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The Role of Conflict Representation in Abstinence Versus Moderation in Self-Control

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Self-control—the prioritization of valued global goals over immediate local rewards—is typically conceptualized and studied as isolated decisions. Goal pursuit, however, generally requires people to make repeated self-control decisions across contexts. We adopt a higher order, strategic level of analysis of self-control and explore, for the first time, people’s preferences for abstinence (a pattern of choices in which one never indulges) versus moderation (a pattern of choices in which one indulges when doing so does not harm one’s goals or even helps promote the pursuit of those goals). To understand when and why people may opt for one over the other, the present work explores one psychological feature that may support these strategy preferences: the representation of self-control conflicts as inherent (i.e., choice options are mutually contradictory) versus situational (i.e., choice options compete for limited resources). We present eight studies in the main text and three in the online Supplemental Materials documenting that people associate inherent and situational conflict representations with abstinence and moderation, respectively. By documenting that strategy preferences may differ as a function of conflict representations, this work questions the assumption of abstinence as the primary indicator of self-control success, raises methodological and conceptual questions about how best to assess these strategy preferences, and calls for greater understanding of self-control as a recurrent decision-making process.

Keywords: self-control, abstinence, moderation, conflict representation, goal pursuit

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When pursuing valued goals, people often need to practice self-control—prioritizing their long-term global goals and values over immediate local rewards (Ainslie, 1975; Fujita, 2011; Mischel et al., 1989). For example, smokers who want to quit must restrain themselves in the face of smoking cues. Patients must overcome the discomfort of seeing a doctor or fear of painful procedures when seeking medical care. Effective self-control is an important predictor of positive life outcomes, including academic success, social well-being, and physical and mental health (Beam & Fitzsimons, 2017; Duckworth, 2011; Fishbach & Woolley, 2017; Mischel et al., 1996; Rachlin, 1995). As such, understanding the antecedents and mechanisms of successful self-control is a central research question.


The present work investigates people’s self-control preferences at a higher order, strategic level of analysis. That is, rather than explore people’s preferences for specific choice outcomes or tactics to


deploy in response to a single situation, we instead explore, for the first time, how the way in which people represent the self-control conflict influences their preferences for abstinence (i.e., a pattern of choices in which one never indulges) versus moderation (i.e., a pattern of choices in which one indulges when doing so does not harm one’s goals or may even help promote the pursuit of those goals). Moreover, we explore how these preferences influence consequential choices, impact what counts as self-control failure, and guide judgments of others.

Higher Order Strategic Preferences: Abstinence Versus Moderation

Self-control research typically conceptualizes and empirically explores people’s preferences as isolated decisions. In other words,

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Phuong Q. Le played a lead role in data curation, formal analysis, software, validation, visualization, writing—original draft, and writing—review and editing and an equal role in conceptualization, funding acquisition, investigation, methodology, and project administration. Abigail A. Scholer played a supporting role in methodology and writing—review and editing and an equal role in conceptualization. Kentaro Fujita played a lead role in resources and supervision, a supporting role in writing—original draft, and an equal role in conceptualization, funding acquisition, project administration, and writing—review and editing.

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researchers historically have defined self-control success in terms of abstinence (e.g., Ainslie, 1975; Baumeister & Heatherton, 1996; Mischel et al., 1989; Rachlin, 1995; Thaler & Shefrin, 1981): Any decisions and actions consistent with global goals are interpreted as successful self-control; any indulgence in immediate local rewards is interpreted as a self-control failure.

For example, classic research in the delay-of-gratification tradition documents self-control in children by examining whether they prefer to eat one marshmallow immediately or wait 15 min to receive two (see Metcalfe & Mischel, 1999; Mischel et al., 1989, for review). In the weight-loss domain, researchers present dieters with a choice to eat a healthy (salad or apple) or an unhealthy but tempting food option (chocolate; e.g., Shiv & Fedorikhin, 1999; Tian et al., 2018). In studies examining academic goals, researchers ask participants to complete tedious yet goal-consistent tasks (e.g., math exercises) and tempt them with the opportunity to engage in less valued but more appealing alternatives (e.g., fun videos, Freitas et al., 2002; video games, Yeager et al., 2014). Even in more naturalistic experiential sampling studies that record multiple instances of self-control, researchers primarily aim to understand the psychological mechanisms that drive single instances of self-control behaviors (e.g., when people decide whether to act on a desire that conflicts with a global goal, Hofmann et al., 2012, 2014; Lopez et al., 2016; Milyavskaya et al., 2021; Williamson & Wilkowski, 2020). As is clear across these paradigms, when evaluating self-control success in a single shot, it makes sense to tag indulgence as failure.

