


# The Dynamics of Self-Control Conflicts in Daily Life in Predicting Self-Control Success and Perceived Self-Regulatory Effectiveness

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People often face conflicts where they must choose between their long-term goals and tempting alternatives. Using an open-ended daily diary design, we investigated the characteristics of self-control conflicts in daily life, both replicating and extending past work. Specifically, we examined the factors that affected self-control conflict success, as well as how the nature and resolution of the conflict affected general perceptions of self-regulatory effectiveness. Self-control conflicts varied considerably within-persons including the domain of the conflict, the use of strategies, and whether they were successfully resolved. There was also variability in people's subjective perceptions of how pulled they felt towards the temptation and the opposing goal, as well as how difficult and important the overall decision was. Furthermore, these factors predicted whether a conflict was resolved successfully (i.e., in favor of the goal), with pull towards the temptation emerging as the strongest predictor. People were also more successful in resolving self-control conflicts when they reported using any type of self-regulatory strategy; no specific strategy emerged as most effective. On days when participants successfully resolved conflicts, they also felt more confident in their general ability to self-regulate. Overall, our findings largely conceptually replicate past work using an open-ended diary format, and suggest that factors influencing self-control conflict resolution are also linked to general feelings of self-regulatory effectiveness.

### Introduction

We are all familiar with self-control conflicts—feeling torn between an important goal and a tempting but counterproductive alternative. A comfy couch and TV beckon when we need to focus on work, the urge to deliver a biting retort can feel more compelling than our long-term relationship goals, and the opening-day sale at a new donut shop can threaten to derail our commitments to healthy eating. These conflicts arise often (Fujita, 2011; Hofmann et al., 2009), and each time they do, we must choose between giving into temptation or exercising self-control in service of a long-term goal. Although challenging, the capacity to exercise self-control is associated with numerous positive outcomes, from greater academic achievement and physical health to better financial and psychological well-being (Moffitt et al., 2011; Tangney et al., 2004). Given these benefits, research aimed at understanding and foster-

ing self-control is abundant (see Friese et al., 2017; Inzlicht et al., 2021, for reviews).

We build on this literature by investigating self-control conflicts in daily life (e.g., Baumeister et al., 2019; Hofmann, Baumeister, et al., 2012; Milyavskaya & Inzlicht, 2017), and in particular how these vary within, rather than between, persons. In an open-ended daily diary format, we prompted participants to describe and reflect on experienced conflicts over the course of four weeks. This method allowed us to explore how the same person's successful resolution of a self-control conflict, as well as their daily perceptions of self-regulatory effectiveness, vary as a function of the conflict's specific characteristics. More concretely, we aimed to address three overarching questions: 1) What are the characteristics of typical self-control conflicts in everyday life? 2) What characteristics predict successful conflict resolution? and 3) What characteristics and outcomes predict daily perceptions of general self-regulatory effective-

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ness? Addressing these questions allowed us to conceptually replicate several key findings from existing work on individual conflict characteristics. Importantly, it also extended prior work by examining a wider range of characteristics of the self-control conflict experience, analyzing them together rather than in isolation, and looking not only at what predicts successful conflict resolution, but how the nature of the conflict affects downstream perceptions of general self-regulatory effectiveness (see [Table 1](#) for an overview of the present research questions in relation to past work).

## Approaches to Studying Self-Control

Historically, most research on self-control conflicts has taken one of two approaches. The first approach creates self-control dilemmas in the lab (e.g., Baumeister et al., 1998; Mischel et al., 1972; Trope & Fishbach, 2000). These studies prioritize experimental control, but frequently do so—as is the case with many laboratory studies—at the expense of external validity. The second approach examines how between-person differences in a general capacity for self-control (e.g., trait self-control, high executive functioning; de Ridder et al., 2012; Tangney et al., 2004) predict self-control behaviors including, at times, those in the real world. Crucially, however, neither approach can shed light on the dynamic and contextual nature of exercising self-control (see Milyavskaya et al., 2019)—that is, they cannot provide insights into dynamic shifts in self-control behavior within people and between situations. These insights can only come from examining within-person variation in self-control experiences in people's daily lives, and in the past decade some scholars have begun to do just that (e.g., Baumeister et al., 2019; Hofmann, Baumeister, et al., 2012; Lopez et al., 2021; Milyavskaya & Inzlicht, 2017; Wenzel et al., 2022). This nascent literature highlights the value of moving beyond between-person differences toward state-level motives, perceptions, and situational contexts, which may play a larger role in how successfully people exert self-control (Hofmann, Baumeister, et al., 2012; Milyavskaya et al., 2015; Werner et al., 2016).

Prior studies that have employed this within-person approach have typically sampled experiences throughout the day, and begin by asking participants whether they are currently experiencing or have recently experienced a desire. If participants report a desire, they then indicate whether that desire is a temptation that conflicts with a personal goal—i.e., a self-control conflict (Friese & Hofmann, 2016; Hofmann, Baumeister, et al., 2012; Hofmann, Vohs, et al., 2012; Milyavskaya et al., 2020; Wenzel et al., 2020). One advantage of this approach is that it allows researchers to estimate the frequency of experienced desires throughout the day, and the proportion of these that generate conflicts. It also allows researchers to compare desires that generate conflicts to desires that do not (problematic versus unproblematic desires). As well, they capitalize on fresh memories, as participants usually report on experiences within the last 30 minutes.

However, this method also comes with certain trade-offs. Although some self-control conflicts do begin with a

clear alternative desire, others commonly begin with feeling repelled from the goal itself, or the temptation to simply not pursue it (Veilleux et al., 2018). People may be less likely to recognize such temptations of omission as desires, which are typically construed as “a visceral state of ‘wanting’... that directs a person toward immediate reward-related stimuli” (Kotabe & Hofmann, 2015, p. 619). If so, prior studies may systematically undersample the category of self-control conflicts that do not stem from a specific alternative desire. Additionally, because assessments take place multiple times per day, they are generally limited to closed-ended questions that participants can answer quickly and easily. The present study complements these prior approaches by making different trade-offs. We provided a broadly inclusive definition for self-control conflicts, and used a daily diary format where participants made ratings of at most a single conflict but described their experience in detail in an open-ended format.

## What Characteristics of the Self-Control Conflict Are Related to Self-Control Success?

Existing research shows that there is considerable variability in self-control conflicts experienced in daily life, with much of the variability occurring within-persons ([Table 1](#), Question Set 1). For example, conflicts vary in the strength or pull of the conflicting temptation (Hofmann, Baumeister, et al., 2012), as well as in the domain of the long-term goal (e.g., health, work; Bürgler et al., 2021; Hofmann, Vohs, et al., 2012; Veilleux et al., 2018; Wenzel et al., 2022). Furthermore, these temptations are resisted with variable success. Indeed, research estimates that people give in to their desires anywhere from 17–58% of the time when they try to resist (Hofmann, Baumeister, et al., 2012; Milyavskaya et al., 2020). Studies also reveal that people frequently use strategies to help them resist problematic desires (Lopez et al., 2021; Milyavskaya et al., 2020) and to persist in the face of difficult or unpleasant goal pursuit (Hennecke et al., 2019). In particular, cognitive change strategies that alter a person's perception of the conflict experience (e.g., focusing on positive or negative outcomes) tend to be some of the most frequently used. Our study provides an opportunity to conceptually replicate each of these findings. Based on this previous work, we predicted significant within-person variability in (a) how pulled people felt towards the temptation, (b) the domain of the conflicting goal, (c) the conflict outcome, and (d) use of a self-regulatory strategy.

