example, those who believe that they are skilled at effortful impulse inhibition may be more willing to forgo the use of alternative means such as restricting the availability of temptation, asymmetric temptation-goal associations, or reconstrual. Guided by the perception that they are capable of maintaining self-control with this single strategy, they may not be motivated to engage in other "insurance" mechanisms. Those who doubt their effortful inhibition abilities, on the other hand, may be less willing to risk their goals on a single strategy and thus bolster the likelihood of self-control by using other means.

Commitment versus progress. Fishbach and colleagues have extensive research demonstrating that whether one attributes one's past or future behavior as reflecting one's progress toward a goal or one's commitment to that goal determines people's self-control decisions and behavior (e.g., Fishbach & Dhar, 2005; Fishbach, Dhar, & Zhang, 2006; Zhang, Fishbach, & Dhar, 2007; see Fishbach & Dhar, 2007, for review). For example, viewing one's past self-control behavior as evidence of goal progress versus goal commitment increases the likelihood of self-control failure in subsequent situations (e.g., Fishbach & Dhar, 2005). Viewing one's past unsuccessful

behavior in the same way, however, decreases the likelihood of self-control failure. This effect of progress versus commitment framing might further extend to one's likelihood of adopting strategies that protect against self-control failures, with progress versus commitment attributions producing a lower likelihood of engaging in prospective self-control after goal successes versus failures.

Deliberative versus implemental mindsets. Whether one is in a deliberative versus implemental regulatory mindset may also influence people's use of alternative self-control strategies beyond effortful impulse control (e.g., Gollwitzer, 1990; Gollwitzer et al., 2004). In different stages of goal pursuit, people need to accomplish different regulatory tasks. For example, when choosing which goals to pursue, people need to consider even-handedly the pros and cons of pursuing one goal over others. Once a goal is chosen, however, such even-handed consideration of goals can disrupt efficient goal pursuit. As such, people need to be more narrow-mindedly focused on the task at hand (e.g., Armor & Taylor, 2003; Fujita, Gollwitzer, & Oettingen, 2007; Gagné & Lydon, 2001; Taylor & Gollwitzer, 1995). To accomplish these regulatory tasks efficiently, people have developed regulatory mindsets, or finely tuned cognitive procedures set to address the self-regulatory task at hand. People have deliberative mindsets to choose which goals to pursue, and implemental mindsets to carry out and implement those goal decisions. For example, relative to a deliberative mindset, implemental mindsets reduce attention to and processing of task-irrelevant stimuli and can do so with little conscious intent or monitoring (e.g., Fujita et al., 2007). On the basis of such findings, one might predict that adopting an implemental rather than deliberative mindset promotes the use of other nondeliberative processes that aid in goal pursuit, such as asymmetric temptation-goal associations.

New Measurement Approaches. Conceptualizing self-control broadly in terms of a dual-motive conflict suggests new approaches to assess and measure people's self-control abilities. As described earlier, the dual-motive approach suggests that much can be learned by assessing how people use a variety of different self-control strategies and mechanisms. These assessments can be used in combination to make nuanced predictions as to who is likely to fail at self-control and why. Consider, for example, a researcher who assesses both asymmetric temptation-goal associations and effortful inhibition abilities. Nondeliberative self-control mechanisms, such as asymmetric temptation-goal associations, should obviate the need to use effortful inhibition abilities. For individuals who have developed such mechanisms, the strength of their asymmetric temptation-goal associations, rather than their effortful inhibition abilities, should predict successful self-control behavior. For those who have not developed such alternative mechanisms, on the other hand, effortful inhibition should serve as a critical predictor. Thus, the combination of the two assessments would allow for

greater precision in predicting who will be successful in their self-control efforts and provide insight into the mechanisms by which this success is achieved. The latter insight allows for specification of the conditions under which an individual is more or less likely to exhibit self-control success versus failure. For example, cognitive load can be expected to disrupt those who rely on effortful impulse inhibition (e.g., Hinson et al., 2003; Shiv & Fedorikhin, 1999; Ward & Mann, 2000) but not those who have developed asymmetric temptation-goal associations (Fishbach et al., 2003).