Focusing on individual decisions has many upsides, allowing researchers to rigorously examine the psychological factors that influence any given self-control decision. Nevertheless, in the real world, goal attainment requires people to make multiple self-control decisions over the course of goal pursuit. Although indulging in temptation can create setbacks for goals at the decision level, some research suggests that occasional and intentional indulgences can sustain and support one's motivation to persist with goal pursuit at a higher strategic level (Jia, Hirt, & Koh, 2019; Jia, Hirt, & Nowak, 2019). Given the prospect of multiple self-control decisions over the course of goal pursuit, people might opt for a more nuanced pattern of moderation versus abstinence. The former involves strategically choosing to enjoy temptations when such indulgences will have little or no impact on one's goals or may even help to sustain and enhance the motivation to pursue those goals. As such, although people who opt for a moderation strategy may generally act in a manner consistent with the goal, they will at times indulge intentionally.

There is both anecdotal and emerging empirical evidence of moderation when considering broader patterns of behavior. Many students, for example, plan breaks from studying, even during stressful exam season. Preplanned opportunities to hang out with friends or enjoy entertainment can provide "safe" opportunities to fulfill social and well-being needs and may make commitment to academic pursuits more sustainable in the long term. Being open to indulgences not only allows people to relish rewarding moments but may serve as a reward for their goal-striving efforts (e.g., Trope & Fishbach, 2000). Students at big-time collegiate sports universities often find their studying efforts disrupted by sports events; those better in self-regulation are more sensitive to and plan around opportunities to indulge in the latter (Jia, Hirt, & Koh, 2019). For example, during the school year, high (vs. low) grade point

average students are more likely to watch games that are more important for their favorite teams, while forgoing the less important games. This allows them to indulge when the games are more meaningful and study when it is not. Similarly, when dieters perceive indulgences as strategically serving to promote (rather than violate) their goals, they evidence greater dietary success and satisfaction (Prinsen et al., 2019). Taken together, both anecdotes and empirical research provide support for the assertion that people may opt for moderation over abstinence as a strategy to manage repeated self-control decisions.

Little is known, however, about among whom and when people might prefer to pursue a strategy of abstinence versus moderation. Some initial evidence suggests that dieters can self-classify as abstainers or moderators (Xie et al., 2021). Further, experimental evidence suggests that both abstinence and moderation can be effective for goal attainment. In a daily diary study, Coelho do Vale et al. (2016) randomly assigned dieters to implement abstinence (i.e., follow a diet with no cheat days) or moderation (i.e., follow a diet with cheat days) for 2 weeks. Participants in these two groups did not differ in the weight that they successfully lost. However, no work has provided a systematic framework for understanding when and why people might prefer abstinence or moderation in self-control more broadly. Exploring the foundations of these strategic preferences is critical, as they have important downstream consequences for how people choose to regulate, how people evaluate what counts as failure, and how people judge the behaviors of others.

Conflict Representations and Abstinence Versus Moderation Preferences

We propose a novel conceptual framework that integrates abstinence and moderation as alternative strategies. To this end, we provide the first empirical evidence that there is a systematic association between how people think about self-control conflicts and strategic preferences for abstinence versus moderation. One can think of the conflicting choice options in a self-control dilemma as inherently contradictory (i.e., inherent conflict) or as competing for situational resources (i.e., resource or situational conflict); we propose that people associate the former with abstinence and the latter with moderation.

