

Understanding Self-Control as a Problem of Regulatory Scope

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Although the focus of research for decades, there is a surprising lack of consensus on what is (and what is not) self-control. We review some of the most prominent theoretical models of self-control, including those that highlight conflicts between smaller-sooner versus larger-later rewards, “hot” emotions versus “cool” cognitions, and efficient automatic versus resource-intensive controlled processes. After discussing some of their shortcomings, we propose an alternative approach based on tenets of construal level theory (Trope et al., 2021) that integrates these disparate models while also providing novel insights. Specifically, we model self-control as a problem of regulatory scope—the range of considerations one accounts for in any decision or behavior. Self-control conflicts occur when the pursuit of specific local opportunities threatens the ability to address motivational priorities that span a broader array of time, places, individuals, and possibilities. Whereas a more contractive consideration of relevant concerns may prompt indulgence in temptation, a more expansive consideration of concerns should not only help people identify the self-control conflict but also successfully resolve it. We review empirical evidence that supports this new framework and discuss implications and new directions. This regulatory framework not only clarifies what is and what is not self-control but also provides new insights that can be leveraged to enhance self-control in all its various forms.

Keywords: construal level theory, regulatory scope, self-control, intertemporal choice, social dilemmas

People are frequently tempted to make decisions and act in a manner that undermines the attainment of more valued outcomes. For example, smokers continue to smoke in contradiction to their cessation intentions, dieters indulge in their favorite comfort foods despite their weight-loss concerns, and consumers spend profligately in opposition to their savings goals. These self-control failures are implicated in some of the most pressing societal problems, including substance abuse, obesity, violence, and poor financial decision making. On the other hand, self-control success is associated with numerous positive outcomes, including academic achievement, financial success, stronger interpersonal relationships, and enhanced

physical and mental health (e.g., Duckworth & Seligman, 2005; W. Mischel et al., 1989; Moffitt et al., 2011; Tangney et al., 2004). Given this, researchers across numerous scientific disciplines—including psychology, neuroscience, economics, marketing, management, and philosophy—have attempted to understand who, when, and why some succeed whereas others fail in their self-control efforts.

Despite this concerted multidisciplinary effort, progress has been limited by the lack of unifying theoretical models that meaningfully integrate these disparate programs of research. There is a surprising lack of consensus even on the most basic and fundamental question of how to define self-control (e.g., Ainslie, 1975, 2021; Berkman, Hutcherson, et al., 2017; Berkman, Livingston, & Kahn, 2017; Duckworth et al., 2016; Fujita, 2011; Rachlin, 1995). It is unclear how research moves forward when researchers debate what is or what is not an instance of the topic of inquiry.

The present work represents a preliminary step in addressing this situation. We briefly survey popular theoretical models of self-control and discuss their shortcomings. We then propose a novel approach based on construal level theory (Liberman & Trope, 2008; Trope & Liberman, 2010) that seeks to integrate these disparate models while also providing new insight. Specifically, we model self-control as a problem of regulatory scope—the range of considerations one accounts for in any decision or behavior (Trope et al., 2021). Self-control conflicts occur when the pursuit of specific local opportunities threatens the ability to address motivational priorities that span a broader array of time, places, individuals, and possibilities. Whereas a more contractive consideration of relevant concerns may prompt indulgence in temptation, a more expansive consideration of concerns should not only help people identify the self-control conflict but also successfully resolve it. We review emerging empirical evidence that supports this new framework and

This article was published Online First September 12, 2024.

Julian G. C. Elliott served as action editor.

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Support for the preparation of this article was provided in part by grants from the National Science Foundation (Grant 1626733) and the John Templeton Foundation (Grant: 15462; Subaward: SC18) Philosophy and Science of Self-Control Project to Kentaro Fujita and by a United States–Israel Binational Science Foundation Grant (No. 2020120) to Nira Liberman and Yaacov Trope.

Kentaro Fujita played a lead role in writing—original draft and writing—review and editing and an equal role in conceptualization. Yaacov Trope played a supporting role in writing—review and editing and an equal role in conceptualization. Nira Liberman played a supporting role in writing—review and editing and an equal role in conceptualization.

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then discuss implications and new directions. The aim is to provide a theoretical and conceptual scaffold with which to advance and deepen our understanding of self-control.

Self-Control

Any discussion of self-control must first provide a clear definition of what is an instance of the phenomenon. We first describe the basic features of self-control that a theory must address. First, self-control entails conflict between competing motivations. A dieter aims to lose weight but also wants to eat this piece of cake. A smoker wants to quit smoking but would also like to have a nicotine fix. An impulsive consumer is worried about saving for retirement but would also really like to have this new pair of shoes. In short, a theory of self-control must describe a conflict that entails wanting X but also wanting something that is not compatible with X.

Second, one of these choice options must be more appropriate or better than the other. That is, one choice option represents the temptation—the option to be avoided as it represents self-control failure, whereas the other represents the “right choice”—the option that constitutes self-control success. It is this asymmetry in the choice options—where one option is deemed superior to the other—that distinguishes self-control from other choice conflicts.¹

Third, a theory of self-control must explain why, despite the clarity as to which choice option is the “right choice,” people have such difficulty resolving these conflicts in the moment of choice. That is, why do dieters struggle to stick to their weight-loss goals in the face of food temptations? Why do smokers continue to smoke despite awareness of the serious health risks? Why do consumers continue to spend profligately, contrary to their intentions to save for retirement? A theory of self-control must explain why people opt for tempting alternatives despite knowledge of their inferiority.

We might also observe that the term self-control can refer both to outcomes (i.e., did individuals successfully overcome temptation?) and the processes that gave rise to these outcomes (i.e., how did the individuals overcome temptation?). In this article, we use the term self-control to refer to the former and the terms self-control mechanism or self-control tactic² to refer to the latter. Several recent articles review and provide taxonomies for the various mechanisms and tactics to enhance their self-control (e.g., Duckworth et al., 2014, 2016; Fujita et al., 2020; Gillebaart & de Ridder, 2015; Gross & Barrett, 2011; W. Mischel, 2014). These articles provide an important starting point from which we can address the more basic question of what constitutes a self-control conflict.

Although some in the literature use the terms self-control and self-regulation interchangeably, we argue that they are distinct. The term self-regulation is typically used to describe the broad collection of processes by which people monitor and modulate their thoughts, feelings, and behavior to secure valued ends (e.g., Carver & Scheier, 1982; Fujita, 2011; Gollwitzer, 1990; Mann et al., 2013). Self-control is an instance of self-regulation, but not all self-regulation entails self-control. Consider, for example, a basketball player who must shoot free throws to win a game. Successfully shooting free throws requires skillful coordination of thoughts, feelings, and behavior. Although this act requires self-regulation, it does not constitute self-control. There is no motivational conflict: The player wants to successfully shoot the free throws and has no countervailing desire to miss. The absence of conflict renders this example an act of self-regulation but not of self-control. These and many other examples highlight

the importance of not confusing self-control with self-regulation: Solutions to one type of self-regulation challenge may not solve others (e.g., Bonanno & Burton, 2013; Gollwitzer, 1990; Scholer et al., 2018).

Temporal Discounting Tradition

Self-control has historically been understood as a problem of intertemporal choice. Specifically, researchers have suggested that self-control decisions entail trade-offs between the magnitude and timing of rewards (e.g., Ainslie, 1975; Hoch & Loewenstein, 1991; Kirby & Herrnstein, 1995; W. Mischel et al., 1989; Rachlin, 1995; Rachlin & Green, 1972; Schelling, 1978; Strotz, 1955; Thaler & Shefrin, 1981). People want larger over smaller rewards, but they would also prefer to receive them sooner rather than later. Normative theory proposes that people should not always choose the larger amount: People should discount the value of future rewards, as \$100 a year from now does not have the same value as \$100 today. In contrast to normative theory, however, research suggests that people's discount rates are inconsistent over time: People discount the value of a reward much more steeply when delays are more immediate versus removed in time. Because of this “hyperbolic” discounting, although people often prefer larger-delayed over smaller-sooner rewards when both options are delayed in time (e.g., \$50 1 year from now vs. \$100 2 years from now), their preferences reverse as the choice options become temporally closer (e.g., \$50 now vs. \$100 a year from now)—to their economic disadvantage. Thus, the inconsistent discount rate over time tempts people into making decisions that they might not otherwise have made.

Self-control in this context is understood as choosing larger-delayed over smaller-immediate outcomes. This might entail, for example, precommitment—the tactic of binding one's decisions to the larger-later over smaller-sooner option while the outcomes of both options are still temporally remote (e.g., Ainslie, 1975; Ariely & Wertenbroch, 2002; Rogers & Bazerman, 2008; Sheldon & Fishbach, 2011; Thaler & Shefrin, 1981; Trope & Fishbach, 2000; Wertenbroch, 1998). The most famous example of precommitment may be Odysseus, who—knowing he would be tempted by the allure of the Sirens' song—had his sailors stop their ears with wax and tie him to the mast of his ship to render him powerless to act on his impulses. Even those who are not mythical heroes engage in precommitment. People, for example, are willing to pay higher cancellation fees to offset the temptation to back out of appointments when they anticipate painful yet important diagnostic medical tests (Trope & Fishbach, 2000). When given the opportunity, students will self-impose earlier submission deadlines and accept

¹ Different approaches to self-control—from religious doctrines to modern decision-making and economic theories—have suggested different answers to the question of what makes an option “superior.” As we later describe, our approach offers a distinct answer to this question.

² The term “strategy” rather than “tactic” is commonly used in the literature to describe the various methods people use to combat temptation. Recent research, however, suggests that people also have preferences for not only have to combat temptations in the moment but also for patterns of preferences over repeated decisions (e.g., abstinence vs. moderation; Le et al., 2024). The term “strategy” may be more appropriate for describing these higher order approaches, whereas the term tactic may be more appropriate for describing any specific method used to combat a particular temptation in a given context.

punishments for missing those deadlines to combat the temptation to procrastinate (Ariely & Wertenbroch, 2002). These and other precommitment techniques allow people to counteract the tendency to overvalue smaller-sooner outcomes in the present moment and be more likely to secure larger-delayed outcomes.

The temporal discounting tradition, however, falls short as an integrative model in that it offers little insight into why people hyperbolically discount the value of future rewards. That is, it provides very little theoretical scaffolding for understanding the psychological mechanisms of self-control. Although steep discount rates may predispose individuals to impulsive decisions, it is unclear what causes these steeper rates. The discounting tradition is therefore generally silent to the psychological mechanisms for situational variation, individual differences, and developmental trajectories of self-control—questions that many seek to understand.

Some might also suggest that the temporal discounting tradition fails to capture all instances of self-control (Fujita et al., 2006; Rachlin, 1995; see also Kruglanski & Köpetz, 2010). Consider, for example, the commons dilemma (e.g., Hardin, 1968). In these social dilemmas, a group of individuals needs to ration the use of a common resource (e.g., limited electricity available in an electric grid). Each individual, however, may be tempted to use more than their fair allotment, particularly when monitoring of consumption is limited or absent. If everyone acts selfishly and uses more than their fair share, the common resource may collapse, instantly becoming unavailable to all (e.g., failure of the electric grid and immediate blackout). Although these social dilemma decisions are often described and experienced as self-control conflicts (e.g., Baker & Rachlin, 2001; Kocher et al., 2017; Read, 2001; Van Lange et al., 2013), they do not necessarily involve intertemporal choices (i.e., selfish behavior may lead to immediate denial of the resource for all).³ Moreover, factors that enhance self-control also appear to enhance successful resolution of these conflicts (e.g., Sanabria et al., 2003; Sheldon & Fishbach, 2011, 2015). Thus, one might argue that the scope of the temporal discounting tradition is more narrow than one might want from an integrative theory of self-control.