The dual-motive approach also highlights a need to develop better assessments of people's use of alternative means of self-control beyond effortful impulse inhibition. Although measures of asymmetric temptation-goal associations and evaluative associations have been developed (e.g., Fishbach et al., 2003; Fishbach & Shah, 2006; Papies et al., 2008), measures that systematically assess individual differences in people's regulation of temptation availability, generation of implementation intentions, and adoption of cognitive reconstructions are still needed if the potential of the present conceptualization of self-control is to be fully realized. For example, one can imagine combining a measure of people's restriction of temptation availability with an assessment of their effortful impulse inhibition skills and an assessment of some nondeliberative self-control mechanism (such as asymmetric temptation-goal associations). This combination of measures would permit highly specific predictions as to who is likely to fail at self-control when presented with a temptation as well as who is likely to choose to enter high-risk situations in the first place.

Understanding Interactions Between Mechanisms. The suggestion that effortful impulse inhibition represents only one of many mechanisms that people might use to promote their self-control also calls attention to the need to understand how these mechanisms interact. For example, these processes may operate in a serial fashion, activating only when the preceding mechanism fails to promote sufficiently one's distal motivations over competing and more proximal motivations. One might imagine, for example, that people first try to restrict the availability of temptations. When such efforts fail, they may rely more on the operation of mechanisms such as implementation intentions or asymmetric temptation-goal associations. When, in turn, these efforts fail, people may resort to effortful inhibition (see also Morsella, 2005). On the other hand, one might also imagine situations in which these mechanisms operate in parallel. For example, while in the act of effortfully inhibiting a temptation impulse, people might simultaneously work to restrict the opportunity to indulge in the salient temptation by removing it from one's immediate vicinity.

Whether these mechanisms operate in serial or parallel fashion might depend on some characteristic of the individual. For example, perhaps those who are more committed to their distal motivations are likely to engage in these

mechanisms in parallel rather than in serial fashion. Those who are less committed may have sufficient motivation to engage only one mechanism at a time. Other situational and personality factors may also influence the ways in which these various mechanisms interact. On the basis of regulatory mode theory (e.g., Higgins, Kruglanski, & Pierro, 2003), for example, one might predict that those who are more locomotion-oriented (those concerned about smooth movement in goal pursuit) as compared to more assessment-oriented (those concerned about comparisons to some standard) are more likely to engage multiple self-control mechanisms in parallel. The desire to ensure movement may prompt high locomotors to pursue multiple means simultaneously rather than selecting the single best or most efficacious means.

Call for a Broader Perspective on Self-Control

This article calls for psychologists to consider carefully what self-control is and how best to promote it. Although it may be tempting to define self-control as the effortful inhibition of impulses, doing so introduces cumbersome conceptual distinctions. Instead, researchers should define self-control more broadly as the general process by which people advance abstract, distal over concrete, proximal motives in judgment, decisions, and behavior. By suggesting that effortful impulse inhibition is only one of many means by which people promote self-control, this approach not only promises greater conceptual clarity and integration of empirical findings but also promotes new directions of research. Adopting a broader conceptualization may thus put us in a better position to understand why people fail at self-control and how best to help them.

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Notes

1. The term *conflict* does not necessarily refer to a subjective experience. The term refers to a structural contradiction—that

one cannot simultaneously achieve one's distal and proximal motivations at the same time. Conscious awareness or experience of conflict need not be defining of self-control. This assertion is supported by research indicating that self-control processes can be initiated in the absence of conscious intent or awareness (see discussion of self-control without conscious deliberation; see also Fishbach, Friedman, & Kruglanski, 2003; Fishbach & Shah, 2006; Fishbach, Zhang, & Trope, 2010; Papiés, Stroebe, & Aarts, 2008). This suggests that conscious awareness of self-control conflicts at the moment of temptation is not a necessary condition for self-control. These assertions parallel research in attitudinal ambivalence, which suggests that structural arrangements can cause evaluative conflicts that are independent of the subjective experience of those conflicts (e.g., Bassili, 1996; Petty & Briñol, 2009; Priester & Petty, 1996). Research shows, for example, that ambivalence caused by structural arrangements of people's attitudes predicts important differences in information search, information processing, and behavior in a manner independent of people's subjectively experienced conflict (e.g., Maio, Bell, & Esses, 1996; Petty & Briñol, 2009). Thus, conflicts need not be subjectively experienced to affect judgment, decisions, and behavior.