Prior studies also reveal that various characteristics of the conflict experience, such as the strength and type of desire and the strategies that people use to resist, are associated with the likelihood of self-control success ([Table 1](#), Question Set 2). People are more likely to succumb to temptation when desires are experienced strongly (Friese & Hofmann, 2016; Hofmann, Baumeister, et al., 2012) and when faced with certain types of desires (e.g., desires to watch TV or surf the internet; Hofmann, Vohs, et al., 2012). Moreover, a wide range of self-regulatory strategies can be beneficial for resolving self-control conflicts, and using a strategy (vs. not) may be a more important predictor of success

**Table 1. Overview of Research Questions in Relation to Past Work**

Research Questions	Conceptual Replication	Extension	References
<b>1. What are the characteristics of typical self-control conflicts in daily life?</b>			
How strongly are people pulled towards the temptation and the goal?	✓	✓	Hofmann, Baumeister, et al. (2012)
How important and difficult are conflict decisions?		✓	
Are some goal domains (e.g., health, work) more likely to be associated with conflict?	✓	✓	Bürgler et al. (2021); Hofmann, Vohs, et al. (2012); Veilleux et al. (2018); Wenzel et al. (2022)
How often are conflicts resolved successfully?	✓	✓	Hofmann, Baumeister, et al. (2012); Milyavskaya et al. (2020)
How often do people use self-control strategies? Is there variability in the frequency of different types of strategies?	✓	✓	Hennecke et al. (2019); Milyavskaya et al. (2020)
<b>2. What characteristics of the conflict are related to self-control success (i.e., resisting temptation)?</b>			
Does pull towards the temptation and/or pull towards the goal predict success?	✓	✓	Hofmann, Baumeister, et al. (2012); Lopez et al. (2014)
Does the decision's importance and/or difficulty predict success?		✓	
Are conflicts in certain goal domains more likely to be resolved successfully?		✓	
Does using a strategy predict success? Does using any specific strategy predict success?	✓		Hennecke et al. (2019); Milyavskaya et al. (2020); Wenzel et al. (2016)
<b>3. How do the conflict experience and resolution relate to perceptions of self-regulatory effectiveness?</b>			
Is the conflict outcome associated with self-regulatory effectiveness?		✓	
Is pull towards the temptation associated with self-regulatory effectiveness?		✓	
Is pull towards the goal associated with self-regulatory effectiveness?		✓	
Is the importance of the conflict decision associated with self-regulatory effectiveness?		✓	
Is the difficulty of the conflict decision associated with self-regulatory effectiveness?		✓	
Is the conflict goal domain associated with self-regulatory effectiveness?		✓	
Is strategy use associated with self-regulatory effectiveness?		✓	

than the specific type of strategy (Milyavskaya et al., 2020; Williamson & Wilkowski, 2020). Our study provides an opportunity to conceptually replicate and extend these findings. Based on prior work, we predicted that people would be more likely to successfully resolve self-control conflicts when (a) they felt less pulled towards the temptation, and (b) they employed any kind of self-regulatory strategy. We also predicted that self-control success would vary based on the type of goal (e.g., health and fitness, professional/academic, social), though we did not have predictions about which particular goal domains would be most strongly associated with success.

In addition, our study extends previous work by examining other factors that could predict goal success (e.g., feeling pulled towards the goal, and the difficulty and importance of the conflict decision). Prior research has tended to focus on variability in the strength or pull of the tempting desire (e.g., Hofmann, Vohs, et al., 2012; Milyavskaya et

al., 2020), while the strength or pull of the competing goal has received relatively little attention. Yet work examining self-regulation more broadly has shown that the extent to which a goal is prioritized is associated with goal progress (Monzani et al., 2015). Indeed, the experienced conflict is jointly influenced by the strength of both of the competing desire-goal motives (Fujita, 2011; Kotabe & Hofmann, 2015). Furthermore, as outlined by integrative self-control theory, desires and higher-order goals represent two qualitatively different psychological forces with different characteristics and determinants, and both can vary in their strength (Kotabe & Hofmann, 2015). While some prior work has examined conflict strength (e.g., Hofmann, Vohs, et al., 2012)—which presumably is influenced both by pull towards the goal and pull towards the temptation—there is value in assessing the strength of these motives separately. We predicted that in the context of a self-control conflict,

pull towards the higher-order goal would be associated with choosing the long-term goal over the temptation.

In addition, while previous research has assessed related variables that examine specific aspects of the conflict, like the importance of the higher-order goal and its degree of conflict with a desire, we go beyond this work to examine people's holistic evaluation of the decision itself. While decision difficulty and importance are certainly influenced by those factors (Hofmann, Vohs, et al., 2012), they can also be influenced by additional factors. For instance, decision difficulty may be influenced by an individual's perceived self-regulatory resources at the time (Baumeister et al., 2019) or whether individuals perceive motivations as complementary or competing (Fishbach & Zhang, 2008). Similarly, decision importance is influenced not only by higher-order goal importance, but also perceived implications of a given conflict decision for future goal attainment (Myrseth et al., 2009). Research suggests that people deliberate more on decisions that they view as important (Newell et al., 2009), suggesting that the importance of a self-control conflict decision may be associated with success. In contrast, conflicts that are higher in decision difficulty—where response options are highly conflicted and self-regulatory resources are taxed (Baumeister et al., 2019; Hofmann, Baumeister, et al., 2012)—may be more likely to end in self-control failure.

Finally, prior studies have tended to examine specific predictors of self-control success in isolation, without considering their relative importance or the interplay among them. In contrast, we compared multiple characteristics of the conflict simultaneously to examine which variables may be most strongly or uniquely predictive of success. For example, research suggests that both the pull towards the temptation and the pull towards the goal are likely to have important implications for self-control success (Kotabe & Hofmann, 2015); by assessing both of these, we are able to examine the relative strength of their associations with the conflict outcome. Furthermore, we compared all the variables that were assessed in the present study simultaneously (e.g., desire and goal strength, strategy use, goal domain) to see which effects were unique and independent of overlap between conflict characteristics. We also tested for potential interactions. For example, is it the pull towards the desire, the pull towards the goal, or their interaction (e.g., pull toward the goal only when pull toward the desire is low) that is most strongly related to self-control success? Understanding these dynamics is key to developing more effective self-control interventions.

### **How Do the Conflict Experience and Resolution Relate to Self-Regulatory Effectiveness?**

Most prior investigations of self-control conflicts in daily life have been primarily concerned with predicting the proximal conflict outcome (e.g., Hofmann, Baumeister, et al., 2012): Was the self-control conflict resolved successfully? As a result, we know little about how the experience of a self-control conflict, or self-control success and failure, are related to people's perceptions of their general ability to effectively self-regulate. How people evaluate their self-control performance and the self-conscious emotions asso-

ciated with it are likely to have important consequences. For example, one prior study has shown that feeling proud following self-control success predicts success in subsequent self-control behaviors (Hofmann & Fisher, 2012). Our approach extends previous work by assessing whether different kinds of self-control conflicts—not only successful versus unsuccessful ones, but also conflicts that feel particularly difficult or important, for example—predict daily perceptions of general self-regulatory effectiveness (Table 1, Question Set 3). In doing so, we can examine whether the same conflict characteristics that predict whether a conflict is resolved successfully also predict how people feel about their capacity to self-regulate more broadly.

### **The Present Study**

In the present study, we investigated self-control conflicts using a month-long, open-ended daily diary. This approach allowed us to examine within-person variability in the kinds of self-control conflicts that people experience in their daily lives and how this variability is associated with successful conflict resolution and daily perceptions of self-regulatory effectiveness. Using both observer-coded reflections and self-reported questionnaires, we addressed three overarching questions: 1) What are the characteristics of typical self-control conflicts in everyday life? 2) What characteristics predict successful conflict resolution? and 3) What characteristics predict daily perceptions of general self-regulatory effectiveness?

### **Method**

The present study was part of a large-scale research project exploring emotion, meta-cognition, and self-regulation in daily life (described in Dorfman et al., 2021; Grossmann et al., 2021). To address our research questions, we analyzed data from the month-long daily diary component of this project. Below, we describe only measures relevant to our investigation; full project documentation including all measures and a timeline of all components is available on the Open Science Framework (OSF; <https://osf.io/gb7js/>). The project was reviewed and received ethics clearance from a University of Waterloo research ethics board (ORE # 31889). We pre-registered our analysis plan for the present study on OSF (<https://osf.io/jver3>) after the data had been collected, but before looking at it or performing any statistical analyses.