Divided-Mind Accounts

Models focused on psychological mechanism tend to stress “divided-mind” or dual-process/dual-system dynamics. These models describe self-control as reflecting different elements of the mind competing to determine people’s decisions and actions. Although they differ in what characterizes these competing elements, a common feature is the assertion that, whereas one element of the mind presses for indulgence, the other presses for restraint. Any factor that shifts the balance between these elements to favor indulgence versus restraint promotes the likelihood of self-control failure. In broad brush strokes, these models may be classified as belonging to one of two theoretical traditions: the hot versus cool and automatic versus controlled traditions.

Hot Versus Cool Tradition

The hot versus cool tradition has intellectual roots in Aristotle’s classic distinction between passion and reason and proposes that people can process information in an appetitive, emotional, “hot” manner or in a dispassionate, cognitive, “cool” manner (e.g., Loewenstein, 1988; Metcalfe & Mischel, 1999; W. Mischel

et al., 1989; Nordgren et al., 2007). Self-control conflicts emerge when hot and cool processing suggest opposing courses of action. Although cognitive processing of choice options might lead one to forgo temptation, these “cool” considerations are preempted by emotional processes that are more sensitive to appetitive cues in the environment and press for indulgence. This tradition thus suggests that “hot” responses undermine self-control and that successful self-control requires “cooling” these affective responses and ensuring that decision-making is directed instead by cognitive processing.

The most iconic research within the hot versus cool tradition may be the work by Mischel and colleagues on delay of gratification among young children (Metcalfe & Mischel, 1999; W. Mischel et al., 1989). In these experiments, children were presented with the option of consuming one marshmallow immediately or receiving two if they could wait out an unknown delay—usually 15 min. Experimental manipulations that directed children to attend to the appetitive “hot” features led to a poorer delay of gratification, whereas those that directed children to reconstrue the marshmallows in a more nonappetitive “cool” manner were able to wait longer. For example, in one study (Moore et al., 1976), children who were instructed to reconstrue a rewarding temptation as a picture—that is, by mentally drawing a picture frame around it—delayed gratification longer than those who construed the temptation as they normally would. When experimenters presented the rewards as pictures and asked children to think of them as if they were real, delay of gratification suffered as it did when children were presented with the actual reward without reconstrual instructions. This and other research in both children and adults have spurred the development of self-control models that leverage theories of emotion regulation, highlighting the importance that many researchers place on the control of emotional “hot” responses as a core component of self-control (e.g., Duckworth et al., 2014, 2016; Kross & Ochsner, 2010).

Automatic Versus Controlled Tradition

Although there are variations with important nuanced differences, automatic versus controlled models of self-control generally distinguish processing of stimuli that occurs spontaneously and efficiently versus processing that must be initiated intentionally and is resource-intensive (e.g., Baumeister & Heatherton, 1996; Heatherton & Wagner, 2011; Hofmann et al., 2009; Inzlicht & Schmeichel, 2012; Muraven & Baumeister, 2000; Redish et al., 2008; Wiers & Stacy, 2006). Although people may intend to act in a certain way in the presence of a reward, under certain conditions, that reward may automatically trigger thoughts, feelings, and behavior that press for indulgence. Self-control requires inhibiting these impulses upon detection—a reactive process presumed to require sufficient time as well as motivation and ability.

Supporting empirical evidence indicates that salient reward cues can automatically initiate processes that predispose people to

³ One could reinterpret some social dilemmas, such as the commons dilemma, in intertemporal terms: As the individual is often part of the collective, acting in line with the collective may benefit one’s self-interests over the long term relative to acting selfishly in the moment. The temporal aspect, however, is not the defining feature of these conflicts. One can identify social dilemmas that have no temporal aspect. Indeed, we later review a series of studies by Stillman et al. (2018) that provide a clear empirical example that cannot be reduced to intertemporal choice.

undesired responses. For example, spontaneous neural reactivity to food cues in reward processing regions of the brain predicts overindulgence in daily life as assessed by ecological momentary assessments (Lopez et al., 2014; see also Wagner, 2017). Critically, the ability to inhibit these automatic responses via controlled responses appears to play a key role in self-control success; any liabilities in the ability to counter automatic responses with controlled processing negatively impair self-control. For example, people are more likely to choose chocolate cake over fruit salad as a snack when under cognitive load (e.g., rehearsing a 7-digit number; e.g., Shiv & Fedorikhin, 1999; see also Ward & Mann, 2000). Dieters whose strong automatic cue-activated responses are balanced (vs. not) by equally efficacious controlled inhibitory abilities make less impulsive daily food choices (e.g., Lopez et al., 2017) and evidence lower body mass index after a year's duration (e.g., Nederkoom et al., 2010).

How Divided-Mind Models Redefine What Self-Control Is

Note that as many divided-mind models define successful self-control in terms of process rather than as outcomes, what constitutes a self-control conflict is fundamentally different from the traditional smaller-sooner versus larger-later choice dilemma (see also Fujita, 2011). In hot versus cool models, self-control is defined as the “cooling” of emotional responses. In automatic versus controlled models, it is defined as a reactive process that requires the detection and subsequent inhibition of undesired responses.⁴ This shift in defining self-control in terms of process rather than outcomes has important implications for what does and does not constitute instances of self-control. That is, by defining self-control in terms of psychological mechanism, what constitutes self-control in one tradition may not constitute self-control in another.

Consider, for example, cognitive control tasks such as the Stroop task (Stroop, 1935), in which participants must identify the color of the font in which color words are presented. To do so, they must inhibit the automatic tendency to read the word (“GREEN”) and instead redirect attention to the color of the font (“RED”). As there is no explicit intertemporal choice component, it is unclear whether a discounting theorist would view this task as requiring self-control. It is also unclear whether this task includes an affective component (i.e., some emotional response to the word “GREEN” written in red font), which may lead hot versus cool theorists to not consider this task as one assessing self-control. Yet, as this task involves the effortful inhibition of an automatic process, many theorists who define self-control in terms of this process would identify this task as “paradigmatic” instance of self-control (e.g., Brass & Haggard, 2007; Hagger et al., 2010; Milyavskaya & Inzlicht, 2017; Muraven, 2010; Schmeichel et al., 2011; Tabibnia et al., 2011; Webb & Sheeran, 2003; Wallace & Baumeister, 2002).

Similarly, there may be instances of self-control from the intertemporal choice perspective that may not be viewed as such from the divided-mind perspective. If one defines self-control in terms of reactive inhibition, one must demonstrate that inhibition itself (rather than some alternative mechanisms) produced a given outcome. Consider the decision to opt for a larger-later reward over a smaller-sooner reward. Given that one could have used a proactive strategy to come to this decision (e.g., precommitment, reconstrual), proponents of the automatic versus control approach cannot conclude that this is self-control without evidence of effortful

inhibition. More generally, if one defines self-control by a particular process, given that there are multiple processes that can give rise to the same outcome, observing any outcome is insufficient for drawing conclusions about self-control—one must also observe evidence of the process that produced the outcome. Thus, although one may use divided-mind models to explain intertemporal choice, one should be mindful that these models do not always agree on what is and what is not an instance of self-control.

Challenges to Divided-Mind Accounts

Empirically, although divided-mind accounts are intuitively appealing models that have generated extensive literatures, the findings have not been as robust as one would assume (see Berkman et al., 2017; Fujita, 2011). For example, a recent large-scale and systematic study using state-of-the-art assessment techniques failed to find any association between cognitive inhibition ability and self-control outcomes (Eisenberg et al., 2019; see also Saunders et al., 2018)—a prediction that is core to many automatic versus controlled models. Proponents have more recently attempted to use neuroscientific methods, particularly functional magnetic resonance imaging, to bolster their claims of competing elements of the mind (e.g., Heatherton & Wagner, 2011; McClure et al., 2004). Although individual empirical observations appear to suggest that there may be distinct neural networks associated with impulsiveness and restraint, systematic integrative reviews of these findings fail to distinguish these two competing networks reliably (e.g., Kelley et al., 2015)—a problem for many dual-systems accounts.

The relationship between automatic versus controlled processes—and emotions versus cognitions—and self-control outcomes is more nuanced than divided-mind models traditionally suggest. For example, rather than uniformly undermining self-control, automatic processes play a critical role in the successful prioritization of goals over temptations (e.g., Fishbach et al., 2003, 2010; Fishbach & Shah, 2006; Kroese et al., 2009; Papies et al., 2008). Similarly, although emotions are often blamed for self-control failures, they also play a key role in success. Self-conscious emotions such as guilt (e.g., Giner-Sorolla, 2001; Kivetz & Zheng, 2006; Zemack-Rugar et al., 2007), pride (e.g., Carver et al., 2010; Dorfman et al., 2014; Hofmann & Fisher, 2012; Shimon et al., 2019; Wilcox et al., 2011; Williams & DeSteno, 2008), and gratitude (DeSteno et al., 2014; Dickens & DeSteno, 2016) motivate people to forgo immediate temptations in favor of broader goals. Moreover, contrary to the expectations of many divided-mind models, some of the most effective interventions for combating immediate temptations are those that leverage habits and “if-then” plans that do not engage the effortful and contemplative processes presumed to be necessary for self-control (e.g., Adriaanse et al., 2014; de Ridder et al., 2012; Galla & Duckworth, 2015). Collectively, these findings suggest that distinctions between automatic and controlled—and hot versus cool—processes do not map directly onto self-control success versus failure as directly as one might expect.

Perhaps more critically, beyond empirical shortcomings, divided-mind accounts suffer from conceptual problems. They may be

⁴ In principle, one could develop a dual-process/dual-systems model that highlights some alternative controlled process that is not inhibition as the key to self-control (e.g., reasoning, working memory capacity). We know of no theoretical model that addresses this possibility.

critiqued on the same dimensions as other dual-system accounts in psychology (e.g., Gigerenzer & Regier, 1996; Keren & Schul, 2009; Kruglanski & Gigerenzer, 2011). A broad critique of this general class of models is beyond the scope of this article (for that, see Keren & Schul, 2009); we focus instead on a specific conceptual challenge that arises within the context of self-control. As noted earlier, a theory of self-control must account for motivational conflict and explain why one motivation should be viewed as superior or higher in priority than the other. Without additional assumptions, divided-mind models struggle to explain the latter. When the mind is partitioned, why one should ascribe one versus the other as reflecting a person's higher priority motivational concerns is unclear. Consider, for example, dieters who earnestly report that they are committed to losing weight yet indulge in every food temptation that is presented to them. One might interpret this behavior as suggesting that, although well-intentioned, these dieters exhibit persistent self-control failures. Alternatively, perhaps these dieters have poor self-insight and mistakenly believe that they are committed to losing weight; their true goal may be to eat tasty (yet fattening) foods—a goal that they have been remarkably successful at pursuing (see also Köpetz et al., 2013; Köpetz & Orehek, 2015). Divided-mind models take for granted that one element of the mind represents people's "true intentions," yet the basis and justification for this assumption are unclear *a priori*.

Summary

A basic encapsulation of existing theories of self-control can be found in Table 1. Briefly, these theories model self-control as a problem of intertemporal choice (temporal discounting) or as conflicting elements of the mind (hot vs. cool, automatic vs. controlled). The former highlights individual differences in how people discount rewards over time as an explanation for self-control success versus failure; the latter highlights the relative strength of indulgent versus restraining psychological processes. Although these models have guided research for decades, they suffer from challenges that limit their usefulness as integrative theoretical frameworks. The temporal discounting tradition provides clear answers to the three questions that all self-control theories must explain (what is the nature of the conflict, why is one option the "right choice," and why is it hard for people to choose this option?) but offers little in the way of psychological mechanisms. By contrast, divided-mind models excel at describing mechanisms but struggle to articulate how they account for the basic features of self-control (e.g., why one option should be considered the "right choice").

We also noted that these models do not always agree on what is and what is not an instance of self-control. In this article, we adopt an inclusive approach. That is, to address the shortcomings of previous models and to present a model of self-control that incorporates all potential instances of self-control into a single, parsimonious model, we introduce a novel theoretical framework based on the concept of regulatory scope.