2. Although it is tempting to equate concrete construals with greater emotional intensity, abstraction and emotionality should be viewed as independent constructs. Abstract reconstruals are not necessarily less emotional than concrete reconstruals (e.g., Fujita, 2008; Fujita, Trope, & Liberman, 2006, 2010). Reconstruing an insult more abstractly as an affront to one's honor may increase rather than decrease one's emotional arousal (e.g., Cohen, Nisbett, Bowdle, & Schwarz, 1996). Similarly, both love and lust may be understood as emotions, yet they differ in their abstractness (Förster, Özelsel, & Epstude, 2009).
3. Research supports the notion that reconstrual can compensate for deficiencies in effortful impulse inhibition. As noted earlier, prior exertions of self-control render people less capable of effortful impulse inhibition in subsequent tasks, presumably due to decrements in self-regulatory energy (see Baumeister & Heatherton, 1996; Muraven & Baumeister, 2000, for review). More recent findings suggest that abstract reconstruals, however, promote self-control despite people's prior exertions (e.g., Agrawal & Wan, 2009; Schmeichel & Vohs, 2009). Thus, people can use reconstrual to maintain their self-control despite a reduced capacity to engage in effortful impulse inhibition.

References

- Agrawal, N., & Wan, E. W. (2009). Regulating risk or risking regulation? Construal levels and depletion effects in the processing of health messages. *Journal of Consumer Research*, 36, 448–462.
- Ainslie, G. (1975). Specious reward: A behavioral theory of impulsiveness and impulse control. *Psychological Bulletin*, 82, 463–496.
- Alter, A. L., & Oppenheimer, D. M. (2008). Effects of fluency on psychological distance and mental construal (or why New York is a large city, but New York is a civilized jungle). *Psychological Science*, 19, 161–167.

- Armor, D. A., & Taylor, S. E. (2003). The effects of mindset on behavior: Self-regulation in deliberative and implemental frames of mind. *Personality and Social Psychology Bulletin, 29*, 86-95.
- Balcetis, E., & Dunning, D. (2006). See what you want to see: Motivational influences on visual perception. *Journal of Personality and Social Psychology, 91*, 612-625.
- Bargh, J. A. (1989). Conditional automaticity: Varieties of automatic influence in social perception and cognition. In J. S. Uleman & J. A. Bargh (Eds.), *Unintended thought* (pp. 3-51). New York: Guilford.
- Bargh, J. A. (1990). Auto-motives: Preconscious determinants of social interaction. In E. T. Higgins & R. M. Sorrentino (Eds.), *Handbook of motivation and cognition: Foundations of social behavior, Vol. 2* (pp. 93-130). New York: Guilford.
- Bargh, J. A. (1994). The four horsemen of automaticity. In R. S. Wyer & T. K. Srull (Eds.), *Handbook of social cognition* (pp. 1-40). Hillsdale, NJ: Erlbaum.
- Bargh, J. A., & Chartrand, T. L. (1999). The unbearable automaticity of being. *American Psychologist, 54*, 462-479.
- Bargh, J. A., Gollwitzer, P. M., Lee-Chai, A., Barndollar, K., & Trötschel, R. (2001). The automated will: Nonconscious activation and pursuit of behavioral goals. *Journal of Personality and Social Psychology, 81*, 1014-1027.
- Bassili, J. N. (1996). Meta-judgmental versus operative indexes of psychological attributes: The case of measures of attitude strength. *Journal of Personality and Social Psychology, 71*, 637-653.
- Baumeister, R. F. (1984). Choking under pressure: Self-consciousness and paradoxical effects of incentives on skillful performance. *Journal of Personality and Social Psychology, 46*, 610-620.
- Baumeister, R. F., Bratslavsky, E., Muraven, M., & Tice, D. M. (1998). Ego depletion: Is the active self a limited resource? *Journal of Personality and Social Psychology, 74*, 1252-1265.
- Baumeister, R. F. & Heatherton, T. F. (1996). Self regulation failure: An overview. *Psychological Inquiry, 7*, 1-15.