This proposal draws from the goals literature which distinguishes inherent and resource goal conflicts (e.g., Gorges & Grund, 2017; Riediger & Freund, 2004; Segerstrom & Solberg Nes, 2006). Inherent conflicts occur when two goals are incompatible because they entail opposing attainment strategies and/or involve end states that are mutually contradictory. For example, recovering alcoholics cannot both "be sober" and "drink with friends." These goals create directly opposing expectations for behavior and outcomes, pushing decision-makers to sacrifice one goal (drinking with friends) in favor of the alternative (sobriety). By contrast, resource conflicts (or what we refer to as "situational" conflicts) occur when goals are incompatible because they compete for limited resources (e.g., time, energy, or money).¹ For example, studying for exams and hanging out with friends are not normally contradictory goals for students—

¹ We prefer the term "situational conflict" over "resource conflict" because there may be contextual features beyond limited resources that pit the two options against each other.

choosing to pursue both is viable when there is ample time. However, when final exams are fast approaching, the limited availability of free time forces these goals into conflict. If not for the situational constraint on resources, people could expect to achieve both goals successfully. Although both inherent and situational conflicts can produce similarly high levels of subjective conflict—particularly when resources are scarce—what distinguishes inherent from situational conflicts is that one option is perceived as necessarily requiring the sacrifice of the other, even in the presence of ample resources.

Existing work suggests that goal conflicts can often objectively be categorized as inherent versus resource/situational (Segerstrom & Solberg Nes, 2006). That is, the type of conflict can be determined by the characteristics of the goals in question. Critically, holding constant the features of the goals, people can also subjectively represent conflicts as inherent or situational. We propose that these subjective representations are distinct and are critical in shaping what affordances decision-makers perceive for abstinence versus moderation (e.g., Gibson, 1979).² Representing choice options as inherently contradictory leads the decision-maker to view the choice in “either-or” terms. Students who represent the choice between studying versus watching TV as an inherent conflict would likely see their options as building their career versus falling prey to mindless entertainment. This “either-or” construal leaves abstinence as the preferable strategy for goal pursuit. By contrast, representing options as situationally incompatible should lead decision-makers to be more likely to frame the decision as a question of “when-to-choose-what.” Students who represent the same choice as a situational conflict would likely ask whether the situation calls for choosing studying or watching TV. This “when-to-choose-what” construal affords moderation as the preferable goal attainment strategy. Given these differences in affordances, we hypothesize that inherent and situational conflict representations are systematically associated with abstinence and moderation preferences, respectively. That is, people should prefer to opt for abstinence (vs. moderation) when they represent the options comprising a self-control conflict inherently (vs. situationally).

Assessing Abstinence Versus Moderation

The primary outcome of interest in the current investigation is strategy preference: the pattern of decisions or behaviors that people would in principle like to implement to attain their goals. As such, in the majority of our studies, we use a direct self-report measure to assess people’s strategy preference—what strategy would participants prefer to achieve their goals? It is optimal to assess these strategic preferences directly because, even with a complete record of participants’ decisional patterns, it is unclear from the behavioral data alone whether any instance of indulgence reflects a failure of abstinence or an instance of strategic indulgence when pursuing moderation. People may, moreover, fail to implement their preferred strategy of abstinence versus moderation. Much like strong temptations can lead people to fail to prioritize global goals over local rewards in the moment of choice despite their preference for the former, they may similarly lead people to fail to implement their preferred abstinence versus moderation strategy successfully. Another reason why we do not expect strategy preferences to necessarily align with actual implementation is that representations and their concurrent strategy preferences may change over time.

Although examining the stability of these representations and strategy preferences is outside the scope of the current article, if representations change, we would expect strategy preferences to change accordingly. Therefore, observing a series of multiple decisions is at best an indirect measure of strategy preferences. Nevertheless, to provide converging evidence, we report the results of some studies in which we assess strategy preferences directly as well as some in which we inferred strategy preferences by observing participants’ self-control decisions across a variety of contexts.

We note that comparing the efficacy of abstinence and moderation is not an aim of the present work. We draw from existing research that suggests that both strategies may be effective for goal attainment (Coelho do Vale et al., 2016). As our goal is to provide the first empirical evidence for an association between conflict representation and strategy preferences, documenting actual strategy implementation and the consequences of such implementation for sustained self-control success are also beyond the scope of the present article.