Self-Control as a Problem of Regulatory Scope

Regulatory scope refers to the range of considerations one accounts for in any decision or behavior (Trope et al., 2021). Contractive scope narrows the breadth of concerns to those closest to "me in the here and now." This limited, more focused perspective allows people to be attuned and responsive to their immediate environments, helping

them capitalize on opportunities and resources that are afforded by current local conditions. By contrast, when one expands regulatory scope, one accounts for a greater range of relevant concerns. This expansive set of concerns may include those highlighted by contractive scope but also include those that entail some change in time, space, people, and possibilities—that is, those that span greater psychological distance.⁵ This broader, more global perspective allows people to transcend the idiosyncratic demands of a particular context, making them more responsive to alternative circumstances and opportunities. In other words, whereas contracting scope involves addressing a more singular and focalized set of immediate concerns, expanding one's scope involves integrating those concerns with a greater range of more heterogeneous concerns that may transcend the realities of "me" in the "here-and-now."

Note the inherent regulatory trade-offs associated with contractive and expansive scope. Contractive scope helps people exploit local conditions but may lead them to overlook alternative opportunities or circumstances that lie beyond its narrow purview (i.e., it may lead to overspecialization). Expansive scope helps people explore and prepare for circumstances that differ from current experience but may render them less capable of taking full advantage of any particular context (i.e., it may lead to overgeneralization). Balancing these trade-offs by adaptively modulating scope is a key self-regulatory challenge (Trope et al., 2021).

Scope and Self-Control

We propose that self-control conflicts are a special type of decision conflict in which one option addresses more contractive concerns, whereas the other addresses more expansive concerns. Critically, the two-choice options are characterized by interdependence—the ability to address the expansive concerns is conditional on not responding to contractive concerns. For example, opting to eat cake over carrots for a snack may appear highly attractive and reasonable to dieters who are narrowly focused on addressing their immediate hunger. Doing so, however, would undermine their efforts to secure the broader benefits of weight loss: for example, better health, greater social confidence, enhanced well-being, and improved self-efficacy. Similarly, momentary embarrassment may prompt a patient to avoid discussing a sensitive medical issue with their doctor. Although this avoidance may appear sensible in light of one's current feelings, it prevents one from attaining the broader benefits of directly addressing one's health. Self-control success requires responsiveness to expansive considerations, which is conditional on overriding contractive concerns that are apparent in the reality of "me" in the "here-and-now."

Research suggests that successful self-control involves at least two distinct stages (Myrseth & Fishbach, 2009)—identification and resolution. People must first recognize that a decision represents a self-control dilemma; that is, they must identify the interdependencies between the salient contractive concerns in the here-and-now and the expansive concerns that are put at risk. Research

⁵ Expanding regulatory scope may entail an increase in both the number and variance of concerns that people consider. What is critical, however, is the change in variance rather than the number. Increasing the variance of concerns considered while holding constant the number is likely to produce a greater change in evaluation, decision, and behavior than varying the number while holding the variance constant. Nevertheless, we note that, in most cases, the number and variance of concerns considered are likely to covary.

Table 1

Summary of the Broad Classes of Self-Control Models, How They Define Self-Control, and the Key Mechanisms They Posit Are Responsible for the Successful Resolution of Self-Control Conflict

Model	Nature of conflict	Key mechanism
Temporal discounting	Smaller-sooner versus larger-later rewards	Individual-level discount rates, use of precommitment devices
Hot versus cool	Affective versus cognitive processing of rewards	Psychological and behavioral tactics of cooling hot responses
Automatic versus controlled	Spontaneous and efficient impulses versus intentional and resource-intensive responses to rewards	Motivation and cognitive capacity to inhibit initial impulses
Regulatory scope	Rewards that address contractive versus expansive concerns	Abstraction

suggests that many may struggle with self-control because they do not appreciate in the moment of choice that there is a conflict—that is, they fail to recognize the interdependencies of the choice options (e.g., Coelho do Vale et al., 2008; Hur et al., 2015; Magen et al., 2008). After identifying the conflict, people must then marshal tactics to help them resolve it successfully in favor of the broader, global concerns (e.g., Duckworth et al., 2014, 2016; Fujita, 2011; Fujita et al., 2020). Expanding regulatory scope might enhance self-control at both of these stages. First, expanding regulatory scope should facilitate identification by sensitizing people to concerns that may not be readily salient in the moment—allowing them to recognize interdependencies between contractive and expansive rewards (e.g., Sheldon & Fishbach, 2015). Second, expanding regulatory scope may facilitate the resolution of these conflicts by changing the evaluation of present rewards. That is, once one understands that expansive rewards are conditional on not responding to contractive rewards, the value of the latter may diminish—thereby reducing the degree of conflict of the two options and facilitating the resolution of the conflict in favor of the former.⁶

The regulatory scope approach suggests that self-control in many ways is about the generation and implementation of behavioral policies rather than engaging in ad hoc behavior “on the spot.” Good policies are principled guides that provide clarity as to what actions are desirable across a broad range of contexts. For example, a hotel chain’s nonsmoking policy applies not only to whether an individual guest might smoke a cigar in their room but also to the multitude of guests who might engage in any smoking behavior at any one of the hotel’s franchise locations. The value of policies is that they ensure consistency of behavior across a wide spectrum of contexts across time, places, people, and possibilities. Just as organizations and institutions might generate policies to regulate the behavior of their constituent members, people themselves may generate policies to regulate their own behavior across different circumstances. Dieters, for example, might have a policy to refuse all desserts except those served at special functions, like birthdays and weddings. Expanding regulatory scope is a necessary condition for generating and implementing one’s behavioral policies when confronted with temptation. Contracting rather than expanding one’s scope, however, may lead one not to recognize the importance of having a policy and to fail to implement any policies one might have that are relevant in the specific context.

The analogy of expanding regulatory scope as something akin to generating and implementing policies also has an important implication for the notion of effort. Our model is generally silent as to whether expanding versus contracting regulatory scope is an effortful,

resource-intensive process. The initial generation of any policy may require work. Once generated, however, one need not reconsider all of the broader concerns relevant to any single decision; one can instead just recall the policy—thus, having a policy at times can reduce cognitive effort. In the same way, expanding versus contracting regulatory scope similarly may not necessarily entail more versus less effort.

The Role of Abstraction in Modulating Regulatory Scope

Expanding regulatory scope requires addressing variability: As one expands the range of things to account for, one must deal with greater diversity and heterogeneity. In our prior work (Trope et al., 2021), we proposed that cognitive abstraction is an important mental tool by which people modulate regulatory scope. Abstraction entails the treatment of distinct entities as interchangeable and substitutable (Gilead et al., 2019). To understand that both dogs and spiders might both be considered pets requires integration—the subordination of disparate and idiosyncratic surface-level features in favor of the core and essential features that both share (e.g., Malkoc et al., 2005). By leading people to treat a given object, event, or decision as an interchangeable instance of a broader set or category, abstraction facilitates thinking about more diverse exemplars—thereby expanding regulatory scope. Contracting regulatory scope, by contrast, requires tuning to the idiosyncratic opportunities that local conditions afford. Concretization entails the treatment of entities as unique and distinct and highlights those idiosyncratic details that distinguish them from other entities. This honing-in on what makes a particular instance unique makes one adopt a highly focused yet narrow consideration set—thereby contracting regulatory scope. In the parlance of construal level theory (Liberman & Trope, 2008; Trope & Liberman, 2010), engaging in abstraction versus concretization to mentally represent or construe events is referred to as high-level versus low-level construal, respectively. For the sake of consistency with our prior work, in the present article, we adopt similar terminology.

⁶ There may be many mechanisms initiated after self-control conflicts are identified and resolved that help sustain the prioritization of expansive over contractive concerns. One such example may be goal-shielding (McCulloch et al., 2008; Shah et al., 2002). Although goal-shielding at first glance may appear to require contraction, understanding which goal to prioritize requires expanding regulatory scope. Moreover, goal-shielding requires determining what is relevant and what is not for one’s goal—an act of categorization that should be enhanced by expansive scope.

Empirically, researchers have measured construal level as an individual difference (e.g., Freitas et al., 2001; Vallacher & Wegner, 1989) or manipulated construal level experimentally (e.g., Freitas et al., 2004; Fujita et al., 2006). For the latter, researchers have capitalized on the ability to induce differences in construal level as procedural mindsets (Fujita & Trope, 2014). Specifically, research suggests that inducing the tendency to construe one event in high-level versus low-level terms leads participants to construe subsequent unrelated events in a similar fashion (e.g., Förster et al., 2004; Freitas et al., 2004; Fujita et al., 2006; Hadar et al., 2020, 2022). One commonly used manipulation, for example, has participants think about why versus how they engage in a behavior (e.g., maintain healthy relationships; Freitas et al., 2004). Whereas thinking about the superordinate ends achieved by a behavior (i.e., why) is associated with high-level construal, thinking about the subordinate means with which to implement a behavior (i.e., how) is associated with low-level construal. Another manipulation has participants generate superordinate category labels versus subordinate exemplars for a series of common objects (e.g., “pet” vs. “poodle” for the object “dog,” Fujita et al., 2006). Both mindset manipulations have been shown to effectively manipulate construal level and allow researchers to keep all other variables constant in the critical subsequent choice context.

Novel Insights Into Self-Control

An important insight of the regulatory scope approach to self-control is explicitly recognizing that there may be instances of self-control that do not entail intertemporal choice. Some decisions may entail interdependencies between contractive and expansive considerations that span other dimensions of psychological distance beyond time.⁷ Many social dilemmas, for example, involve conflicts between the interests of the self versus broader collective (e.g., Dawes, 1980; Van Lange et al., 2013). Many have suggested that self-control plays a key role in the successful resolution of these conflicts (e.g., Martinsson et al., 2012; Sheldon & Fishbach, 2011). The regulatory scope approach takes these arguments one step further, however, to suggest that these conflicts are instances of self-control in and of themselves—the dilemmas present rewards that entail interdependencies between contractive and expansive considerations across social distance. The same might be said about conflicts that span other distance dimensions as well, including space and probability. For example, the regulatory scope perspective suggests that NIMBY-ism (“not in my backyard”)—the tendency to oppose development projects such as wind turbines and mobile phone towers when they are to be built in one’s own community, yet tolerate or even support them when they are to be built farther away—might be conceptualized as a failure of self-control along the dimension of space. The phenomenon of underinsurance—decisions to not pay for insurance coverage of costly yet uncertain outcomes—may similarly be viewed as self-control failure along the dimension of probability.

The regulatory scope approach further clarifies why one option in a self-control conflict should be considered “superior” to the other. The “tempting” option is suboptimal because it only addresses a narrow subset of all of the relevant concerns that people might have in a particular situation; the “virtuous” option, by contrast, is superior because it accounts for this narrow set of concerns within the broader spectrum of motivational priorities relevant to the

decision. Thus, unlike many previous models (e.g., divided-mind frameworks), the regulatory scope approach provides a defensible rationale as to why one option should be considered better than the other in a self-control conflict.⁸

Our approach has similarities to Rachlin’s characterization of self-control as a conflict between patterns of behavior and isolated acts (Rachlin, 1995, 2000; see also Ainslie, 2021). Individual acts are embedded within broader patterns of behavior in a hierarchical manner; that is, maintenance of the pattern is conditional and therefore interdependent on the specific act. Echoing William James, Rachlin noted that there is nothing inherently wrong with imbibing an alcoholic drink; it is the repeated pattern of drinking that is problematic—that is, one might be a drunkard. In isolation, any action can seem reasonable—taking advantage of the opportunities that are afforded by a given context (e.g., enjoying the moment with a drink); it is only the repeated pattern of a behavior (e.g., drinking every day) that reveals the broader implications of that action (e.g., one has become an alcoholic). According to Rachlin, when the benefits of these broader value functions supersede the rewards that one might secure from the single act, people experience a self-control conflict: Self-control requires prioritizing the pattern over the act.