- Beilock, S. L., & Carr, T. H. (2004). From novice to expert performance: Attention, memory, and the control of complex sensorimotor skills. In A. M. Williams, N. J. Hodges, M. A. Scott, & M.L.J. Court (Eds.), *Skill acquisition in sport: Research, theory and practice* (pp. 309-328). New York: Routledge.
- Brandstätter, V., Lengfelder, A., & Gollwitzer, P. M. (2001). Implementation intentions and efficient action initiation. *Journal of Personality and Social Psychology, 81*, 946-960.
- Bruner, J. S. (1957). On perceptual readiness. *Psychological Review, 64*, 123-152.
- Cacioppo, J. T., Priester, J. R., & Berntson, G. G. (1993). Rudimentary determinants of attitudes: II. Arm flexion and extension have differential effects on attitudes. *Journal of Personality and Social Psychology, 65*, 5-17.
- Carver, C. S., & Scheier, M. F. (1982). Control theory: A useful conceptual framework for personality—social, clinical, and health psychology. *Psychological Bulletin, 92*, 111-135.
- Carver, C. S., & Scheier, M. F. (1990). Origins and functions of positive and negative affect: A control-process view. *Psychological Review, 97*, 19-35.
- Chaiken, S., & Trope, Y. (1999). *Dual-process theories in social psychology*. New York: Guilford.
- Chartrand, T. L., & Bargh, J. A. (1996). Automatic activation of impression formation and memorization goals: Non-conscious goal priming reproduces effects of explicit task instructions. *Journal of Personality and Social Psychology, 71*, 464-478.
- Coelho Do Vale, R., Pieters, R., & Zeelenberg, M. (2008). Flying under the radar: Perverse package size effects on consumption self-regulation. *Journal of Consumer Research, 35*, 380-390.
- Cohen, D., Nisbett, R. E., Bowdle, B. F., & Schwarz, N. (1996). Insult, aggression, and the southern culture of honor: An "experimental ethnography." *Journal of Personality and Social Psychology, 70*, 945-960.
- Deci, E. L., & Ryan, R. M. (1985). *Intrinsic motivation and self-determination in human behavior*. New York: Plenum.
- De Houwer, J., Custers, R., & De Clercq, A. (2006). Do smokers have a negative implicit attitude toward smoking? *Cognition & Emotion, 20*, 1274-1284.
- Devine, P. G. (1989). Stereotypes and prejudice: Their automatic and controlled components. *Journal of Personality and Social Psychology, 56*, 5-18.
- Dweck, C. S., & Leggett, E. L. (1988). A social-cognitive approach to motivation and personality. *Psychological Review, 95*, 256-273.
- Eder, A. B., & Rothermund, K. (2008). When do motor behaviors (mis)match affective stimuli? An evaluative coding view of approach and avoidance reactions. *Journal of Experimental Psychology: General, 137*, 262-281.
- Erskine, J.A.K. (2008). Resistance can be futile: Investigating behavioral rebound. *Appetite, 50*, 415-421.
- Erskine, J.A.K., Georgiou, G. J., & Kvavilashvili, L. (2010). I suppress, therefore I smoke: Effects of thought suppression on smoking behavior. *Psychological Science, 21*, 1225-1230.
- Fazio, R. H. (1990). A practical guide to the use of response latency in social psychological research. In C. Hendrick & M. S. Clark (Eds.), *Review of personality and social psychology: Vol. 11. Research methods in personality and social psychology* (pp. 74-97). Newbury Park, CA: Sage.
- Fazio, R. H., & Olson, M. A. (2003). Implicit measures in social cognition research: Their meaning and use. *Annual Review of Psychology, 54*, 297-327.
- Fedoroff, I. C., Polivy, J., & Herman, C. P. (1997). The effect of pre-exposure to food cues on the eating behavior of restrained and unrestrained eaters. *Appetite, 28*, 33-47.
- Fedoroff, I. C., Polivy, J., & Herman, C. P. (2003). The specificity of restrained versus unrestrained eaters' responses to food cues: General desire to eat, or craving for the cued food? *Appetite, 41*, 7-13.