### **Sample and Exclusions**

The sample size was determined based primarily on considerations for other variables examined in this larger project (details are discussed in Grossmann et al., 2021) and resource constraints. However, we aimed to recruit at least 100 people for the daily diary. We recruited 290 participants from a local university in southwestern Ontario to participate in a laboratory session for “research on social experiences and personal goals in daily life.” After this initial laboratory session, we offered participants the opportunity to earn up to \$110 by partaking in a subsequent month-



long diary study (only a small number,  $n = 67$ , knew about this opportunity in advance). Of the eligible group of 290, 164 enrolled in the month-long daily diary, and 153 reported at least one self-control conflict during the 4-week period. Following our preregistered protocol, we examined their open-ended conflict descriptions and retained only self-control conflicts that participants described as opposing a higher-order goal and a lower-order temptation (i.e., as a vertical conflict; Scholer, 2014). Thus, we excluded any conflicts that participants described as deciding between two opposing higher-order goals or deciding between two opposing lower-level desires (see SOM for more details on data cleaning and exclusion criteria).

This left 482 vertical self-control conflicts that were reported by 145 people ( $M_{age} = 21.65$ ,  $SD_{age} = 5.83$ ; 107 women, 29 men, 1 other, 8 not reported; 35% White, 33% Asian, 11% East Indian, 6% Black, 5% Middle Eastern, 3% Mixed Race, < 1% Hispanic, 6% did not self-identify). Three of these participants were not university students and were instead members of the local community; all results remained the same if we removed these individuals and analyzed only the student sample. On average, participants completed 17.30 ( $SD = 7.78$ , range = 1-28) diary entries over the 4-week period and reported 3.32 ( $SD = 2.39$ , range = 1-14) self-control conflicts. Thus, on average, participants reported experiencing a conflict approximately 19% of the time that they completed a daily entry. If we include those participants who reported no self-control conflicts—i.e., if we compute these statistics across the sample of 164—the average was 2.94 ( $SD = 2.49$ , range = 0-14). These averages almost certainly underestimate the number of conflicts participants experienced. The larger study examined multiple types of daily experiences, and people may have reported primarily event(s) that were highly salient to them at that time. Computing these averages was nonetheless informative in helping us estimate power. Simulation studies suggest that parameters closely approximating the present study—150 people (Level 2) with three measurement occasions (Level 1) and a medium ICC (.30)—would provide at least 80% power to detect Level 1 fixed effects as small as  $\gamma_{10, std} = .15$  (Arend & Schäfer, 2019). Thus, the present study should be well powered to detect small-to-medium sized effects.

## Procedure and Measures

Participants received daily surveys by email for four weeks. The surveys began with an event screener that asked participants to indicate whether they had experienced each of six different events that day. One of these was a self-control decisional conflict, which we described as “facing a choice between doing something that can help you reach an important goal, and doing something else that would be more fun but is unrelated to that particular goal.” Prior to the beginning of the diary, in the initial laboratory session, we trained participants to identify situations that constituted typical self-control conflicts. On days when participants reported a self-control conflict, the survey prompted them to answer three open-ended questions along with a series of self-report items (described below). If participants

had not experienced a self-control conflict, they completed an alternative set of measures, either about one of the other events in the screener if they had experienced one of them, or about their general experiences on that day. If participants reported multiple events on a given day (e.g., a self-control conflict and another event in the screener), they answered follow-up questions about each.

## Coding of Open-Ended Descriptions

The three open-ended questions asked participants to describe a) the two options that constituted the conflict, b) the conflict experience (e.g., how they felt about the options, their goals and themselves), and c) the choice they made (i.e., the conflict outcome). Two raters independently coded responses on the following four dimensions, with disagreement resolved by a third knowledgeable rater (see <https://osf.io/8y3fr/> for complete coding guidelines).

**Goal Domain.** Coders sorted the goal into one of three possible goal domains: professional/academic, health and fitness, or other (Cohen's  $Kappa = .91$ ). We originally planned to include two other domains (social and personal development), but these were respectively too infrequent (1.66%) or too subjective to reliably code in participants' self-control conflicts, so we subsumed them into the “other” category. The “other” goal category therefore included social and personal development goals, as well as various other goal domains with some of the most common being related to finances (e.g., saving money), fidelity, and leisure or hobbies. It is possible that aspects of the overall procedure unrelated to the current purposes may have artificially reduced the frequency of conflicts in the social domain; see the Discussion for details.

**Outcome.** Coders noted whether people successfully exercised self-control, coding a choice in favor of the goal as a success, and one in favor of the temptation as a failure (Cohen's  $Kappa = .88$ ). There were eight conflict choices (1.66%) whose descriptions were either too brief or too ambiguous to code (e.g., the participant did not describe their choice or indicated that they chose a third option).

**Strategies.** Finally, coders noted any strategies that participants described using (successfully or not) to help them resolve the self-control conflict. Based on past research examining self-regulatory strategies used in everyday life (Hennecke et al., 2019; Hennecke & Bürgler, 2020), we coded for use of 19 strategies, which we further categorized based on the strategy types outlined by Hennecke and colleagues (2019): *situation modification* (changing the activity or environment, reducing distractions, seeking social support, taking a substance or task enrichment), *attentional deployment* (adopting a process focus or distracting oneself), *cognitive change* (anticipating self-reward, focusing on positive or negative consequences, goal setting, monitoring goal progress, planning/scheduling, reappraisal, self-talk or thinking of the near finish), *response modulation* (suppressing the impulse to quit), and *emotion regulation*. Several strategies were not described by any participant, and two additional strategies emerged from participant descriptions: reminding oneself of the goal (which we assigned to the cognitive change type) and compromising

(which we retained as its own type). In 34% of the conflicts where coders identified strategy use, participants described multiple strategies. In these cases, coders identified one as the primary strategy, such that each conflict had only a single strategy code (Cohen's  $Kappa = .82$ ). We also transformed these codes into a dichotomous variable that simply indicated whether participants used any strategy versus none<sup>1</sup>.

We also coded for emotional language (frequency of positive and negative emotion words) in the conflict description. We originally conceived of these variables as proxies for positive or negative mindsets that might predict success, but upon reading people's descriptions we realized people most often used emotional language in direct reference to having succeeded or failed (Wenzel et al., 2016). Thus, the significant relationships we observed in our pre-registered analyses (see details in the SOM) were difficult to interpret even speculatively: Rather than one's initial framing of the conflict in positive or negative terms influencing success, our impression was that people were simply describing success as positive and failure as negative.

### Self-Report Measures

**Pull Towards Temptation and Pull Towards Goal.** Participants rated how much they were pulled toward each of their choice options, piped back to them in their own words, on a scale ranging from 1 (*not at all*) to 7 (*extremely*). Coders noted which of these options was the goal (e.g., “stay true to my diet,” “go to the gym,” “study for my midterms”) and which was the temptation (e.g., “eat a cookie,” “stay in bed,” “just relax all day and do nothing”) (Cohen's  $Kappa = .94$ ), to determine which rating corresponded to “goal pull” and which was their “temptation pull.”

**Decision Difficulty.** Participants rated “How difficult was this choice?” using a scale ranging from 1 (*not at all difficult*) to 7 (*extremely difficult*).

**Decision Importance.** Participants rated “How important was this choice?” using a scale ranging from 1 (*not at all important*) to 7 (*extremely important*).

**Perceived Self-Regulatory Effectiveness.** Participants evaluated their perceived self-regulatory effectiveness by rating their agreement with two statements (Spearman-Brown coefficient = .86): “Today I was generally effective in pursuing my goals,” and “Today I was off-track in pursuing my goals” (reverse scored), using a scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*). We calculated a mean score with higher scores reflecting greater perceived effectiveness.

**General Goal Progress.** Finally, participants rated their progress in four goal domains: professional/academic, health and fitness, social life, and personal development. They rated their agreement with the statement, “Today I made progress on my [academic or professional/health

and fitness/social life/personal development] goal,” for each goal domain on a scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*). We calculated a mean score with higher scores reflecting greater overall goal progress that day.