Rachlin appears to assume that patterns are self-evident—presumably because they occur in temporal and spatial proximity. Yet what constitutes a pattern depends critically on cognitive abstraction: the ability to see distinct exemplars as instances of broader categories. Whereas going to the gym and eating a salad may not constitute a pattern of behavior when engaged in low-level construal, they may become an apparent pattern (e.g., enacting a healthy lifestyle) when engaged in high-level construal. Our approach highlights abstraction as a critical psychological mechanism of expanding and contracting regulatory scope and subsumes Rachlin’s behavioral approach while broadening the applicability of his perspective.

Empirical Evidence for the Regulatory Scope Approach

The regulatory scope approach suggests that any factor that facilitates the expansion (vs. contraction) of scope should enhance self-control. In what follows, we review empirical evidence for this prediction in the contexts of temporal discounting, health behavior, openness to negative feedback, academic behavior, social traps, exploitation versus exploration decisions, and metamotivation.

⁷ One might be tempted to view the regulatory scope approach as simply generalizing the insights of traditional temporal discounting models to other dimensions of distance. Temporal discounting models, however, tend to focus on concerns relevant between two points in time: one sooner versus one later. By contrast, the regulatory scope approach models concerns relevant between two ranges of psychological distance: one contractive versus one expansive. Thus, not only does the regulatory scope approach generalize beyond time, but it also reconceptualizes what the competing options represent in a self-control conflict.

⁸ Another implication of the regulatory scope approach is that the same decision may be a self-control in one context but not in another. For example, choosing an apple over a candy bar may represent self-control for a dieter but may not for a nondieter who does not share the same broader set of concerns. Similarly, the same decision may also no longer represent self-control for dieters once they have attained their dieting goals. An advantage of the regulatory scope approach is in how it defines self-control in a way that is responsive to changing circumstances and motivational priorities.

Temporal Discounting

People tend to prefer smaller-sooner rewards over larger-delayed rewards, especially when the smaller-sooner rewards are available now; however, adding an equivalent time delay to both options leads people to reverse their preferences and prefer larger-later over smaller-sooner rewards (e.g., [Ainslie, 1975](#)). Thus, adding temporal distance to a decision—prompting people to expand their regulatory scope—enhances self-control. Research on episodic future-directed thought similarly suggests that cueing people to generate images of future events (vs. control) reduces preferences for smaller-immediate over larger-delayed rewards ([Benoit et al., 2011](#); [Daniel et al., 2013](#); [Peters & Büchel, 2010](#); [Stein et al., 2016](#)).

What distinguishes the regulatory scope perspective from the temporal discounting tradition is that it makes similar predictions for distance dimensions beyond time. That is, the regulatory scope framework suggests that people similarly expand regulatory scope in response to distance on the dimensions of space, people, and possibilities. As such, adding an equal span of any dimension of distance to both choice alternatives should increase self-control—a prediction supported by empirical research (e.g., [Keren & Roelofsma, 1995](#); [Maglio et al., 2013](#); [Pronin et al., 2008](#); [Yi et al., 2017](#)). Initially portraying an intertemporal decision as entailing a dimension of spatial distance (e.g., the location of a bank wiring participants their financial rewards is far vs. near), for example, increased preferences for larger-later over smaller-sooner rewards ([Maglio et al., 2013](#)). When asked to make decisions for someone else versus themselves, people similarly prioritized larger-later over smaller-sooner rewards ([Pronin et al., 2008](#)). Expanding regulatory scope across distance dimensions thus appears to systematically impact intertemporal preferences.

[Fujita et al. \(2006\)](#) further demonstrated that experimentally inducing high-level relative to low-level construal—psychological tools that support the expansion of regulatory scope—reduces temporal discounting. Similar results have been reported by [Malkoc et al. \(2010\)](#); [Malkoc & Zauberman, 2006](#)) as well as others ([Rudzinska-Wojciechowska, 2017](#); [Stillman et al., 2017](#); [Ülkümen & Cheema, 2011](#); [Yi et al., 2017](#); see also [Aggarwal & Zhao, 2015](#); [Slepian et al., 2015](#)). Further evidence comes from neuroscience research, which reveals that brain function—in particular, the prefrontal cortex—is hierarchically organized along a rostral-caudal gradient (e.g., [Badre, 2008](#); [Badre & D'Esposito, 2009](#)). Whereas caudal regions are associated with concrete processing, rostral regions are associated with abstract processing. A meta-analysis of 13 intertemporal choice functional magnetic resonance imaging studies with over 400 participants revealed that, whereas preferences for smaller-sooner choice options are associated with activation of more caudal regions, preferences for larger-later options are associated with the activation of more rostral regions ([Smith et al., 2018](#)). Consistent with the regulatory scope framework, this work suggests that cognitive abstraction plays a key role in people's intertemporal decision making.

Research on the “hidden zero effect” ([Magen et al., 2008](#)) can also be interpreted as supporting a regulatory scope perspective. When choice options are presented to participants (e.g., \$5 now vs. \$100 in a year), the opportunity costs of selecting one option versus the other are not always apparent. Making these costs more explicit (e.g., \$5 now and \$0 in a year vs. \$0 now and \$100 in a year) leads people to be less impulsive, leading them to increasingly prefer larger-later

over smaller-sooner rewards. One mechanism for this effect appears to be a shift in “temporal attention”—people become more aware of the impact of their decisions over time (e.g., [Radu et al., 2011](#)). This shift in “temporal attention” is akin to expanding regulatory scope and appears to increase the likelihood that people understand interdependencies between the choice options—how choosing the smaller-sooner reward sacrifices the ability to pursue other ends associated with the larger-later reward.

As noted earlier, the temporal discounting tradition largely focuses on precommitment—binding future decisions and behavior to advance larger-later over smaller-immediate rewards—as key to successful self-control. The adoption of precommitment may be dependent on the expansion of regulatory scope. People are more likely, for example, to precommit when decisions are in the distant versus near future (e.g., [Ainslie, 1975](#); [Thaler & Benartzi, 2004](#); [Thaler & Shefrin, 1981](#)). [Rogers and Bazerman \(2008\)](#) provided some evidence that these temporal dynamics are supported by changes in construal level. Specifically, when decisions are temporally distant (vs. near), people are more likely to engage in high-level (vs. low-level) construal, which in turn promotes precommitment. [Fujita and Roberts \(2010\)](#) experimentally manipulated construal level and similarly found that high-level versus low-level construal increases precommitment. All of these findings are consistent with the notion that precommitment is supported by the expansion of regulatory scope.

Health Behavior

Health behavior is a context in which the contractive and expansive implications of one's actions often diverge. Exercise, eating a healthy diet, maintaining reasonable weight, and smoking cessation are all behaviors that have aversive local features that might deter people from engaging in them; more broadly, however, they confer considerable global value to one's health and other motivational priorities. Engaging in these health behaviors, for example, could lead to a 50% decrease in mortality risk from the leading causes of death ([Knoops et al., 2004](#); [van Dam et al., 2008](#)). As such, health behavior represents an important domain of self-control decision making.

Supporting the predictions of the regulatory scope model is research showing that among a sample of those concerned about weight loss, inducing high-level relative to low-level construal promoted preferences for apples versus candy bars, suggesting enhanced self-control ([Fujita & Han, 2009](#)). [Sweeney and Freitas \(2014\)](#) developed an exercise intervention based on the why–how mindset manipulation and found that high-level relative to low-level construal significantly increased physical activity over a 1-week period (see also [Sweeney & Freitas, 2018](#)). Others report that high-level relative to low-level construal increases interest in and frequency of flossing ([Agrawal & Wan, 2009](#)), reduces smoking ([Chiou et al., 2013](#)), and decreases food consumption ([Chang & Chiou, 2015](#); [Sweeney & Freitas, 2018](#)). Thus, preliminary research suggests that modulating regulatory scope via construal level may impact self-control outcomes across a variety of health behaviors.

Research on “self-distancing”—the reconstrual of events as occurring in a manner that is more remote than direct experience (e.g., [Kross & Ayduk, 2011](#))—reveals similar findings. Self-distancing tactics include adopting a third-person versus first-person visual perspective (e.g., [Ayduk & Kross, 2010](#); [Kross et al., 2005](#);

Libby et al., 2009), using one's name rather than first-person pronouns (e.g., Kross et al., 2014), and referring to one's self by the generic "you" (e.g., Orvell et al., 2020). As self-distancing expands one's regulatory scope, it should enhance self-control. Indeed, visualizing the consumption of unhealthy foods from a third-person versus first-person perspective reduces actual consumption and willingness to pay for those foods (e.g., Christian et al., 2016; see also Basso et al., 2018). Similarly, referring to one's self using self-distanced (e.g., "What does Lucy want to eat?") versus immersed language ("What do I want to eat?") appears to help adult dieters make healthier food choices (Furman et al., 2020). Thus, modulating regulatory scope via self-distancing appears to improve self-control in the health domain.

Openness to Diagnostic Negative Feedback

Receiving diagnostic negative feedback—information that highlights one's deficiencies or weaknesses—is another context in which people must resolve self-control conflicts. Diagnostic negative feedback is generally useful in that it helps people identify areas of weakness and guides efforts at addressing them. Unfortunately, responding constructively to such feedback requires acknowledging negative aspects about the self—a prospect that carries acute affective costs. Research indicates that although people appreciate the value of negative feedback, the affective costs tempt them to derogate or dismiss it (e.g., Sedikides & Hepper, 2009; Trope, 1986; Trope & Neter, 1994). Responding constructively to such feedback requires recognizing that attaining the global benefits of growth and improvement are interdependent and conditional on the pain of acknowledging one's weaknesses—that is, it requires self-control.

Research indicates that expanding regulatory scope promotes greater openness to and acceptance of diagnostic negative feedback (e.g., Belding et al., 2015; Freitas et al., 2001). Freitas et al. (2001), for example, found that both those who dispositionally tend to engage in high-level relative to low-level construal or who were thinking about distant relative to near events were more likely to request career feedback about their liabilities rather than strengths. Belding et al. (2015) manipulated construal level as procedural mindsets and found that high-level relative to low-level construal promoted greater responsiveness to health messages that suggested they were engaging in behaviors that put them at risk for skin cancer. Thus, it appears that expanding regulatory scope—whether by considering more distal situations or engaging in high-level construal—helps people successfully resolve feedback-related self-control dilemmas.

The self-control dynamics of negative feedback are relevant not only to the reception of negative feedback but also to the provision of this information. Feedback providers at times must also decide whether to prioritize the global value of negative feedback or the local value of positive feedback (Freitas et al., 2004). Consider, for example, coaches who must balance bolstering the confidence of their athletes versus investing in their growth and development. Although positive feedback might address the former, negative feedback more effectively addresses the latter. When engaged in high-level relative to low-level construal, feedback providers are more likely to choose to emphasize liabilities over strengths (Freitas et al., 2004)—which suggests a weighting of global growth over local affective concerns in the provision of feedback.

The self-control dynamics of negative feedback, moreover, extend beyond the interpersonal context to intragroup dynamics as

well. When norms for behavior undermine or conflict with a group's values, group members experience self-control conflict (Packer, 2008; Packer & Miners, 2014). Consider, for example, university students whose social groups condone academic cheating. Although this behavioral norm broadly undermines the reputation and values of the group, many may be tempted to conform to satisfy more immediate concerns, such as protecting their individual status within the group and maintaining group harmony. Group members with more expanded regulatory scope—that is, those who were focused on the distant future or who were engaged in high-level construal—were more likely to dissent and speak out against harmful group norms (Packer et al., 2013, 2014).