- Fishbach, A., & Dhar, R. (2005). Goals as excuses or guides: The liberating effect of perceived goal progress on choice. *Journal of Consumer Research*, 32, 370–377.
- Fishbach, A., & Dhar, R. (2007). Dynamics of goal-based choice. In C. P. Haugtvedt, P. M. Herr, & F. R. Kardes (Eds.), *Handbook of consumer psychology* (pp. 611–637). New York: Psychology Press.
- Fishbach, A., Dhar, R., & Zhang, Y. (2006). Subgoals as substitutes or complements: The role of goal accessibility. *Journal of Personality and Social Psychology*, 91, 232–242.
- Fishbach, A., Friedman, R. S., & Kruglanski, A. W. (2003). Leading us not into temptation: Momentary allurements elicit overriding goal activation. *Journal of Personality and Social Psychology*, 84, 296–309.
- Fishbach, A., & Shah, J. Y. (2006). Self-control in action: Implicit dispositions toward goals and away from temptations. *Journal of Personality and Social Psychology*, 90, 820–832.
- Fishbach, A., Zhang, Y., & Trope, Y. (2010). Counteractive evaluation: Asymmetric shifts in the implicit value of conflicting motivations. *Journal of Experimental Social Psychology*, 46, 29–38.
- Fiske, S. T., & Taylor, S. E. (2008). *Social cognition: From brains to culture*. New York: McGraw-Hill.
- Förster, J., Liberman, N., & Shapira, O. (2009). Preparing for novel versus familiar events: Shifts in global and local processing. *Journal of Experimental Psychology: General*, 138, 383–399.
- Förster, J., Özelsel, A., & Epstude, K. (2009). How love and lust change people's perception of relationship partners. *Journal of Experimental Social Psychology*, 46, 237–246.
- Fujita, K. (2008). Seeing the forest beyond the trees: A construal level approach to self-control. *Social and Personality Psychology Compass*, 2, 1475–1496.
- Fujita, K., Gollwitzer, P. M., & Oettingen, G. (2007). Mindsets and pre-conscious open-mindedness to incidental information. *Journal of Experimental Social Psychology*, 43, 48–61.
- Fujita, K., & Han, H. A. (2009). Moving beyond deliberative control of impulses: The effect of construal levels on evaluative associations in self-control conflicts. *Psychological Science*, 20, 799–804.
- Fujita, K., & Roberts, J. C. (2010). Promoting prospective self-control through abstraction. *Journal of Experimental Social Psychology*, 46, 1049–1054.
- Fujita, K., & Sasota, J. A. (in press). The effects of construal levels on asymmetric temptation-goal associations. *Social Cognition*.
- Fujita, K., Trope, Y., & Liberman, N. (2006). The role of mental construal in self-control. In D. DeCremer, M. Zeelenberg, & J. K. Murnighan (Eds.), *Social psychology and economics* (pp. 193–211). New York: Sage.
- Fujita, K., Trope, Y., & Liberman, N. (2010). Seeing the big picture: A construal level analysis of self-control. In R. R. Hassin, K. N. Ochsner, & Y. Trope (Eds.), *Self-control in society, mind, and brain* (pp. 408–427). New York: Oxford University Press.
- Fujita, K., Trope, Y., Liberman, N., & Levin-Sagi, M. (2006). Construal levels and self-control. *Journal of Personality and Social Psychology*, 90, 351–367.
- Gagné, F. M., & Lydon, J. E. (2001). Mind-set and close relationships: When bias leads to (in)accurate predictions. *Journal of Personality and Social Psychology*, 81, 85–96.
- Gilbert, D. T. (1991). How mental systems believe. *American Psychologist*, 46, 107–119.
- Gollwitzer, P. M. (1990). Action phases and mind-sets. *Handbook of motivation and cognition: Foundations of social behavior*, Vol. 2 (pp. 53–92). New York: Guilford.
- Gollwitzer, P. M. (1999). Implementation intentions: Strong effects of simple plans. *American Psychologist*, 54, 493–503.
- Gollwitzer, P. M., Fujita, K., & Oettingen, G. (2004). Planning and the implementation of goals. In *Handbook of self-regulation: Research, theory, and applications* (pp. 211–228). New York: Guilford.
- Gollwitzer, P. M., & Sheeran, P. (2006). Implementation intentions and goal achievement: A meta-analysis of effects and processes. In *Advances in experimental social psychology*, Vol. 38 (pp. 69–119). San Diego: Elsevier Academic Press.
- Green, L., Fristoe, N., & Myerson, J. (1994). Temporal discounting and preference reversals in choice between delayed outcomes. *Psychonomic Bulletin & Review*, 1, 383–389.
- Greenwald, A. G., & Banaji, M. R. (1995). Implicit social cognition: Attitudes, self-esteem, and stereotypes. *Psychological Review*, 102, 4–27.
- Greenwald, A. G., McGhee, D. E., & Schwartz, J.L.K. (1998). Measuring individual differences in implicit cognition: The Implicit Association Test. *Journal of Personality and Social Psychology*, 74, 1464–1480.
- Griffin, D. W., & Ross, L. (1991). Subjective construal, social inference, and human misunderstanding. In M. P. Zanna (Ed.), *Advances in experimental social psychology*, Vol. 24 (pp. 319–359). New York: Academic Press.
- Gross, J. (2002). Emotion regulation: Affective, cognitive, and social consequences. *Psychophysiology*, 39, 281–291.
- Hastorf, A. H., & Cantril, H. (1954). They saw a game; a case study. *Journal of Abnormal and Social Psychology*, 49, 129–134.
- Herman, C. P., & Polivy, J. (2004). The self-regulation of eating: Theoretical and practical problems. In *Handbook of self-regulation: Research, theory, and applications* (pp. 492–508). New York: Guilford.
- Higgins, E. T., Kruglanski, A. W., & Pierro, A. (2003). Regulatory mode: Locomotion and assessment as distinct orientations. In M. P. Zanna (Ed.), *Advances in social psychology*, Vol. 35 (pp. 294–345). San Diego, CA: Academic Press.
- Hinson, J. M., Jameson, T. L., & Whitney, P. (2003). Impulsive decision making and working memory. *Journal of Experimental Psychology: Learning, Memory, & Cognition*, 29, 298–306.
- Hoch, S. J., & Loewenstein, G. F. (1991). Time-inconsistent preferences and consumer self-control. *Journal of Consumer Research*, 17, 492–507.