### Analytic Approach

As outlined in our pre-registered analysis plan (<https://osf.io/jver3>), we analyzed the data using mixed models nesting responses (Level 1) within participants (Level 2). All continuous Level 1 predictors were person-mean centered prior to analysis. We focused on within-person effects (Level 1) as previous research estimates that approximately 85-90% of the variance in the attainment of personal goals is at the within-person level (Milyavskaya et al., 2015; Werner et al., 2016). Although it was not part of our pre-registered plan, we also present analyses using person-level means (i.e., between-person effects) for models with continuous predictors in the SOM for the interested reader. Including the person-level means did not meaningfully change any of the Level-1 estimates and the between-person effects largely mirrored the pattern of the within-person ones.

We used the *lmer* function to test linear mixed models for continuous outcomes and the *glmer* function to test generalized mixed models for binomial outcomes from the *lme4* package in *R* (Bates et al., 2015), in both cases including random intercepts and fixed slopes. We also tested models with random slopes; this approach generally did not improve model fit and, in some cases, caused issues with model convergence (analyses presented in SOM). We estimated the relative contribution of the different predictors to variation in the outcomes by computing the semi-partial  $R^2$  using the *partR2* package (Stoffel et al., 2021). These semi-partial coefficients of determination estimate the amount of variance that can be uniquely accounted for by significant fixed effects in a multi-level model. *R* code for all analyses is available at <https://osf.io/8y3fr/>. Throughout the results section, square bracketed values indicate 95% confidence intervals unless otherwise specified.

Also following our pre-registered analysis plan, we examined whether any predictors or outcomes were correlated with three potential covariates: age, gender, and condition assignment in an experiment that was embedded in the diary procedure but unrelated to the present investigation (self-distanced vs. self-immersed reflection described in Grossmann et al., 2021; see SOM for results). Of these three, only age and gender had any significant associations with predictor or outcome variables. As per our plan, we therefore controlled for these two variables in all models. Models without these covariates produce similar results; we report them in full in the SOM and note in the main text any instances where results differ. We also report additional pre-registered analyses in the SOM that examined variables that ultimately were not informative for our purposes here.

<sup>1</sup> In addition, we conducted exploratory analyses to examine whether using multiple strategies led to different patterns of results than coding strategy use in terms of one vs. none; however, these analyses were parallel to the pre-registered analyses reported in the paper.

## Results

### Question Set 1: Characteristics and Variability of Self-Control Conflicts

We first calculated the intraclass correlation coefficients (ICC) for all continuous variables, which indicate the proportion of variability that can be attributed to differences between people. ICCs approaching 1.00 for a given variable indicate that there are reliable differences between people, but that conversely each person's scores on that repeatedly sampled variable show little variance. The ICCs ranged from .25 to .34, indicating that only a quarter to a third of the variance in self-control conflict ratings could be attributed to between-person differences. Consistent with past work (e.g., Milyavskaya et al., 2019), the remaining majority of the variance (66-75%) came from differences in how each individual person responded to different conflicts. Notably, while both pull towards the temptation and pull towards the goal varied more within than between persons, there was greater within-person variability in pull towards the goal (ICC = .25) relative to pull towards the temptation (ICC = .33), which was more consistent across conflicts. Descriptive statistics for all variables are shown in [Table 2](#) and correlations are presented in the SOM.

#### *How Strongly Are People Pulled Towards the Temptation and the Goal?*

When faced with a self-control conflict, people tended to report feeling strong pull toward the temptation and only moderate pull toward the goal. On average, people felt more pulled towards the temptation than pulled towards the goal,  $M_{diff} = 1.30$  [1.06, 1.54],  $t(403) = 10.46$ ,  $p < .001$ .

#### *How Important and Difficult Are Conflict Decisions?*

Decision difficulty did not significantly differ from the mid-point of the scale (4 on a 7-point scale),  $M = 3.99$  [3.85, 4.12],  $t(472) = -0.18$ ,  $p = .854$ , and decision importance was above the mid-point of the scale,  $M = 4.62$  [4.46, 4.78],  $t(415) = 7.76$ ,  $p < .001$ , suggesting that people perceived the conflict decisions as consequential.

#### *Are Some Goal Domains More Likely to Be Associated with Conflict?*

There was significant variability in the frequency of self-control conflicts involving different goal domains,  $\chi^2(2) = 127.59$ ,  $p < .001$ . The two domains we specifically coded for, health and fitness goals and professional/academic goals, made up most of the reported conflicts. Of every ten conflicts reported, about five related to health and fitness goals (50.62%), four related to professional/academic goals (39.42%), and one related to goals coded in the "other" category (9.96%; social, financial, personal development goals, etc.).

### *How Often Are Conflicts Resolved Successfully?*

Approximately half of all conflicts (50.63%) were resolved successfully—i.e., in favor of the long-term goal. This is in line with past research which estimates that people successfully resist anywhere from 17 to 58% of the desires they try to resist, falling closer to the upper end of this range (Hofmann, Baumeister, et al., 2012; Milyavskaya et al., 2020).

### *How Often Do People Use Self-Control Strategies?*

Participants described using a strategy when resolving a self-control conflict 46.68% of the time, and there was significant variability in the strategies that people described,  $\chi^2(15) = 405.12$ ,  $p < .001$ . [Table 2](#) shows rates of use for each strategy type. Each of the strategies within the cognitive change type (e.g., focusing on positive or negative consequences and reminding oneself of the goal) was used relatively frequently, together accounting for over 80% of all strategy use. Other strategies were infrequent, in most cases accounting for less than 1% of all strategies participants used (see full breakdown of rates by each individual strategy in the SOM).

### Question Set 2: What Predicts Self-Control Success?

Our next set of questions examined the conflict characteristics that tended to distinguish those that people resolved successfully by resisting temptation from those that they resolved unsuccessfully by succumbing to it. To answer these questions, we conducted a series of pre-registered generalized mixed models for binomial (logit) distributions, predicting self-control success (1 = yes / 0 = no) from various sets of conflict characteristics.

#### *Does Pull Towards the Temptation and/or Pull Towards the Goal Predict Success?*

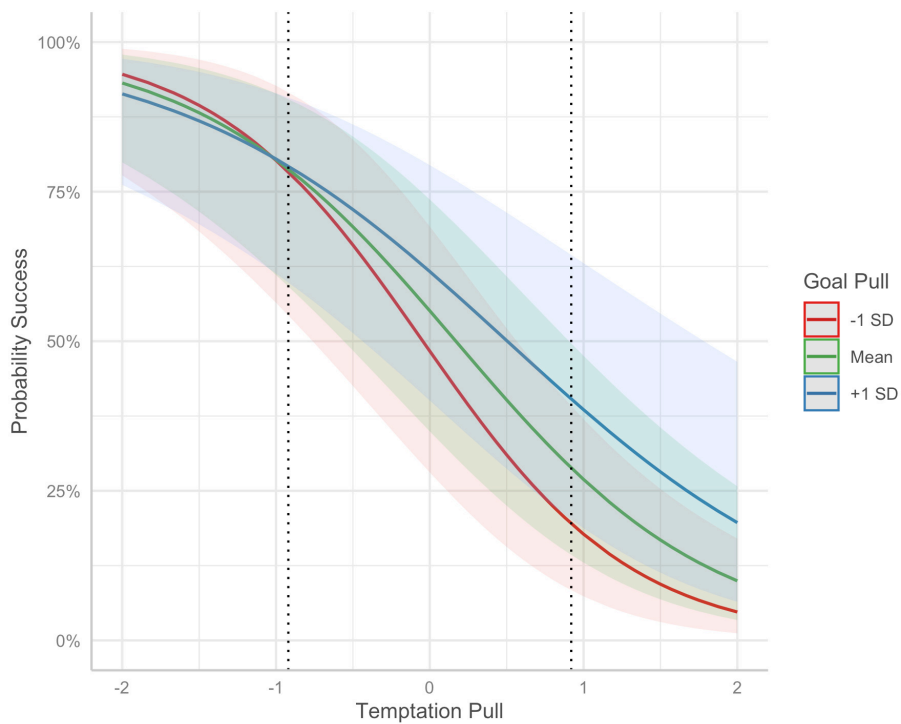
Our first model examined pull towards the temptation, pull towards the goal and their interaction ([Table 3](#), Model 1; see [Figure 1](#)). Consistent with previous studies (Frieze & Hofmann, 2016; Hofmann, Baumeister, et al., 2012), people were less likely to resolve their conflicts successfully when they felt more pulled towards the temptation. Greater goal pull also tended to be associated with self-control success, albeit this association was much weaker and not significant (though it was significant without the age and gender covariates; see SOM). The two pulls did not significantly interact to predict success.