Academic Behaviors

School presents students with numerous self-control dilemmas. Many academic tasks—such as reading dryly written textbooks, diligently completing practice problems, and prioritizing studying over other more intrinsically interesting activities—require prioritizing one's broader academic aspirations over more narrow local concerns. Indeed, there is research that suggests that academic outcomes may depend as much or more on self-control as they do on intelligence (e.g., Duckworth & Seligman, 2005). High-level relative to low-level construal appears to promote persistence on "boring, but important" academic tasks—such as completing tedious practice exam questions—and decisions between studying and more tempting alternative activities (Yeager et al., 2014). For example, students given the option between completing practice math questions and engaging in media such as playing games and watching videos were more likely to prioritize the former when engaged in high-level relative to low-level construal. Similarly, teaching children to expand regulatory scope using self-distancing tactics also enhances academic self-control. For example, children instructed to self-distance—such as referring themselves by their names or asking themselves what an admired hero like Batman might do—were better able to persevere on tedious academic-related tasks in the face of more engaging alternative activities than those instructed to adopt a more immersed perspective—such as referring to themselves by using first-person pronouns (White et al., 2017; see also White & Carlson, 2016). Thus, expanding regulatory scope appears to promote behaviors that enhance academic outcomes (see also Liberman & Trope, 1998; Sherman et al., 2013; Steinberg & Diekmann, 2018).

Social Traps

A key assertion of the regulatory scope model is that self-control need not involve choice options that vary over time but may instead vary over other dimensions of psychological distance. One particular class of decisions that entail choice interdependencies over social distance are social traps (e.g., Hardin, 1968; Platt, 1973; Schelling, 1974): social dilemmas in which the interests of the broader collective (a more expansive set) are beholden to the actions of individual actors (a more contractive set) whose self-interest directs them to act in an opposing manner. As noted earlier, a classic social trap is the commons dilemma (Hardin, 1968): Self-interest motivates each individual actor to exploit a common resource to the greatest extent possible, leaving the resource depleted and unavailable to all. Although people are tempted to act selfishly when concerned only

about their own interests, the regulatory scope perspective suggests that if they were to expand their consideration set, they should recognize and prioritize the interests of the broader collective. Although such latter decisions are often experienced as requiring self-control (e.g., Baker & Rachlin, 2001; Kocher et al., 2017; Read, 2001; Van Lange et al., 2013), they are rarely integrated with the self-control literature. The regulatory scope model suggests that they can and should be.

Research on interpersonal negotiation provides preliminary support for the assertion that social traps are self-control conflicts that can be addressed by modulating regulatory scope. When parties come together to negotiate multi-issue agreements, they are often tempted to “win” by securing concessions on as many individual issues as possible. This contractive focus on maximizing one’s own gains can lead negotiators to overlook expansive opportunities to work with their negotiation partners to secure integrative win-win agreements. Negotiators, in many cases, are better off conceding on secondary issues to secure gains on primary issues: Engaging in cooperative “log-rolling” allows both parties to get what they want (i.e., integrative agreements) and increases the likelihood that both parties will follow through on what they agreed to (Froman & Cohen, 1970; Pruitt, 1981). The regulatory scope approach suggests that log-rolling requires self-control: Securing integrative agreements requires a more expansive sensitivity to the interests of the other party and acknowledging that conceding on individual (contractive) low-priority issues enhances the likelihood of reaching an agreement.

Consistent with this assertion, Henderson et al. (2006) found that increasing the temporal distance to the negotiation outcomes enhanced negotiators’ interest in integrative over piecemeal discussion of issues, led negotiators to prioritize securing concessions on primary versus secondary issues, and increased the likelihood of reaching an integrative win-win solution (see also Giacomantonio et al., 2010). Experiments in which negotiators’ construal level was experimentally manipulated while holding time constant reveal similar findings (De Dreu et al., 2009; Henderson & Trope, 2009; Wening et al., 2016). For example, negotiators engaged in high-level relative to low-level construal are more likely to exchange information about their priorities and have more accurate knowledge of the opposing party’s priorities, which in turn increases the likelihood of reaching an integrative agreement (Wening et al., 2016). These findings all suggest that expanding regulatory scope can promote successful interpersonal negotiation outcomes.

Interpersonal negotiations, however, represent a specific type of social dilemma in which what is good for the broader collective is also in the best interests of the individual parties. Many of the most pernicious social traps, however, require individuals to sacrifice their interests for the betterment of the collective (Hardin, 1968; Platt, 1973; Schelling, 1974). Research by Stillman et al. (2018) addressed more directly the impact of modulating regulatory scope for the resolution of these types of dilemmas. They created a novel economic game in which decision-makers allocate resources between themselves and others. When rewards were to be distributed in the distant relative to the near future, decision-makers tended to allocate resources in a way that maximized the greatest net gain across all vested stakeholders, irrespective of beneficiaries: They were more likely to sacrifice their own self-interests and preferentially allocate resources to others when it benefited the group as a whole. Stillman et al. (2018) found similar effects when they manipulated construal level. This suggests

that expanding regulatory scope helps decision-makers prioritize the interests of the broader whole, even at the cost of their self-interests.

Further evidence for the benefits of expanding regulatory scope in social dilemmas comes from research on threshold problems in moral decision making (Levine et al., 2020). A threshold problem is one in which if a few people engage in an action, there is no harm, but if too many do it (i.e., once a threshold is crossed), then everyone is harmed. Returning to Hardin’s tragedy of the commons, if one farmer allows his flock to overgraze a little, the viability of the commons is not likely to be threatened; however, if every farmer using the commons were to do this, then the shared resource would collapse. Levine et al. (2020) suggested that most people view this overgrazing as a moral violation and that they come to this judgment by asking, “what if everyone were to do this?” This process of universalization—considering the outcomes of the actions not only of a single actor but of all potential actors—helps people recognize the potential harm in the situation and condemn the behavior. This, in turn, prevents them from engaging in the acts themselves. Thus, by expanding regulatory scope, moral universalization may allow people to maintain self-control in these and other social dilemmas.

Exploitation Versus Exploration

Decision-makers often face the difficult choice of exploiting a known resource or opportunity versus exploring new ventures for greater rewards (e.g., Cohen et al., 2007; Hills et al., 2015). For example, company managers must decide whether to invest more in its sales team (to sell existing products) or in research and development (to find newer and potentially more profitable ones). Although this conflict can occur over temporal distance (e.g., smaller-immediate vs. larger-later rewards), it may also occur over other dimensions of distance, such as space or probability. Nomadic shepherds, for example, might debate whether to exploit proximal locations with limited resources for their herds or to venture to more distal locations with more abundant and varied resources. Investors might feel conflicted over investing in an established company that produces a single product with a limited ceiling for returns or in a riskier start-up that promises to create novel classes of products for greater return on investment. As these decision conflicts between exploitation and exploration are structured around interdependencies across some dimension of psychological distance, the regulatory scope approach suggests that they are all instances of self-control dilemmas (see also Inzlicht et al., 2014).

Consistent with this assertion, Yudkin et al. (2019) found that people were significantly more likely to choose to explore rather than settle for more modest rewards after inducing them to expand versus contract regulatory scope. Specifically, participants were presented with the Two Hills Task (Yechiam et al., 2001), in which they faced a 20 × 20 grid, each with a hidden point value. Participants are instructed to earn the most points possible in a limited number of turns. Two areas of the grid are noteworthy as they provided more points than others (i.e., maxima). One was closer to the starting point of the game and provided a modest return (local maximum); the other was further away but provided a much larger payoff (global maximum). Participants were explicitly informed about the existence of the global maximum and that finding it could result in substantially higher rewards. Given its proximity to the starting point, most participants discovered the local maximum—they thus had to decide whether to exploit this area versus suffer a temporary decrease in

returns to find the global maximum. When participants played the game to benefit someone else versus themselves (e.g., expanded their regulatory scope via social distance), they were more likely to engage in exploration rather than exploitation—and subsequently experienced greater success in the game. Individual differences in construal level similarly predicted the likelihood of discovering the global maximum. These findings support the notion that expanding regulatory scope allows people to prioritize global over local concerns in deciding whether to exploit or explore.

Metamotivational Beliefs

Much of the research reviewed above adopted a strategy whereby researchers experimentally manipulated regulatory scope (generally via psychological distance and/or construal level) and observed the consequences. Additional evidence comes from research that assesses people's metamotivational beliefs: People's beliefs about motivation may impact goal performance and outcomes (Fujita et al., 2019; Miele & Scholer, 2018; Scholer & Miele, 2016; Scholer et al., 2018). One might imagine that to the extent that people are aware of the benefits of expansive regulatory scope for self-control, they should evidence more successful self-control.

As an initial exploration of people's awareness of the benefits of expanding regulatory scope, MacGregor et al. (2017) asked participants to imagine they were in a marketing study in which they would be sampling new cookie products that were designed to maximize taste—and as such, were also high in calories. Critically, half of the participants were asked to imagine having a restraint goal—a concern about eating too many of the cookies; the other half were asked to imagine having an enjoyment goal—a concern about maximizing the hedonic experience of eating the cookies. Participants were then asked to indicate how useful it would be for their respective goals to think about why (or why not) they would eat the cookie and how (or how not) they would eat the cookie. Those in the restraint versus enjoyment conditions were more likely to report that thinking in terms of why relative to how would be more useful for advancing their goal—suggesting that they correctly understood that high-level relative to low-level construal would help them expand their regulatory scope and aid self-control (see also Ayduk & Kross, 2010; Bruehlman-Senecal et al., 2016; Nguyen et al., 2019; White et al., 2015).

Individual differences in this knowledge, moreover, appear to predict individual differences in meaningful self-control outcomes. MacGregor et al. (2017), for example, found that among those concerned about weight loss, those who correctly understood the self-control benefits of high-level construal (relative to those who did not) tended to have lower body mass indices—suggesting greater self-control success. In another study, among achievement-oriented undergraduate students, those who evidenced greater accuracy in their metamotivational beliefs about the benefits of high-level construal for self-control achieved higher grades in an introductory social psychology course. Thus, not only do lay individuals appear to be knowledgeable about the self-control benefits of high-level relative to low-level construal, but individual differences in this knowledge also appear to predict important outcomes (see also Nguyen et al., 2019, 2023). This provides further evidence that people may strategically modulate their regulatory scope in anticipation of self-control demands.

Summary

A broad and growing literature supports the regulatory scope approach to self-control. Expanding regulatory scope by imposing psychological distance between the decision-maker and choice options or by making more accessible the cognitive tools that facilitate the expansion of regulatory scope (i.e., abstract high-level construal) promotes preferences for smaller-sooner over larger-later rewards. Expanding regulatory scope also enhances self-control in health and academic behavior and in the acceptance and provision of negative feedback. Beyond these “traditional” self-control outcomes, expanding regulatory scope also enhances cooperation in social dilemmas, including interpersonal negotiations and the distribution of resources to self and others. People are, moreover, more likely to prioritize exploration over exploitation in their decisions when they have expanded versus contracted their regulatory scope. Finally, people appear to strategically modulate their regulatory scope in anticipation of self-control conflicts, and individual differences in this tendency predict self-control outcomes. We note that many of these predictions are unique to the regulatory scope approach and that other models may be challenged to explain them without additional assumptions. The regulatory scope approach provides a parsimonious explanation for a broad and rich set of consistent findings relevant to self-control.

How Expanding Regulatory Scope Enhances Self-Control

We proposed that expanding regulatory scope promotes self-control in two ways. First, expanding regulatory scope may facilitate the identification of a situation as one that represents a self-control dilemma. That is, one must recognize the interdependencies between the salient contractive concerns in the here-and-now and the expansive concerns that are put at risk. Second, expanding regulatory scope may facilitate the resolution of these conflicts by changing the evaluation of local relative to more global rewards. That is, once one understands that expansive rewards are conditional on not responding to contractive rewards, the value of the latter may diminish. This may not only reduce or eliminate the “pull” of any local temptation but, in turn, also reduce the degree of conflict of the competing options and facilitate the resolution of the conflict in favor of one's broader concerns. Research has provided preliminary evidence for these propositions.