- Hofmann, W., Friese, M., & Strack, F. (2009). Impulse and self-control from a dual-systems perspective. *Perspectives on Psychological Science, 4*, 162–176.
- Hofmann, W., Gschwendner, T., Friese, M., Wiers, R. W., & Schmitt, M. (2008). Working memory capacity and self-regulatory behavior: Toward an individual differences perspective on behavior determination by automatic versus controlled processes. *Journal of Personality and Social Psychology, 95*, 962–977.
- Hofmann, W., Rauch, W., & Gawronski, B. (2007). And deplete us not into temptation: Automatic attitudes, dietary restraint, and self-regulatory resources as determinants of eating behavior. *Journal of Experimental Social Psychology, 43*, 497–504.
- Huijding, J., & de Jong, P. J. (2006). Automatic associations with the sensory aspects of smoking: Positive in habitual smokers but negative in non-smokers. *Addictive Behaviors, 31*, 182–186.
- Hull, J. G., & Slone, L. B. (2004). Alcohol and self-regulation. In *Handbook of self-regulation: Research, theory, and applications* (pp. 466–491). New York: Guilford.
- Job, V., Dweck, C. S., & Walton, G. M. (2010). Ego depletion—is it all in your head? Implicit theories about willpower affect self-regulation. *Psychological Science, 21*, 1686–1693.
- Karpinski, A., & Hilton, J. L. (2001). Attitudes and the Implicit Association Test. *Journal of Personality and Social Psychology, 81*, 774–788.
- Kirby, K. N., & Herrnstein, R. J. (1995). Preference reversals due to myopic discounting of delayed rewards. *Psychological Science, 6*, 83–89.
- Kivetz, R., & Keinan, A. (2006). Repenting hyperopia: An analysis of self-control regrets. *Journal of Consumer Research, 33*, 273–282.
- Kross, E., Ayduk, O., & Mischel, W. (2005). When asking “why” does not hurt: Distinguishing rumination from reflective processing of negative emotions. *Psychological Science, 16*, 709–715.
- Kunda, Z. (1990). The case for motivated reasoning. *Psychological Bulletin, 108*, 480–498.
- Libby, L. K., Shaeffer, E. M., & Eibach, R. P. (2009). Seeing meaning in action: A bidirectional link between visual perspective and action identification level. *Journal of Experimental Psychology: General*.
- Liberman, N., Trope, Y., & Stephan, E. (2007). Psychological distance. In *Social psychology: Handbook of basic principles* (2nd ed., pp. 353–381). New York: Guilford.
- Loewenstein, G. F. (1996). Out of control: Visceral influences on behavior. *Organizational Behavior and Human Decision Processes, 65*, 272–292.
- Maio, G. R., Bell, D. W., & Esses, V. M. (1996). Ambivalence and persuasion: The processing of messages about immigrant groups. *Journal of Experimental Social Psychology, 32*, 513–536.
- Martijn, C., Tenbült, P., Merckelbach, H., Dreezens, E., & de Vries, N. K. (2002). Getting a grip on ourselves: Challenging expectancies about loss of energy after self-control. *Social Cognition, 20*(6), 441–460.
- Metcalf, J., & Mischel, W. (1999). A hot/cool system analysis of delay of gratification: Dynamics of willpower. *Psychological Review, 106*, 3–19.
- Mintz, L. B., & Betz, N. E. (1988). Prevalence and correlates of eating disordered behaviors among undergraduate women. *Journal of Counseling Psychology, 35*, 463–471.
- Mischel, H. N., & Mischel, W. (1983). The development of children’s knowledge of self-control strategies. *Child Development, 54*, 603–619.
- Mischel, W. (1974). Processes in delay of gratification. In L. Berkowitz (Ed.), *Advances in experimental social psychology, Vol. 7* (pp. 249–292). New York: Academic Press.
- Mischel, W., & Moore, B. (1973). Effects of attention to symbolically presented rewards on self-control. *Journal of Personality and Social Psychology, 28*, 172–179.
- Mischel, W., Shoda, Y., & Rodriguez, M. L. (1989). Delay of gratification in children. *Science, 244*, 933–938.
- Moore, B., Mischel, W., & Zeiss, A. (1976). Comparative effects of the reward stimulus and its cognitive representation in voluntary delay. *Journal of Personality and Social Psychology, 34*, 419–424.
- Morsella, E. (2005). The function of phenomenal states: Supramodular interaction theory. *Psychological Review, 112*, 1000–1021.
- Moskowitz, G. B., Gollwitzer, P. M., Wasel, W., & Schaal, B. (1999). Preconscious control of stereotype activation through chronic egalitarian goals. *Journal of Personality and Social Psychology, 77*, 167–184.
- Muraven, M., & Baumeister, R. F. (2000). Self-regulation and depletion of limited resources: Does self-control resemble a muscle? *Psychological Bulletin, 126*, 247–259.
- Muraven, M., Collins, R. L., & Nienhaus, K. (2002). Self-control and alcohol restraint: An initial application of the self-control strength model. *Psychology of Addictive Behaviors, 16*, 113–120.
- Myrseth, K.O.R., & Fishbach, A. (2009). Self-control: A function of knowing when and how to exercise restraint. *Current Directions in Psychological Science, 8*, 247–252.
- Papies, E., Stroebe, W., & Aarts, H. (2007). Pleasure in the mind: Restrained eating and spontaneous hedonic thoughts about food. *Journal of Experimental Social Psychology, 43*, 810–817.
- Papies, E., Stroebe, W., & Aarts, H. (2008). Healthy cognition: Processes of self-regulatory success in restrained eating. *Personality and Social Psychology Bulletin, 34*, 1290–1300.
- Petty, R. E., & Briñol, P. (2009). Implicit ambivalence: A metacognitive approach. In R. E. Petty, R. H. Fazio, & P. Briñol (Eds.), *Attitudes: Insights from the new implicit measures* (pp. 119–161). New York: Psychology Press.
- Petty, R. E., & Cacioppo, J. T. (1986). *Communication and persuasion: Central and peripheral routes to attitude change*. New York: Springer-Verlag.
- Polivy, J., Herman, C. P., & McFarlane, T. (1994). Effects of anxiety on eating: Does palatability moderate distress-induced overeating in dieters? *Journal of Abnormal Psychology, 103*, 505–510.
- Priester, J. R., & Petty, R. E. (1996). The gradual threshold model of ambivalence: Relating the positive and negative bases of