#### *Does Decision Difficulty or Importance Predict Success?*

Our second model examined decision difficulty, decision importance and their interaction ([Table 3](#), Model 2). When people experienced conflicts that they felt were more important than their average conflict, they were more likely to resolve them successfully. There were no effects involving decision difficulty.

**Table 2. Descriptive Statistics for Continuous and Categorical Variables**

Continuous Variables			
	M	SD	ICC
Pull Towards Temptation	5.41	1.38	.33
Pull Towards Goal	4.11	1.65	.25
Decision Difficulty	3.99	1.49	.30
Decision Importance	4.62	1.64	.34
Perceived Effectiveness	4.21	1.65	.30
Categorical Variables			
	Category		% Conflicts
Goal Domain	Health and fitness		50.62
	Professional/academic		39.42
	Other		9.96
Outcome	Success		50.63
Strategy Use	No strategy		53.32
	Cognitive change		38.80
	Compromising		5.39
	Situation modification		0.83
	Attentional deployment		0.83
	Emotion regulation		0.62
	Response modulation		0.21



**Figure 1. Predicted Probabilities of Self-control Success by Pull Towards the Temptation and Pull Towards the Goal**

Note. Colored bands indicate 95% confidence intervals. Dotted lines indicate +/- 1 standard deviation of pull towards the temptation.



**Table 3. Summary of Models Predicting Self-Control Success**

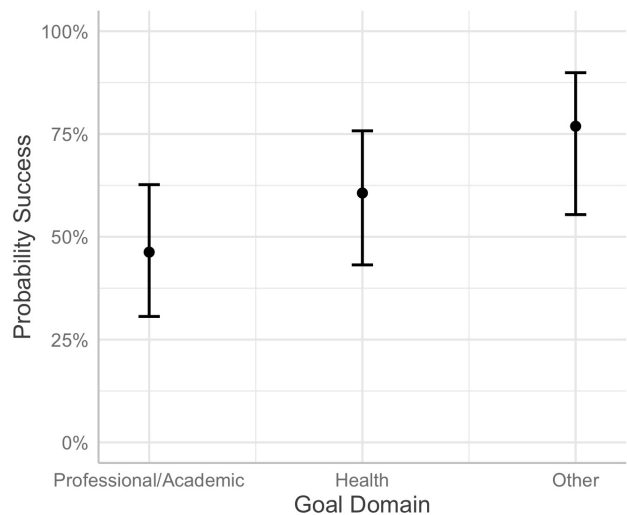
Model	Predictor	B	SE	z value	p value	OR [95% CI]
1	Temptation pull	-1.20	0.22	-5.52	< .001	0.30 [0.20, 0.46]
	Goal pull	0.24	0.13	1.83	.067	1.27 [0.98, 1.63]
	Temptation pull x Goal pull	0.23	0.14	1.60	.110	1.26 [0.95, 1.66]
2	Decision difficulty	0.002	0.12	0.02	.987	1.00 [0.80, 1.26]
	Decision importance	0.27	0.11	2.43	.015	1.30 [1.05, 1.61]
	Difficulty x Importance	-0.14	0.10	-1.41	.158	0.87 [0.72, 1.05]
3	Health goal	-0.77	0.42	-1.85	.065	0.46 [0.20, 1.05]
	Professional/academic goal	-1.35	0.44	-3.05	.002	0.26 [0.11, 0.62]
4	Compromising	1.24	0.54	2.30	.022	3.44 [1.20, 9.91]
	Reminding oneself of the goal	1.72	0.44	3.90	< .001	5.57 [2.35, 13.20]
	Focusing on negative consequences	1.92	0.40	4.81	< .001	6.81 [3.12, 14.90]
	Focusing on positive consequences	2.09	0.44	4.77	< .001	8.10 [3.43, 19.10]
	Monitoring goal progress	2.09	0.60	3.49	< .001	8.10 [2.50, 26.20]
5	Temptation pull	-1.12	0.22	-5.12	< .001	0.33 [0.21, 0.50]
	Goal pull	0.19	0.15	1.30	.193	1.21 [0.91, 1.61]
	Decision difficulty	0.15	0.15	0.97	.333	1.16 [0.86, 1.57]
	Decision importance	0.23	0.15	1.59	.113	1.26 [0.95, 1.68]
	Health goal	-0.91	0.62	-1.45	.146	0.40 [0.12, 1.37]
	Professional/academic goal	-1.60	0.68	-2.37	.018	0.20 [0.05, 0.76]
	Strategy used	2.02	0.35	5.70	< .001	7.53 [3.76, 15.10]

**Are Conflicts in Certain Goal Domains More Likely to be Resolved Successfully?**

Our third model examined the conflict goal domain (Table 3, Model 3; see Figure 2). We dummy coded this variable to compare the odds of success across the different goal domains to one another. Conflicts involving a professional/academic goal seemed the most challenging to resolve successfully. Professional/academic goal conflicts were less likely to be resolved successfully compared to “other” goals, and compared to health and fitness goals,  $b = -0.58$ ,  $SE = 0.26$ ,  $z = -2.23$ ,  $p = .026$ ,  $OR = 0.56$  [0.34, 0.93]. We also observed a non-significant trend suggesting that health and fitness goal conflicts were less likely to be resolved successfully compared to “other” goal conflicts.

**Does Using a Strategy (or Any Specific Strategy) Predict Success?**

Our fourth model examined strategy use. In a first preliminary model using only the dichotomous strategy vs. no strategy predictor, we found that people were much more likely to resolve conflicts successfully when they used a strategy compared to when they used none,  $b = 1.82$ ,  $SE =$



**Figure 2. Predicted Probabilities of Self-Control Success by Goal Domain**

Note. Error bars indicate 95% confidence intervals.

0.26,  $z = 7.04$ ,  $p < .001$ , OR = 6.18 [3.72, 10.30].<sup>2</sup> In a second model, we included any individual strategies that accounted for > 5% of the cases when a strategy was used. By this criterion we included the following: compromising, reminding oneself of the goal, focusing on negative consequences, focusing on positive consequences, and monitoring goal progress. Each of the five strategies significantly and independently predicted success compared to not using a strategy (Table 3, Model 4). None of the five strategies was more likely to predict success relative to any of the other four strategies (see SOM for details).

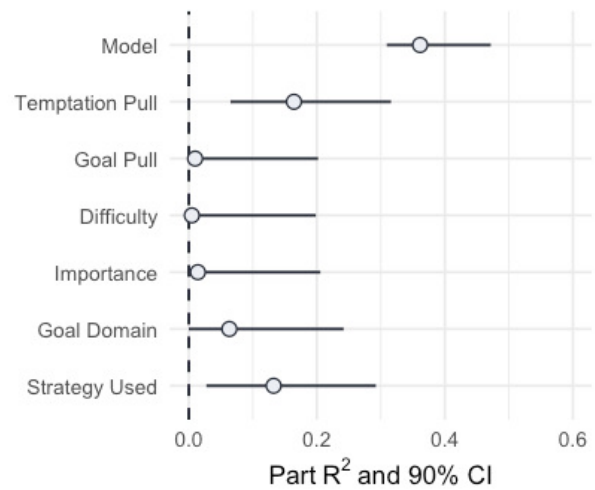
Since cognitive change strategies were the most prevalent type of strategy participants used, we also fit an exploratory model where we grouped the strategy use predictor into three categories: not using a strategy, using a cognitive change strategy, and using any other type of strategy (dummy coded). Both using a cognitive change strategy,  $b = 1.93$ ,  $SE = 0.29$ ,  $z = 6.71$ ,  $p < .001$ , OR = 6.91 [3.93, 12.20], and using any other type of strategy,  $b = 1.24$ ,  $SE = 0.54$ ,  $z = 2.30$ ,  $p = .022$ , OR = 3.44 [1.20, 9.89], predicted a greater likelihood of success relative to not using a strategy. The likelihood of successfully resolving a self-control conflict did not significantly differ when people used a cognitive change strategy compared to any other type of strategy,  $b = 0.70$ ,  $SE = 0.56$ ,  $z = 1.24$ ,  $p = .215$ , OR = 2.01 [0.67, 6.03].