Identification of Conflict

Regulatory scope may play a key role in identifying situations as entailing self-control conflicts. Sheldon and Fishbach (2015), for example, presented participants with situations that tempted unethical behavior—deceiving one's interaction partner to achieve self-interested outcomes. Prior to the interaction, however, they manipulated regulatory scope by having participants consider the decision as one of a more global pattern versus isolated act. Specifically, participants thought about how the present decision might be related (vs. not) to future decisions that they might make. Those who contextualized decisions within a broader pattern were more likely to identify the interaction context as involving “ethical aspects” and, in turn, less likely to engage in deception.

Additional evidence concerning the identification of conflicts comes from research in melioration—the tendency to pick options that have immediate payoffs while overlooking their negative impact on the value of potential future rewards (e.g., [Herrnstein et al., 1993](#)). Consider, for example, touch-typing: a skill that requires an initial cost to one's typing speed but, through repeated practice, becomes more efficient. When deciding whether to practice touch-typing, people often fail to appreciate how the returns on touch-typing depend on how often one has practiced it. As such, they engage in behavior that in the short term appears to provide greater immediate returns (avoiding the slowdown in productivity to practice touch-typing) at the expense of gains that could be achieved over an extended period of time (significantly faster typing speeds with practiced skill). Expanding regulatory scope should help people recognize the broader consequences of one's local decisions and resolve conflicts in a manner responsive to these concerns. Consistent with this assertion, research participants engaged in high-level versus low-level construal evidenced marked reductions in melioration, suggesting that they better understood the consequences of their current decisions for the value of future options and made decisions accordingly ([Pick-Alony et al., 2014](#)). This too suggests that expanding regulatory scope may enhance self-control conflict identification.

Facilitating the Resolution of Conflict

Expanding regulatory scope may change the value of local temptations, making successful resolution of the self-control conflict easier. By framing a given choice in the context of one's broader concerns, local temptations may lose their "pull." [Fujita et al. \(2006\)](#), for example, showed that people were more likely to evaluate temptations that undermine valued goals more negatively when engaged in high-level versus low-level construal. [Fujita and Han \(2009\)](#) demonstrated similar results using an implicit measure of evaluation: High-level relative to low-level construal facilitated associating candy bars (vs. apples) with negativity (vs. positivity), and these changes in evaluative associations subsequently led people to forgo a candy bar in favor of an apple. This latter finding is notable in that other research has used people's evaluative associations to assess the experience of temptation impulses (e.g., [Hofmann et al., 2009](#)). By reducing the value of local temptations, expanding regulatory scope appears to change the subjective experience of those rewards—that is, eliminating the impulses that temptations may normally provoke (see also [Rees et al., 2018](#)). These and other findings support the assertion that expanding regulatory scope via construal level facilitates the resolution of self-control conflicts by changing the value of immediate rewards (see also [Belding et al., 2015](#); [Camevale et al., 2015](#); [Davis et al., 2016](#); [Freitas et al., 2008](#); [Sweeney & Freitas, 2018](#)).

By changing the value of local rewards, expanding regulatory scope may also facilitate the ease with which people resolve these self-control conflicts. [Stillman et al. \(2017\)](#) tracked participants' motor movements as they used a computer mouse to make a series of intertemporal choices while engaged in high-level versus low-level construal. This mouse-tracking paradigm can be used to assess participants' decision conflict: Those who experience greater conflict should evidence greater mouse movements between the choice options. Replicating previous work (e.g., [Fujita et al., 2006](#); [Malkoc et al., 2010](#)), high-level relative to low-level construal

reduced preferences for smaller-sooner over larger-delayed options. Moreover, this effect was mediated by a reduction in decision conflict: When engaged in high-level versus low-level construal, there was a marked absence of motoric attraction to the tempting smaller-sooner alternatives, and the absence of this "pull" in turn was associated with preferences for larger-delayed outcomes. Thus, successful self-control was marked by the absence rather than the presence of conflict (see also [Fujita, 2011](#); [Milyavskaya & Inzlicht, 2017](#)). Although this finding may be perplexing from the perspective of many divided-mind models that emphasize the critical role of effortful restraint in successful self-control, it can be readily accounted for by the regulatory scope model—by changing the value of the local rewards, decisions that were once experienced as difficult give way to decisions with more sensible dominant options, that is, the one that accords with one's broader set of considerations.⁹

Summary

Successful self-control requires identifying situations as entailing self-control conflicts and resolving those conflicts in favor of one's more expansive concerns ([Myrseth & Fishbach, 2009](#)). Emerging research suggests that expanding regulatory scope enhances people's ability to address both of these critical processes. In this way, the regulatory scope model builds on contemporary theoretical frameworks that taxonomize the various tactics people use to resolve their self-control dilemmas (e.g., [Duckworth et al., 2014, 2016](#); [Fujita et al., 2020](#); [Gillebaart & de Ridder, 2015](#)) by also recognizing and integrating other critical mechanisms necessary for self-control (i.e., identification).

Implications

The regulatory scope model that we propose advances the conceptualization of self-control in many ways. In what follows, we identify and elaborate on nine key advances.

Self-Control Is a Problem of Regulatory Scope

First, rather than viewing self-control as a problem of intertemporal choice—a dilemma between immediate versus delayed outcomes—we propose that self-control is a problem of regulatory scope—the range and variance of concerns that one accounts for in decision making. The greater the variance one accounts for, the more likely one will identify and address interdependencies between relevant concerns—leading to self-control success. The narrower the

⁹ At first glance, the assertion that self-control success is marked by the absence of conflict may appear at odds with research highlighting the benefits of conflict mindsets—the simultaneous accessibility of two or more opposing alternatives—for self-regulation (e.g., [Kleiman & Enisman, 2018](#)). We see no contradiction, however. Conflict mindsets activate proactive rather than reactive control mechanisms ([Kleiman et al., 2014, 2016](#)); they are less likely to prompt the subjective experience of temptation impulses that need to be inhibited. Moreover, conflict mindsets are produced by considering content in an irrelevant domain, which then carry over to subsequent contexts. Thus, although the mindset is activated, people may not have the subjective experience of conflict in the "carry-over" domain. We define self-control conflict structurally rather than subjectively: Conflict mindsets may attune people to the structural conflict without producing the subjective experience of conflict.

variance one accounts for, the more likely one may overlook or ignore such interdependencies—leading to “myopic” decisions. In this way, the regulatory scope approach shifts the focus of self-control from the timing of decisions, the emotionality of people’s responses, and/or the motivation and capacity to inhibit undesired responses to how to find a solution that satisfies multiple (and varied) motivational priorities. In doing so, phenomena that might not have previously been classified as self-control but are experienced as such—such as social traps and exploitation versus exploration decisions—can now be conceptualized as fitting under the explanatory purview of self-control—leading to new research questions and novel insights.

Note that the regulatory scope approach also suggests that the consideration of expansive concerns is not a dichotomous process (whether one considers them at all or not). Instead, it suggests that self-control decisions may lie on a continuum, reflecting the degree to which one considered an ever broader set of considerations. Decisions that require addressing greater variance may reflect greater self-control. In social dilemmas, for example, having to account for a greater number of differing perspectives may be more challenging and result in solutions that are more fragile. Crafting policies that address ever more unlikely possibilities may require more self-control. Thus, rather than reflecting an all-or-none classification, the regulatory scope approach suggests decisions can differ in the degree to which they represent self-control dilemmas.

Clarifying What Is and What Is Not Self-Control

A second advance of the present model is providing greater clarity as to what is and what is not self-control. We propose that self-control entails resolving conflicts that occur when the attainment of more expansive concerns is dependent on the foregoing of local opportunities. Critically, rather than arbitrarily assigning one element or the other as reflecting what people truly want (i.e., hot vs. cold, automatic vs. controlled)—a requirement of many divided-mind models of self-control—the regulatory scope model presents a clear, defensible, and reasonable answer as to why one response is “wrong” (reflecting a narrow set of local concerns) and the other “right” (reflecting a broader set of global concerns that subsume the local ones).

By extension, any decision or action that is not characterized by interdependencies between expansive and contractive concerns is not a self-control conflict. Overcoming obstacles—something often attributed to “willpower”—may or may not reflect self-control, depending on the structure of the choice options. Similarly, conflict itself is not indicative of self-control. For example, consumers may feel conflicted about purchasing a blue versus black ink version of a pen that they desire. This may be a difficult decisional conflict to resolve, but it does not entail self-control: The structure of this decision does not provide clear guidance as to which of the two options is “right choice.” The interdependencies of the expansive versus contractive options in a self-control decision are what provide people a sense that there is a “right” or “virtuous” choice. Similarly, conflicts between abstract values such as power (hierarchy) versus universalism (equality) can create conflicts that are troubling and difficult to resolve (e.g., Schwartz, 1992). However, as these conflicting values typically span similar (expansive) regulatory scope, they should similarly not be viewed as instances that require self-control.¹⁰

Structural Conflict Rather Than Subjective Experience

The third major advance of the model that we propose is that the conflict in self-control is structural and may or may not reflect the subjective experiences of the decision-maker. Psychological models tend to put a premium on explaining the subjective experience of conflict (i.e., the proverbial angel and devil on each shoulder) and often do so by pitting one element of the mind against another. For example, the hot versus cool tradition suggests that the cool elements of the mind must combat and restrain the hot elements. Similarly, the automatic versus controlled tradition assumes that controlled elements must correct or “undo” the tendencies of the automatic elements. Thus, the experience of conflict is often modeled as an essential step in successful self-control. By contrast, the regulatory scope model suggests that self-control failures may occur because of failure to understand the structural interdependency of the global upon the local. It is largely silent as to whether this process produces a subjective experience of conflict. We are not suggesting that conflict is irrelevant to self-control but instead suggesting that it is not essential. Indeed, if anything, research suggests that rather than serve as a marker of self-control, subjective conflict may signal the failure of one’s initial efforts (e.g., Fujita, 2011; Milyavskaya & Inzlicht, 2017; Stillman et al., 2017). As such, this emphasis on structural conflict is not only an important implication of the regulatory scope approach but also more consistent with the emerging literature.

The Problem of Direct Experience

A fourth major advance of the regulatory scope model of self-control is providing novel insight into why people so often lose sight of their broader concerns in the moment of choice. That is, it provides a new understanding as to why, despite the presence of a superior choice option, people are so tempted by inferior local rewards. The regulatory scope framework suggests that the consideration of proximal objects and events prompts the contraction of regulatory scope. It is the direct experience of local rewards—those that are available immediately, here, to me, and in reality—that leads people to narrow their scope. Successful self-control requires counteracting this normally functional association between the distance of an object and the regulatory scope that one adopts; that is, one must expand regulatory scope despite the proximity of the local rewards. Indeed, as reviewed earlier, it is those who understand this unusual contingency who exhibit the best self-control (e.g., Ayduk & Kross, 2010; MacGregor et al., 2017; Nguyen et al., 2023).

More broadly, this work is consistent with the argument that there is no panacea for successful self-regulation (e.g., Gollwitzer, 1990; Higgins, 2000; Scholer et al., 2018): What is effective in addressing one self-regulatory problem may not be functional in addressing another. Whereas contracting regulatory scope may be beneficial when self-regulation requires tailoring one’s behavior to subtle changes in one’s environment to exploit local opportunities, expanding regulatory scope may be beneficial when one needs to look beyond the particulars of the here-and-now—as is the case in self-control conflicts (e.g., Nguyen et al., 2019; Trope et al., 2021).

¹⁰ Although decision conflicts do not necessarily entail self-control, wrangling with indecision over a difficult decision may morph into a self-control dilemma in some instances in which people are tempted to continue ruminating over choice when it might be more adaptive and beneficial for the individual to move on by making any decision.

This again highlights the need to understand that self-regulation and self-control are not synonymous and need to be modeled as distinct theoretical constructs.