- attitudes to subjective ambivalence. *Journal of Personality and Social Psychology*, 71, 431–449.
- Proffitt, D. R., Stefanucci, J., Banton, T., & Epstein, W. (2003). The role of effort in perceiving distance. *Psychological Science*, 14, 106–112.
- Rachlin, H. (1995). Self-control: Beyond commitment. *Behavior and Brain Sciences*, 18, 109–159.
- Rachlin, H. (2000). *The science of self-control*. Cambridge, MA: Harvard University Press.
- Rachlin, H., & Green, L. (1972). Commitment, choice and self-control. *Journal of the Experimental Analysis of Behavior*, 17, 15–22.
- Read, D., Loewenstein, G., & Kalyanaraman, S. (1999). Mixing virtue and vice: Combining the immediacy effect and the diversification heuristic. *Journal of Behavioral Decision-Making*, 12, 257–273.
- Rodriguez, M. L., Mischel, W., & Shoda, Y. (1989). Cognitive person variables in the delay of gratification of older children at-risk. *Journal of Personality and Social Psychology*, 57, 358–367.
- Rutter, M. (1987). Psychosocial resilience and protective mechanisms. *American Journal of Orthopsychiatry*, 57, 316–331.
- Sayette, M. A., & Hufford, M. R. (1997). Effects of smoking urge on generation of smoking-related information. *Journal of Applied Social Psychology*, 27, 1395–1405.
- Sayette, M. A., Martin, C. S., Wertz, J. M., Shiffman, S., & Perrott, M. A. (2001). A multi-dimensional analysis of cue-elicited craving in heavy smokers and tobacco chippers. *Addiction*, 96, 1419–1432.
- Schelling, T. C. (1978). Egonomics, or the art of self-management. *The American Economic Review*, 68, 290–294.
- Schmeichel, B. J., & Vohs, K. (2009). Self-affirmation and self-control: Affirming core values counteracts ego depletion. *Journal of Personality and Social Psychology*, 96, 770–782.
- Sherman, S. J., Rose, J. S., Koch, K., Presson, C. C., & Chassin, L. (2003). Implicit and explicit attitudes toward cigarette smoking: The effects of context and motivation. *Journal of Social & Clinical Psychology*, 22, 13–39.
- Shiffman, S., & Balabanis, M. (1995). Associations between alcohol and tobacco. In J. B. Fertig & J. P. Allen (Eds.), *Alcohol and tobacco: From basic science to clinical practice* (National Institute on Alcohol Abuse and Alcoholism Research Monograph 30, pp. 17–36). Bethesda, MD: National Institutes of Health.
- Shiffrin, R. M., & Schneider, W. (1977). Controlled and automatic human information processing: II. Perceptual learning, automatic attending, and a general theory. *Psychological Review*, 84, 127–190.
- Shiv, B., & Fedorikhin, A. (1999). Heart and mind in conflict: The interplay of affect and cognition in consumer decision making. *Journal of Consumer Research*, 26, 278–292.
- Smith, E. R., & DeCoster, J. (2000). Dual-process models in social and cognitive psychology: Conceptual integration and links to underlying memory systems. *Personality and Social Psychology Review*, 4, 108–131.
- Strack, S., & Deutsch, R. (2004). Reflective and impulsive determinants of social behavior. *Personality and Social Psychology Review*, 8, 220–247.