### Which Predictors Are Most Strongly and Uniquely Related to Success?

Our fifth and final model examined all predictors (excluding interactions) from the preceding models simultaneously to determine which had unique effects (Table 3, Model 5). The marginal  $R^2$  for the model, which indicates the total variance explained by the fixed effects, was 0.36, 90% CI [0.31, 0.47]. The strongest predictors of self-control success were feeling less pulled towards the temptation and using a strategy (see Figure 3), which individually explained 16%, 90% CI [7%, 32%] and 13%, 90% CI [3%, 29%] of the variance, respectively. The same pattern appeared in a supplemental model that included only predictors that had shown significant associations in Models 1 through 4 (see SOM).

### Question Set 3: What Predicts Daily Perceptions of Self-Regulatory Effectiveness?

Our third set of questions pertained to the relationship between self-control conflict characteristics, conflict outcome, and general perceptions of self-regulatory effectiveness.



**Figure 3. Unique Variance Explained by Predictors of Self-Control Success**

Note. Model refers to overall model fit (i.e., the  $R^2$  for all predictors combined).

### Is Successfully Resolving a Self-Control Conflict Associated with Perceived Effectiveness?

Our first model examined whether perceptions of self-regulatory effectiveness differed on days when people experienced no self-control conflict vs. a self-control success vs. a self-control failure (dummy coded; Table 4, Model 1). Compared to days when participants reported no self-control conflicts, they felt more effective on days when they successfully exercised self-control and less effective on days when they gave in to temptation. On days when a conflict was experienced, successfully exercising self-control (vs. giving in to temptation) predicted greater perceived self-regulatory effectiveness,  $b = 1.73$ ,  $SE = 0.13$ ,  $t(423.73) = 13.64$ ,  $p < .001$ ,  $\beta = 0.53$  [0.45, 0.60], and this effect remained significant even after controlling for overall goal progress on that day,  $b = 1.40$ ,  $SE = 0.12$ ,  $t(418.21) = 11.48$ ,  $p < .001$ ,  $\beta = 0.43$  [0.36, 0.50].

### Are Different Kinds of Conflict Experiences Associated with Perceived Effectiveness?

Next, we examined whether any conflict characteristics were related to perceived self-regulatory effectiveness. We tested the same series of mixed models as in question set 2 but predicting perceived self-regulatory effectiveness rather than the conflict outcome (Table 4, Models 2-5). People felt more effective when they experienced a conflict where they felt less pulled towards the temptation and more pulled towards the goal; however, the two pulls did not interact with one another. People also felt less effective

<sup>2</sup> In additional exploratory analyses, we examined whether strategy use was associated with the length of participants' open ended responses since it is possible that coders were more likely to identify strategy use when participants wrote longer, more detailed descriptions. Indeed, we found that the total number of characters participants wrote (standardized) was significantly associated with strategy use,  $b = 0.77$ ,  $SE = 0.14$ ,  $z = 5.36$ ,  $p < .001$ , OR = 2.17 [1.63, 2.88]. Nevertheless, strategy use remained a strong predictor of self-control success even when controlling for characters written,  $b = 2.01$ ,  $SE = 0.27$ ,  $z = 7.55$ ,  $p < .001$ , OR = 7.53 [4.46, 12.70].

**Table 4. Summary of Models Predicting Perceived Self-Regulatory Effectiveness**

Model	Predictor	B	SE	t value	p value	$\beta$ [95% CI]
1	Failure	-0.95	0.09	10.20	< .001	-0.18 [-0.22, -0.15]
	Success	0.77	0.10	8.02	< .001	0.14 [0.11, 0.18]
2	Temptation pull	-0.24	0.08	2.84	.005	-0.13 [-0.23, -0.04]
	Goal pull	0.20	0.07	3.04	.003	0.14 [0.05, 0.23]
	Temptation pull x Goal pull	0.02	0.07	0.34	.737	0.02 [-0.08, 0.11]
3	Decision difficulty	-0.02	0.08	0.32	.748	-0.01 [-0.11, 0.08]
	Decision importance	0.07	0.07	1.01	.312	0.05 [-0.04, 0.14]
	Difficulty x Importance	-0.03	0.06	0.50	.616	-0.03 [-0.12, 0.07]
4	Health and fitness goal	0.18	0.08	2.35	.019	0.19 [0.03, 0.35]
	Professional/Academic goal	-0.36	0.10	3.65	< .001	-0.30 [-0.46, -0.14]
5	Compromising	0.08	0.34	0.25	.804	0.01 [-0.08, 0.10]
	Reminding oneself of the goal	0.49	0.26	1.89	.060	0.09 [0.00, 0.18]
	Focusing on negative consequences	0.58	0.23	2.47	.014	0.12 [0.02, 0.21]
	Focusing on positive consequences	0.94	0.26	3.69	< .001	0.18 [0.08, 0.27]
	Monitoring goal progress	0.57	0.35	1.63	.104	0.08 [-0.02, 0.17]
6	Outcome	1.68	0.16	10.21	< .001	0.52 [0.42, 0.62]
	Pull towards temptation	0.03	0.08	0.34	.733	0.02 [-0.07, 0.10]
	Pull towards goal	0.15	0.06	2.41	.017	0.10 [0.02, 0.19]
	Conflict difficulty	-0.04	0.07	0.57	.572	-0.02 [-0.10, 0.06]
	Conflict importance	-0.04	0.06	0.65	.515	-0.03 [-0.11, 0.06]
	Health and fitness goal	0.08	0.07	1.11	.268	0.09 [-0.07, 0.24]
	Professional/Academic goal	-0.13	0.09	1.37	.172	-0.11 [-0.27, 0.05]
	Strategy used	-0.17	0.15	1.11	.269	-0.05 [-0.14, 0.04]

*Note.* In our pre-registered analysis plan we included the conflict outcome and interactions with outcome as predictors of self-regulatory effectiveness. We found only one significant interaction: Success was most strongly related to feeling effective when conflicts were very important (one SD above the mean),  $b = 1.09$  [0.90, 1.28],  $SE = 0.10$ ,  $t(347.80) = 11.08$ ,  $p < .001$ ; success still mattered, but less so, when conflicts were less important (one SD below the mean),  $b = 0.64$  [0.44, 0.83],  $SE = 0.10$ ,  $t(353.42) = 6.43$ ,  $p < .001$ . Therefore, differing from our pre-registered plan, Models 2-5 did not include the conflict outcome and interactions with outcome (see SOM for details).

on days when they experienced a conflict involving a professional/academic goal compared to a conflict involving either a health and fitness goal,  $b = 0.54$ ,  $SE = 0.17$ ,  $t(423.86) = 3.21$ ,  $p = .001$ ,  $\beta = 0.16$  [0.06, 0.26], or an “other” goal,  $b = 0.84$ ,  $SE = 0.27$ ,  $t(425.25) = 3.15$ ,  $p = .002$ ,  $\beta = 0.15$  [0.06, 0.25]. Finally, people felt more effective when they reported using a self-regulatory strategy to resolve their conflict (vs. not using one),  $b = 0.60$ ,  $SE = 0.15$ ,  $t(432.30) = 3.98$ ,  $p < .001$ ,  $\beta = 0.18$  [0.09, 0.27]. However, when we examined the strategies individually (again including only those that accounted for > 5% of the cases when a strategy was used), we found that only focusing on positive and negative consequences significantly predicted perceived effectiveness; compromising, reminding oneself of the goal, and monitoring goal progress did not. Decision difficulty and decision importance also did not predict perceived effectiveness.