Broadening the Self-Control Toolbox

A fifth major advance of the present conceptualization of self-control is the integration of a broader array of response tactics than previous models. Whereas some models of self-control—such as traditional automatic versus control accounts—spotlight reactive tactics like effortful inhibition as key to success, others—such as temporal discounting—emphasize proactive tactics like precommitment (see also Duckworth et al., 2014, 2016; Fujita, 2011; Fujita et al., 2020). The regulatory scope approach embraces both reactive and proactive tactics as instances of self-control. Moreover, one might suggest that the latter in particular is dependent on the expansion of regulatory scope. Proactive tactics require anticipation and planning—processes that require consideration of circumstances that may extend beyond the here-and-now. This requisite expansion of regulatory scope may be why proactive tactics are often found to lead to more positive outcomes than reactive tactics (e.g., Fujita, 2011; Milyavskaya & Inzlicht, 2017; Williamson & Wilkowski, 2020).

The regulatory scope approach broadens the self-control “toolbox” in another way. Consider precommitment. Precommitment involves making self-control decisions when they are more distant in time—when local temptations have less impact on the decision-maker. The regulatory scope approach suggests that such distancing can occur not only over the dimension of time but also over space, people, and possibilities. For example, a decision-maker might ask a surrogate to make the decision for them or make decisions when they are still hypothetical rather than real. Thus, rather than examining these tactics in isolation, the regulatory scope model provides a broader conceptual framework with which to think about the various tools people have at their disposal to enhance self-control, which in turn may lead to new insights and the development of novel ones.

Clarifying the Role of Emotion in Self-Control

A sixth major advance of the regulatory scope model is clarifying the role that emotion plays in the resolution of self-control dilemmas. Many models of self-control treat emotions as an anathema to self-control, proposing emotion regulation is a core feature of how people resist temptation (e.g., Duckworth et al., 2014, 2016; Kross & Ochsner, 2010; Loewenstein, 1996; Metcalfe & Mischel, 1999; Nordgren et al., 2007). Nevertheless, there are emotions that promote rather than impair self-control (e.g., DeSteno, 2009; DeSteno et al., 2014; Dickens & DeSteno, 2016; Giner-Sorolla, 2001; Hofmann & Fisher, 2012; Shimoni et al., 2019, 2022). The regulatory scope model suggests that this apparent discrepancy can be resolved by the insight that whereas some emotions expand regulatory scope, other emotions contract regulatory scope.

Emotions can be distinguished on whether their underlying appraisals entail low-level versus high-level construal (Moran & Eyal, 2022). For example, whereas joy is experienced from consideration of the local features of one’s immediate context, pride is experienced from consideration of the more global implications of the emotion-eliciting event (e.g., relevance to one’s broader goals and values). Indeed, experimental manipulations that induce

concrete low-level construal of events intensify low-level emotions, whereas those that induce abstract high-level construal intensify high-level emotions (e.g., Bornstein et al., 2021; see Moran & Eyal, 2022, for meta-analysis). Critically, high-level versus low-level emotions may enhance self-control (DeSteno, 2009; DeSteno et al., 2014; Dickens & DeSteno, 2016; Shimoni et al., 2019, 2022). For example, prompting children to think about the pride versus joy that they might experience as a result of their decisions enhances their ability to delay gratification (Shimoni et al., 2019, 2022; cf. Shimoni et al., 2016). Similarly, emotional states that expand versus contract regulatory scope may also be associated with greater cooperation in social dilemmas (e.g., de Hooge et al., 2008; DeSteno et al., 2010; Dorfman et al., 2014). Having participants consider the prospects of experiencing pride versus joy, for example, increased cooperation in a commons dilemma game (Dorfman et al., 2014). Rather than relegating emotions as a precursor to poor self-control, the regulatory scope model provides a framework for understanding the nuanced ways that they impact decision making by highlighting their role in modulating regulatory scope.¹¹ This is not to dismiss the central role emotions may have in self-control failures; instead, we advance a more comprehensive account of their role in both undermining and promoting self-control.

New Insights Into Trait Self-Control

A seventh advance may be new insight into the construct of trait self-control. Reflecting the broader debates over what self-control is, there is disagreement over what trait self-control is. Some have suggested that trait self-control is a capacity for effortful inhibition (Tangney et al., 2004), whereas others have suggested that it instead reflects skillful deployment of proactive tactics (de Ridder et al., 2012; Ent et al., 2015; Gillebaart & de Ridder, 2015). We instead advance an alternative perspective that echoes and extends the cognitive-affective personality system approach to understanding individual differences (W. Mischel & Shoda, 1995). That is, rather than focus on behavioral traits, our work conceptualizes self-control as the operation of context-specific knowledge (i.e., if-then representations). Our work suggests that those with high trait self-control are those who know to expand rather than contract regulatory scope when confronted with self-control conflicts (i.e., “if I need self-control, then expand scope”). Although we reviewed some initial supportive evidence for this proposition (e.g., Ayduk & Kross, 2010; Bruehlman-Senecal et al., 2016; MacGregor et al., 2017; Nguyen et al., 2019, 2023), we note that no work to date has directly tested this hypothesis. Nevertheless, one strength of our approach is that we provide a more mechanistic explanation for this trait construct, providing an explanation for situational variability and suggesting specific intervention targets for attempts at change.

¹¹ Although not synonymous, desires are often described in emotional terms. Our model suggests that there may be contractive and expansive desires. Lust and love, for example, might exemplify this distinction (e.g., Epstude & Förster, 2011; Förster et al., 2010). Our model is unique in that it suggests that expansive desires can motivate self-control—people’s love for their spouses and children may motivate them to overcome the lust associated with extra-marital affairs.

Integrating Strategic Indulgence Into Self-Control

An eighth major advance of the regulatory scope approach is modeling the possibility of strategic indulgence (Jia et al., 2019). Existing models are fairly rigid as to what response represents self-control success versus failure, generally defining these outcomes in terms of abstinence (Le et al., 2024). By contrast, by conceptualizing self-control as something akin to constructing and implementing policies, the regulatory scope approach allows for some indulgences to be viewed as strategic and examples of successful self-regulation. Consider, for example, dieters who have successfully lost weight and have established healthy habits for maintaining this successful outcome. Indulging in a once-in-a-lifetime opulent meal for a very special occasion may be an “acceptable” behavior if one were to expand regulatory scope and consider how a particular situation fits into the larger scheme of things—for example, how likely it is to repeat itself, how one would feel a long time after indulging (as opposed to failing to indulge), and how each of these behaviors would be perceived by others. Similarly, many weight loss and fitness programs include “cheat days”—opportunities for participants to satisfy motivations (such as eating their favorite unhealthy and fattening foods) that have been backgrounded in favor of weight loss and fitness goals. The basic rationale for such strategic indulgences is that they allow people to satisfy multiple motivations while preventing a complete derailment of their prioritized goals. Indeed, research suggests that those with greater self-regulatory skill are more likely to engage in strategic indulgence as a way to “have their cake, and eat it too” (Jia et al., 2019). Rather than represent self-control failures, these appear to represent instances of very sophisticated self-regulation—the balancing of diverse and competing motivations while maintaining order (see also Bernecker & Becker, 2021; Fishbach & Dhar, 2005; Le et al., 2024). Key here, however, is that these decisions are “principled”—they result from consultation with a more expansive, broader set of relevant concerns and reflect a policy. The present regulatory scope approach may be the only currently existing model that can account for this sort of phenomenon.

The strategic indulgence described above bears striking similarities to win-win integrative agreements in interpersonal negotiations. That is, just as the most effective agreements in interpersonal negotiation may be achieved through concessions on low-priority issues, perhaps the most effective goal conflict resolutions in intrapersonal deliberation are achieved through a process akin to log-rolling. That is, by expanding regulatory scope, decision-makers may become more sensitive to the level of threat that a local reward constitutes for a broader set of concerns. They may be more willing to “concede” an indulgence opportunity when the threat is relatively low and the overall gain is high, but insist on restraint when the threat is relatively high relative to the potential gain. This may set the stage for the kinds of principled indulgence revealed in strategic indulgence research.

Highlighting the Similarities Between the Regulation of Self and Others

By suggesting that social dilemmas may represent instances of self-control, a ninth major advance of the regulatory scope approach is that it facilitates the application of ideas from one domain to the other, potentially leading to innovative research questions and novel

insights. For example, trust is critical for reaching integrative interpersonal agreements (Kong et al., 2014). Trust appears to play a similarly central role in self-control. Both children and adults, for example, are willing to delay gratification only when the provision of larger-later rewards is offered by an individual that they view as reliable (L. E. Michaelson & Munakata, 2016; see also L. Michaelson et al., 2013; Reynolds & McCrea, 2019). Similarly, individuals from poorer communities make fewer myopic intertemporal decisions the more they trust that their communities will support them if in need (Jachimowicz et al., 2017; see also Shafir, 2017). Research to date, however, has yet to examine intrapersonal trust: To what extent do people trust themselves? Self-trust is critical because people must believe that the sacrifice of contractive opportunities will lead to fulfillment of more expansive concerns—they must trust themselves to abide by policies that are responsive to the interdependencies of choice options. Dieters, for example, may refuse to forgo the enjoyment of eating cake in favor of weight loss if they do not trust that they will continue to make the necessary decisions to achieve their dieting goals. There is no need to endure the initial cost of embarking on a course of action if people cannot depend on themselves to continue prioritizing more expansive considerations in subsequent decisions.

Some support for the notion that self-trust matters comes from research that models self-control as choice dilemmas between the present and future self (e.g., Schelling, 1960; Thaler & Shefrin, 1981). This perspective posits that whereas the present self prefers smaller-sooner rewards, the future self prefers larger-later rewards. Although this work has not examined trust per se, it has examined a closely related construct: the perceived overlap or connectedness between present and future selves. When people feel greater connection to the future self, they tend to exhibit greater self-control (e.g., Bartels & Urminsky, 2011; H. Ersner-Hershfield, Garton, et al., 2009; Ersner-Hershfield, Wimmer, et al., 2009; Ersner-Hershfield et al., 2011; Milch, 2010; Touré-Tillery & Light, 2018).¹² Generally, these findings are interpreted as the present self having greater empathy for the desires of the future self, but they may also reflect a dynamic in which the present contractive self trusts the expansive self to have their collective best interests in mind when acquiescing to sacrifices now. Indeed, to the extent that people feel like they truly understand themselves (e.g., self-concept clarity), they evidence greater self-control (e.g., Jiang et al., 2023). Greater understanding of one’s self (and one’s future self) may increase this intrapersonal trust, benefiting self-control.

An implication of the regulatory scope model then is that, whereas the internal intrapersonal dynamics of some individuals may be characterized by mutual respect and cooperation, others may be characterized by suspicion and conflict. An absence of trust may lead to control dynamics that are more authoritarian and absolute. This is the dynamic that is assumed in most intertemporal choice models—as the present self cannot be trusted, the future self needs to constrain it, presumably by using precommitment to remove the present self’s ability to act on its preferences (Thaler & Shefrin, 1981). Supporting this observation, the phenomenon of strategic indulgence might be contrasted with hyperopia—the tendency to engage in excessive overcontrol and habitually avoid enjoyment of

¹² These results can also be interpreted as supporting the regulatory scope model: People exhibit greater self-control when the present self expands (rather than contracts) and accounts for the concerns of the future self.

present rewards even when they do not threaten future outcomes (e.g., Haws & Poynor, 2008; Kivetz & Simonson, 2002). Research suggests that hyperopic individuals regret not taking opportunities to indulge when they can (Kivetz & Keinan, 2006; Keinan & Kivetz, 2008) and paradoxically require self-control tactics such as precommitment to enjoy present hedonic rewards (Kivetz & Simonson, 2002).¹³ This draconian overcontrol may result from intrapersonal dynamics that are authoritarian and oppressive as a result of poor self-trust. Whether people are able to engage in strategic indulgence or must contend with hyperopia may depend on this trust. Future work might examine when and why some people's self-control behavior is more or less authoritarian and may provide insight into the age-old question of whether moderation versus abstinence represents the best recommendation for addicts and others struggling with self-control (see also Le et al., 2024; Rachlin, 2000).