- Strotz, R. H. (1955). Myopia and inconsistency in dynamic utility maximization. *The Review of Economic Studies*, 23, 165–180.
- Taylor, S. E., & Gollwitzer, P. M. (1995). Effects of mindset on positive illusions. *Journal of Personality and Social Psychology*, 69, 213–226.
- Thaler, R. H., & Shefrin, H. M. (1981). An economic theory of self-control. *Journal of Political Economy*, 89, 392.
- Trope, Y., & Fishbach, A. (2000). Counteractive self-control in overcoming temptation. *Journal of Personality and Social Psychology*, 79, 493–506.
- Trope, Y., & Fishbach, A. (2005). Going beyond the motivation given: Self-control and situational control over behavior. In *The new unconscious* (pp. 537–563). New York: Oxford University Press.
- Trope, Y., & Liberman, N. (2003). Temporal construal. *Psychological Review*, 110, 403–421.
- Trope, Y., & Liberman, N. (2010). Construal-level theory of psychological distance. *Psychological Review*, 117, 440–463.
- Trope, Y., & Neter, E. (1994). Reconciling competing motives in self-evaluation: The role of self-control in feedback seeking. *Journal of Personality and Social Psychology*, 66, 646–657.
- Vallacher, R. R., & Wegner, D. M. (1985). *A theory of action identification*. Hillsdale, NJ: Erlbaum.
- Vallacher, R. R., & Wegner, D. M. (1987). What do people think they're doing? Action identification and human behavior. *Psychological Review*, 94, 3–15.
- Vohs, K. D., & Heatherton, T. F. (2000). Self-regulatory failure: A resource-depletion approach. *Psychological Science*, 11, 249–254.
- von Hippel, W. (2007). Aging, executive functioning, and social control. *Current Directions in Psychological Science*, 16, 240–244.
- Ward, A., & Mann, T. (2000). Don't mind if I do: Disinhibited eating under cognitive load. *Journal of Personality and Social Psychology*, 78, 753–763.
- Waters, A. J., Carter, B. L., Robinson, J. D., Wetter, D. W., Lam, C. Y., & Cinciripini, P. M. (2007). Implicit attitudes to smoking are associated with craving and dependence. *Drug and Alcohol Dependence*, 91, 178–186.
- Waters, A. J., Shiffman, S., Sayette, M. A., Paty, J. A., Gwaltney, C. J., & Balabanis, M. H. (2003). Attentional bias predicts outcome in smoking cessation. *Health Psychology*, 22, 378–387.
- Wegner, D. M. (1994). Ironic processes of mental control. *Psychological Review*, 101, 34–52.
- Wertenbroch, K. (1998). Consumption self-control by rationing purchase quantities of virtue and vice. *Marketing Science*, 17, 317.
- Whitney, P., Hinson, J. M., & Jameson, T. L. (2006). From executive control to self-control: Predicting problem drinking among college students. *Applied Cognitive Psychology*, 20, 823–835.
- Wiers, R. W., & Stacy, A. W. (2006). Implicit cognition and addiction. *Current Directions in Psychological Science*, 15, 292–296.
- Zhang, Y., Fishbach, A., & Dhar, R. (2007). When thinking beats doing: The role of optimistic expectations in goal-based choice. *Journal of Consumer Research*, 34, 567–578.