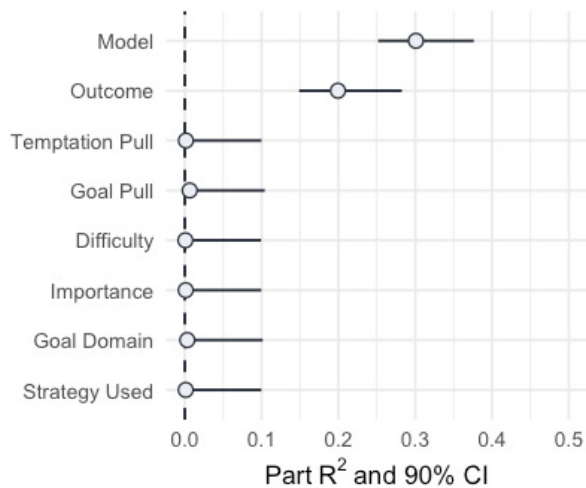
#### **Which Predictors Are Most Strongly and Uniquely Related to Perceived Self-Regulatory Effectiveness?**

The final model simultaneously examined all predictors from Models 1-5 (excluding interactions) to determine which had unique effects (Table 4, Model 6). The marginal  $R^2$  for the model was 0.30, 90% CI [0.25, 0.38], indicating that together the predictors explained 30% of the variance

in perceived self-regulatory effectiveness (see Figure 4). By far the strongest predictor of how effective people felt was whether they had resolved their self-control conflict successfully, which uniquely accounted for 20%, 90% CI [15%, 28%] of the variance. The only conflict characteristic that was a significant predictor in this simultaneous model was pull towards the goal, but this uniquely accounted for merely 0.64%, 90% CI [0%, 10%] of the variance in perceived self-regulatory effectiveness.

#### **Exploratory Analyses: Mediated Effects**

The preceding analyses found that a) many of the conflict characteristics that predicted successful resolution of self-control conflicts also predicted one’s feeling of self-regulatory effectiveness on that day, b) successful conflict resolution was by far the strongest independent predictor of perceived self-regulatory effectiveness, and c) including successful resolution in the model (in Table 4, Model 6, as well as in the pre-registered moderation analyses reported in the SOM) eliminated most other effects. One theoretically plausible model that is consistent with this pattern of associations stipulates that experiencing certain kinds of self-control conflicts increases the likelihood of successful resolution, which in turn boosts one’s feelings of self-reg-



**Figure 4. Unique Variance Explained by Predictors of Perceived Self-Regulatory Effectiveness**

Note. Model refers to overall model fit (i.e., the  $R^2$  for all predictors combined).

ulatory effectiveness. Indeed, the SOM reports exploratory mediation models that are generally consistent with this possibility, and that compare favorably to tests of alternative theoretical models. This pattern begins to suggest that certain types of conflicts are easier to resolve successfully, which in turn promotes feelings of general self-regulatory effectiveness.

## Discussion

The present study adds to the growing body of research examining experiences of self-control in daily life. Our findings show that there is considerable within-person variability in the kinds of self-control conflicts that people face on a day-to-day basis, and that different characteristics of the conflict experience can have important implications for self-control success and how people feel about their capacity to self-regulate.

### Pull Towards the Goal and Pull Towards the Temptation

Past work suggests that desires are experienced strongly and that the strength of peoples' desires predicts succumbing to them (Hofmann, Baumeister, et al., 2012; Milyavskaya et al., 2020). We conceptually replicated this work, in that our participants felt quite strongly pulled towards the temptation when faced with self-control conflicts, while also extending it in important ways. First, our findings emerged in the context of problematic desires specifically (i.e., desires that conflict with a personal goal), and of a wider range of temptations (due to our open-ended response format; Veilleux et al., 2018). Additionally, we found that relative to the other conflict characteristics assessed in the present work, pull towards the temptation was the strongest unique predictor of successful resolution. We also examined previously unexplored feelings of pull towards the goal; these feelings predicted both self-control

success (directionally) and general feelings of goal pursuit effectiveness (significantly).

### Decision Difficulty and Importance

Participants viewed the overall decision to exercise self-control as both difficult and important, which suggests that exercising self-control is effortful, and that people generally perceive the outcome of their self-control conflicts as consequential. These evaluations are likely influenced both by the perceived short-term costs of forgoing temptation and by the long-term benefits of acting in accordance with one's long-term goals (Fujita et al., 2006). However, only decision importance significantly predicted successful resolution, and neither decision difficulty nor decision importance predicted perceived self-regulatory effectiveness. In additional analyses presented in the SOM we did find that the relationship between the conflict outcome and perceived effectiveness was moderated by decision importance, such that successfully resolving a self-control conflict was most strongly related to effectiveness when the decision was more important. These results suggest that the perceived implications of the particular conflict decision may play a larger role in successfully exercising self-control than an individual's perceived capacity to make the decision. This is consistent with research that highlights the utility or value of exercising self-control as the key driver of behaviour, as opposed to the mental effort required (Inzlicht et al., 2014).

### Goal Domain

Self-control conflicts also varied in terms of the domain of the conflicting goal. In our student sample, the majority of reported conflicts involved either a health and fitness goal or a professional/academic goal, consistent with past studies that have found that many self-control conflicts involve either health or achievement-related goals (Hofmann, Vohs, et al., 2012; Veilleux et al., 2018). It is interesting to note that participants reported relatively few conflicts involving social goals. We believe this may be partly an artifact of features of the diary design. In the event screener that participants completed each day, for the purposes of a different research question unrelated to self-control, they could indicate if they had experienced an argument or disagreement with another person, and if so, describe it. It is possible that at times, participants reported on an argument that was also a self-control challenge—for example, resisting the urge to lash out at someone—and therefore did not consider reporting that conflict again when asked about self-control challenges. This feature of the diary design may have led to an under-reporting of social self-control conflicts in the current measures. It is also possible that people were simply less likely to construe conflicts involving a social goal as a self-control challenge.

We nevertheless found that the domain of the long-term goal was associated with a greater likelihood of self-control success. Specifically, self-control conflicts that involved a professional/academic goal seemed to be the most challenging to resolve successfully. This finding extends pre-



vious research, which has not examined this variable and instead focused on the domain of the *temptation* as a predictor of the outcome. That previous research finds the highest failure rates for desires to engage in media activities (e.g., to watch TV or surf the internet; Hofmann, Vohs, et al., 2012); our study helps bridge this work to the finding that distracting media alternatives are a powerful temptation away from achievement-related contexts (Duckworth et al., 2019). Furthermore, conflicts involving professional/academic goals may be particularly prone to failure because pursuit of these goals is often characterized by confusion and frustration (D'Mello & Graesser, 2012), which may cause temporary decrements in motivation. However, goal domain accounted for only a small proportion of the variance in self-control success when compared with other predictors like pull towards the temptation and strategy use.

### Use of Self-Control Strategies

Our results also suggest that people often use strategies to help them resolve self-control conflicts. Consistent with past work, cognitive change strategies were some of the most frequently used (Hennecke et al., 2019; Milyavskaya et al., 2020), while other strategies were very infrequently used. However, the overall frequency of strategy use in our study was also lower than has been found in previous research. Past research estimates that when faced with a self-control conflict people use a strategy approximately 90% of the time (Milyavskaya et al., 2020), whereas in our study, strategy use was identified in only about half of reported conflicts. We suspect that this difference is, at least in part, a result of the open-ended method we used. In contrast to previous studies, we did not explicitly ask people to report whether they used a self-regulatory strategy when resolving their conflict. One advantage of our approach is that by coding participants' open-ended descriptions we were able to assess strategy use without drawing attention to them. Explicitly asking participants to report the strategies they used could inadvertently make people more aware of them and their possible utility, in turn, affecting self-reported behavior (Milyavskaya et al., 2020). That said, in the present study, participants could have forgotten or not thought to mention a strategy they used, or described it too vaguely for coders to identify it. Additionally, it may be that certain types of strategies, for example cognitive change strategies, were easier for participants to describe when reflecting on the conflict experience and/or easier for coders to identify. Together, these ideas suggest the true frequency of strategy use may be somewhere in between what we find and the estimates from past studies.