Summary

As an integrative theoretical framework, the regulatory scope model has much to offer to the study of self-control. It extends the conceptualization of self-control, identifying the central conflict as one between behavior guided by a broad set of relevant concerns versus a narrower subset of concerns salient for the self, here and now. This novel approach clarifies that the conflict in self-control is structural and may or may not reflect the subjective experiences of the decision-maker. The current approach offers a number of distinct advances beyond current models, including greater clarity as to what is and what is not self-control, a clear and defensible criterion as to why one choice response is superior to the other (the broader set of global concerns that subsume the local ones), and the integration of a greater number and diversity of self-control tactics. It provides novel insight into why people fail at self-control and may explain individual differences. It further clarifies the role of emotions in self-control, providing a framework for understanding when emotions facilitate versus impair successful outcomes. It also incorporates the possibility of strategic indulgence, thus allowing for the possibility of pursuing moderation rather than only abstinence in the resolution of self-control dilemmas. The regulatory scope approach moreover extends self-control to explain phenomena not typically modeled as self-control, such as social dilemmas and exploration versus exploitation decisions, leading to new insights and novel research questions. In what follows, we highlight the generative potential of this framework by exploring additional new research questions that it may inspire.

Future Directions

Neural Mechanisms of Self-Control

Much of the work to date that tests the regulatory scope model is behavioral; more research is needed to link this work to underlying cognitive neuroscientific mechanisms. Preliminary research, however, suggests that the modulation of regulatory scope may be supported by changes in the functional connectivity of neural networks (Stillman et al., 2020). Specifically, whereas thinking about events that are temporally proximal promotes segregation—how densely interconnected nodes are with their closest neighbors—thinking about events that are temporally distant promotes integration—how readily information can transverse disparate nodes of the neural network. Similar changes in the neural network occur when people engage

in low-level versus high-level construal, respectively. Thus, the expansion and contraction of regulatory scope in self-control may be supported by changes to the neural network that promotes coordination between and within subnetworks of the brain. Future research will need to establish that this neural integration versus segregation promotes self-control.

Cognitive neuroscience has revealed mechanisms that appear to account for self-control success versus failure that need to be integrated with the regulatory scope model. For example, future research should test the implications of the present model for neural cue reactivity (e.g., Boswell & Kober, 2016; Engelmann et al., 2012; Heatherton & Wagner, 2011). Activation of reward regions of the brain in response to reward cues (such as visual cues of palatable foods for restrained eaters) is associated with self-control failure (e.g., Boswell & Kober, 2016; Lopez et al., 2014). The regulatory scope model suggests that such neural cue reactivity results from a narrowed focus on contractive opportunities that is unresponsive to people's expansive concerns. Indeed, consistent with this logic, research indicates that thinking about the delayed relative to immediate outcomes of smoking can reduce smoking-related neural cue reactivity among smokers (Kober, Mende-Siedlecki, et al., 2010; see also Kober, Kross, et al., 2010). One might further predict that interventions that expand versus contract scope should similarly reduce neural cue reactivity, which in turn should promote self-control.

We might go one step further and suggest that expanding regulatory scope may promote greater neural cue reactivity to cues associated with expansive concerns (e.g., healthy, low-calorie foods for a restrained eater). That is, what is viewed as "rewarding" may depend on regulatory scope. There is suggestive evidence in support of this hypothesis. Initial evidence suggests that activation of the ventral medial prefrontal cortex is sensitive to the immediacy of rewards and predisposes people to impulsive decisions (McClure et al., 2004). Subsequent research, however, has shown that this same brain region also encodes delayed rewards and predicts restraint when its signal is modulated by the dorsolateral prefrontal cortex (Hare et al., 2009). Intriguingly, the latter is also associated with thinking about psychologically distant events (Stillman et al., 2017). This is consistent with the proposition that expanding regulatory scope may alter people's neural responses to promote behavior directed at advancing broader concerns. Direct testing of this proposition, however, is still warranted to fully evaluate its tenability.

Development and Acquisition of Self-Control

The regulatory scope model poses testable hypotheses about the development of self-control—that is, the ability to exert self-control is contingent on the ability to modulate regulatory scope. This ability may codevelop with the development of cognitive abstraction abilities that occurs over childhood and adolescence. Consistent

¹³ We might add that there is some research that suggests that when hyperopic individuals engage in high-level versus low-level construal, this tendency to avoid present rewards appears to decrease (Haws & Poynor, 2008; Kivetz & Keinan, 2006; Keinan & Kivetz, 2008; Kivetz & Simonson, 2002; Mehta et al., 2014). However, the relationship between self-control and hyperopia—that is, whether hyperopia represents too much or too little self-control—is debatable. As a consequence, under what conditions high-level relative to low-level construal decreases hyperopia is yet unclear.

with this suggestion, many forms of cognitive control in children are contingent on the development of more abstract cognitive representations (e.g., [Munakata et al., 2012](#)). Future research might examine more directly the covariation of cognitive abstraction abilities and children's self-control.

Perhaps just as important as the development of abstraction abilities is learning the value of strategically modulating regulatory scope in the service of self-control (e.g., [H. N. Mischel & Mischel, 1983](#); [Miele et al., 2020](#); [Nguyen et al., 2019](#); [Scholer et al., 2018](#); [Trope et al., 2021](#)). What is still largely unknown is when, where, how, and from whom people learn how to modulate regulatory scope. Classic delay-of-gratification research focuses on young children and suggests dramatic changes occur between the ages of 3 and 5 (e.g., [W. Mischel et al., 1989](#)). The acquisition of many abilities necessary to engage in goal-directed behavior, however, may occur throughout development, including adolescence (e.g., [Davidow et al., 2018](#)). Although much of this growth is likely due to neurological development, various childhood and adolescent experiences may also provide novel opportunities for learning. For example, one might speculate that as adolescents strive to become more independent of their caregivers, they begin to explore new environments that differ from the relatively more disciplined environments that caregivers provide. That is, not only do adolescents have a greater desire for independence (an expansive motivation), but their exploration of these new opportunities may also afford learning how to expand regulatory scope. The absence of external sources of control, too, may spur the development of internal sources and may facilitate the learning of new skills (e.g., [Fishbach & Trope, 2005](#)). Consider, too, the relationship between psychological distance and construal level. Exposure to socially distant versus proximal models facilitates more abstract, high-level (vs. more concrete low-level) learning ([Hansen et al., 2016](#); [Kalkstein et al., 2016](#)). As children and adolescents become exposed to increasingly diverse social models (e.g., children attending daycare rather than staying at home, adolescents reaching out to new social peers rather than sticking to one's familiar friends), they may be more likely to learn the self-control benefits of expanding regulatory scope. Thus, understanding the development of self-control may require a broad lens that tracks the development of abilities to modulate regulatory scope from childhood through adolescence (and perhaps across adulthood). More directly testing the implications of the regulatory scope model for the development of self-control is an important future direction.

Psychopathology

Self-control (or lack thereof) may be a transdiagnostic process in mental health disorders (e.g., [Bickel & Marsch, 2001](#); [Goschke, 2014](#); [Levin et al., 2018](#)). There is evidence, for example, that depression ([Pulcu et al., 2014](#)), social anxiety disorder ([Rounds et al., 2007](#)), trauma ([van den Berk-Clark et al., 2018](#)), pathological gambling ([Petry, 2001](#)), opioid abuse ([Kirby et al., 1999](#); [Madden et al., 1997](#)), and smoking ([Bickel et al., 1999](#); [Mitchell, 1999](#)) are all associated with steeper discount rates—the tendency to prefer smaller-immediate over larger-delayed rewards. The regulatory scope model suggests that these failures of self-control may result from disruptions in the ability to modulate regulatory scope effectively.

Consider autism, for example. [Frith and de Vignemont \(2005\)](#) have proposed that although autistic individuals are capable of mentalizing others from both egocentric (“you”) and allocentric

stances (“he/she/they”), they struggle to connect these perspectives into integrated representations. That is, although they can understand situations from contractive and expansive perspectives, they are unable to flexibly modulate between them and understand how they may be related. This difficulty may be due in part to deficits in their ability to integrate diverse information to create higher order meaning—what is referred to in the literature as central coherence ([Frith, 1989](#); [Frith & Happé, 1994](#)). Children with autism, for example, fail to use context to interpret sentences with ambiguous meanings ([Jolliffe & Baron-Cohen, 1999](#)). They also do not show typical decrements in face recognition when global configural processing of faces is disrupted by inverting the stimuli ([Hobson et al., 1988](#)). These and other findings would indicate that autistic individuals may have systematic decrements in their ability to engage in cognitive abstraction. From the perspective of the regulatory scope model, it is thus perhaps not surprising that there is some evidence that children with autism struggle with delay of gratification ([Faja & Dawson, 2015](#)). We might predict that autistic individuals may also evidence abnormalities in self-control challenges that involve other dimensions of distance—such as social dilemmas (e.g., [Hill et al., 2004](#)) or decision making under risk (e.g., [Wu et al., 2018](#)). It is important to note, however, that rather than reflect deficits or an inability to engage in abstraction, it may be the case that autistic individuals prefer not to engage in abstraction or that it is not their typical processing style ([Happé, 1999](#)). If so, failures of self-control by autistic individuals may reflect a preference for contractive regulatory scope when faced with temptation rather than a more general inability to modulate regulatory scope.

Connecting to Other Factors That Enhance Self-Control

To evaluate the potential of the regulatory scope model as an integrative framework more fully, more research is needed to link factors that promote versus impair self-control directly to regulatory scope. Factors that have been shown to promote self-control—such as mindfulness¹⁴ (e.g., [Brewer et al., 2011](#); [Friesen et al., 2012](#); [Papies et al., 2012](#)) and conflict-activated control readiness (e.g., [Kleiman et al., 2016](#); [Kleiman & Enisman, 2018](#))—should be associated with more expansive regulatory scope (e.g., [Chan & Wang, 2019](#)). Similarly, factors that impair self-control—such as stress (e.g., [Heatherton & Baumeister, 1991](#); [McKee et al., 2011](#); [Sinha, 2008](#)), sleep deprivation (e.g., [Hisler et al., 2019](#)), and resource scarcity ([Mullainathan & Shafir, 2013](#))—should be associated with contractive regulatory scope. Despite their disparate manifestations, the present approach suggests that tactics that promote the successful resolution of self-control dilemmas likely do so through the modulation of regulatory scope.

Beyond the Individual

Just as individuals must expand and contract their regulatory scope, so too must groups, organizations, institutions, and societies.

¹⁴ Given that mindfulness inductions often include a focus on concrete experiences (such as one's breathing), one might suggest that it would contract rather than expand regulatory scope. However, these inductions also direct one's attention to features of the situation that one normally does not attend to, thus altering one's experience of the here-and-now. This may broaden one's experience of the present and expand regulatory scope.

Exploring the implications of the broader collective's regulatory scope for individual and group behavior might be a fruitful direction for future research. Companies, for example, may differ to what extent they endeavor to meet the needs of local communities versus seek to expand and diversify their consumer bases. The expansiveness of companies' goals may influence how myopic and self-interested the decision making of company leaders and employees is. Similarly, institutions may adopt policies that are expansive ("We Are The World") versus contractive ("America First"); we might expect the former might promote more future-oriented decision making by both the institution and its constituent members. Exploring how the regulatory scope of broader groups may thus lead to novel insight into collective and individual self-control.

Conclusion

Despite the centrality of self-control to many of the most pressing issues that people face, research in this domain is plagued by conceptual confusion and the absence of truly integrative models. To advance cumulative science, we have proposed a novel conceptualization of self-control that synthesizes previous research and addresses the conceptual and theoretical challenges that face alternative models. In doing so, we hope to promote a common understanding of what self-control is—and what it is not. This novel approach offers important new insights and raises critical questions for future research to address. We encourage and look forward to this potentially transformative work.

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Received May 1, 2023

Revision received June 10, 2024

Accepted June 17, 2024 ■