Despite these differences, we conceptually replicated several insights from previous research (Milyavskaya et al., 2020), showing that people were more likely to report using strategies in successful, compared to unsuccessful, conflict resolution. Specifically, people were over six times more likely to resolve a conflict successfully when they had, versus had not, used a strategy. Given the low frequency of many specific strategies, we were limited in the kinds of meaningful comparisons we could make regarding the rel-

ative efficacy of different strategies. Additionally, because the focus of our study was on self-control in the context of a conflict experience, we could not assess anticipatory strategies that prevented conflicts from occurring altogether (Fujita, 2011; Hofmann & Kotabe, 2012). Nevertheless, when we compared the individual strategies that did occur with some frequency in our data, we found that no particular strategy increased the odds of successfully resolving a conflict more so than any other strategy. This replicates past work showing that a wide range of self-regulatory strategies are effective (though specific strategies may be more effective in different contexts; Bürgler et al., 2021; Hennecke & Bürgler, 2020). It also extends past work by demonstrating this within a wider range of conflict experiences in a single study (e.g., conflicts that involve both resisting a desire and persisting on unpleasant activities) and showing that people also feel more effective when using certain types of self-regulatory strategies.

### Self-Regulatory Effectiveness

In the present study, in addition to examining predictors of the conflict outcome we also explored whether the conflict experience and its resolution predicted daily perceptions of self-regulatory effectiveness. Interestingly, although pull towards the temptation was the stronger predictor of the conflict outcome (i.e., success or failure), both pull towards the goal and pull towards the temptation significantly predicted perceived self-regulatory effectiveness. Furthermore, the relationship between pull towards the goal and perceived effectiveness, though small, persisted even when controlling for the conflict outcome. That is, when people experienced conflicts where they felt more pulled towards the goal, they also felt more effective in pursuing their goals that day regardless of whether the conflict was resolved successfully or not. This insight suggests a dissociation between what predicts the proximal outcome of a conflict and what predicts how people feel about their capacity to self-regulate in general.

Successfully resolving a self-control conflict was a strong predictor of people's daily perceptions of self-regulatory effectiveness. Compared to days when no conflict was experienced, people felt more effective on days when they successfully exercised self-control and less effective on days when they gave in to temptation. Previous research has shown that there is an immediate hedonic cost of giving in to temptation—what the researchers refer to as a “spoiled pleasure” effect (Hofmann et al., 2013). This cost is incurred because self-conscious emotions associated with enacting a temptation (e.g., feelings of guilt) eclipse the momentary happiness of satisfying one's desire. Our findings are consistent with the idea that the cost of failing to exercise self-control is not only experienced in the future (i.e., by not realizing one's long-term goal) as is typically emphasized, but also in the short-term by affecting how one feels about oneself. In the present study, this is evidenced by same-day reductions in perceived self-regulatory effectiveness in the aftermath of a self-control failure.

## Exploratory Mediation

In pre-registered analyses reported in the SOM, including conflict outcome in the models predicting perceived self-regulatory effectiveness reduced the associations between most conflict characteristics and effectiveness. Exploratory mediation analyses (also presented in the SOM) showed that the conflict outcome accounted for a significant portion of the variance shared between several conflict characteristics and perceived effectiveness. This observation is consistent with a mediation model where conflict characteristics exert their effects on perceived effectiveness indirectly by increasing the odds of successful resolution. However, this conclusion remains speculative as the analyses were exploratory and the data cross-sectional, which prevents us from making causal inferences about the direction of these effects (Fiedler et al., 2018).

## Limitations and Future Directions

A limitation of the present research is the low frequency of reported self-control conflicts. On average, participants reported only three conflicts over the month-long study period, which is likely far fewer than were actually experienced. As noted in the methods, we believe this was most likely due to being embedded within a larger study that assessed multiple types of daily experiences. More specifically, people may have been less inclined to report a self-control conflict on days when they experienced other more salient events or when there were high response demands from other aspects of the broader study. Additionally, people may have been inclined to report only their most salient conflicts, which may not reflect the full range of conflicts experienced in daily life. Given the low number of reported conflicts per person, our ability to examine within-person variability in self-control conflicts was limited. These data may not ideally capture typical daily regulation or generalize to a wider sample of self-control conflicts. The generalizability of the findings is also limited by the fact that the vast majority of reported conflicts involved either a health goal or a professional/academic goal. To some extent this likely reflects the reality that health and professional/academic goals are two of the most commonly represented goals in self-control conflicts (Hofmann, Vohs, et al., 2012). Nevertheless, as noted earlier in the discussion, social goals may have been underrepresented in the present work, as well as other types of goals such as time-use or abstinence-restraint goals. Thus, our finding that successful resolution is less likely when conflicts involve professional/academic goals must be interpreted cautiously given the heterogeneity of the “other” goal category.

Despite the benefits of using an open-ended daily diary format, this method also presents certain limitations. One such limitation is that participants could only report one conflict per day. Thus, if people experienced multiple conflicts in the same day only one of them would be reported, which introduces the possibility of self-selection by participants. For example, if a participant experienced two conflicts and one was resolved successfully while the other unsuccessfully, they may have been biased towards reporting

their self-control success over failure. Additionally, because we asked participants to identify self-control conflicts as opposed to first asking about a desire and then asking if it conflicted with a goal, participants may have been less inclined to report experiences that presented only a mild conflict.

Another limitation is the fact that the sample was almost exclusively made up of university students in Ontario, Canada. Although we expect that these results would generalize to a more diverse sample, there may be some findings that are biased by the student sample. For example, it is possible that the frequency of conflicts involving professional/academic goals would be lower in a broader sample since academic contexts tend to pose many unique self-control challenges (Duckworth et al., 2019). Future research should therefore replicate the present findings with a non-student sample and in other cultural contexts.

Finally, a limitation of the present research is the fact that ratings of self-control conflicts occurred at the same time as ratings of self-regulatory effectiveness and thus the findings provide evidence of only concurrent associations between these variables. That is, because assessment of the conflict experience and resolution do not temporally precede ratings of self-regulatory effectiveness, these associations cannot point towards the directionality of effects. Furthermore, as noted in the discussion of the exploratory mediation results, the correlational nature of the data precludes us from making any inferences about the causality. Future experimental research could build on these findings by testing the implied causal model.

## Conclusions

The present research further highlights the value of exploring experiences of self-control in daily life and does so using an open-ended daily diary design. Together, the results from the present research show that self-control conflicts vary in several important ways including how pulled people feel towards the goal and temptation, the difficulty and importance of the decision, the domain of the conflicting goal, and the use of self-regulatory strategies. These conflict features can also reliably predict whether a conflict is resolved successfully or not. In particular, replicating past work, successful resolution is more likely when people feel less pulled towards temptation and use any type of self-regulatory strategy. Furthermore, successfully exercising self-control is strongly linked to how people view their ability to self-regulate more generally. Overall, our findings depict the nuanced nature of exercising self-control in everyday environments and help contribute to approaches for researching the dynamics of self-control in daily life.

## Contributions

Contributed to conception and design: IG, HO, AS, KL  
 Contributed to acquisition of data: IG, HO  
 Contributed to analysis and interpretation of data: EB, IG, AD

Drafted and/or revised the article: EB, KL, IG, AD, HO, AS

Approved the submitted version for publication: EB, KL, IG, AD, HO, AS

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We pre-registered our analysis plan for the present study on OSF (<https://osf.io/jver3>) after the data had been collected, but before looking at it or performing any statistical analyses.

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### Competing Interests

No competing interests to disclose.

### Data Accessibility Statement

The data and analysis scripts for this manuscript are available on the Open Science Framework at <https://osf.io/8y3fr/>.

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