The Present Research

We tested our hypothesis in a series of 11 studies (eight in the main text and three in the online Supplemental Materials). Studies 1–3 tested our foundational hypothesis that preferences for abstinence versus moderation are systematically associated with inherent versus situational conflict representations, respectively. Study 1 (and two studies in the online Supplemental Materials) examined this association using a quasiexperimental design. Specifically, we presented participants with self-control conflicts that we reasoned people, on average, would represent as inherent versus situational and then assessed participants’ preferences for abstinence versus moderation strategies as well as their own subjective representations of those conflicts. These studies demonstrate that there are systematic differences both between contexts and between individuals in how people represent self-control conflicts and that the latter, in particular, are systematically associated with preferences for abstinence versus moderation. Studies 2a, 2b, 3a, and 3b presented experimental tests: We manipulated whether individuals represented the same conflicts inherently versus situationally and influenced strategy preference.

Studies 4–6 (and Supplemental Study S3) explored implications of these strategic representations for consequential choices and

² Inherent and situational conflicts are assumed to be qualitatively distinct—people appear to categorize goal conflicts as belonging to one type of conflict more than the other (e.g., Riediger & Freund, 2004; Segerstrom & Solberg Nes, 2006). This distinction nevertheless may reflect some underlying continuous spectrum. Like many other categorization phenomenon (for review, see Goldstone & Hendrickson, 2010), we propose that the representation of a goal conflict as inherent versus situational produces qualitatively distinct subjective experiences. This is not unlike how people experience red and green as qualitatively distinct perceptual experiences despite the two colors differing on a continuous underlying spectrum of wavelength. Despite reflecting similar quantitative differences, people are more sensitive to stimuli changing between rather than within category of colors (Berlin & Kay, 1999). Akin to the difference between “red” and “green,” we argue that, even if they share some underlying continuous feature, inherent and situational conflict representations are meaningful categories of goal conflicts that shape subjective experiences, with implications for preferences for abstinence versus moderation.

perceptions and evaluations of others. Study 4 experimentally tested the converse of this association: whether people infer targets' conflict representations from the latter's strategy choices. Study 5 explored the potential behavioral implications of the proposed association between representation and strategy in an ecologically valid, consequential context by capitalizing on a self-control conflict that people commonly experienced during the COVID-19 global pandemic. Finally, Study 6 explores an important implication of this association: how perceivers' evaluations of targets depend on a match (vs. mismatch) between the perceivers' conflict representations and the strategies that targets choose.

Transparency and Openness

Here, we report sample size and exclusionary criteria for all studies. Studies 3b (<https://aspredicted.org/s8zp2.pdf>) and Supplemental Study S3 (<https://aspredicted.org/qm95a.pdf>) were preregistered. The other studies were not preregistered. All deidentified data, preregistrations, study materials, and codebooks are available on the Open Science Framework at <https://osf.io/w38t7>.

Sample Size

Studies 1, 2a, 2b, 3a, 3b, 4, and 6 used within-subjects designs to enhance statistical power. For these studies, our critical analyses are linear mixed-effects models that account for the nested structure of the data. We opted to not rely on power analyses to determine sample sizes a priori because conducting accurate analyses for our critical analyses required model information that we did not have at the time (Lane & Hennes, 2018); thus, we determined sample size based on our available resources at the time and oversampled when possible (see also post hoc sensitivity analyses in Table 1). For Study 5, which employed a correlational design and was tested during a time-sensitive context (COVID-19 pandemic), we set the target $N = 300$ to recruit as large a sample of individuals as our resources at the time allowed.

Exclusionary Criteria

For studies conducted using online crowdsourcing services (Prolific; <https://prolific.co/>), we included Winograd schema questions (i.e., a pronoun disambiguation task that should be simple for humans but challenging for nonhumans; Morgenstern et al., 2016) to ensure the validity of our data. We intended to exclude data from participants that answered these questions incorrectly. However, we observed no such issue in the applicable studies and thus did not exclude data from any individuals based on this criterion. We applied an additional exclusionary criterion for Study 5—we excluded those for whom the primary self-control conflict of interest was not applicable (see Study 5: Method). For Studies 1 and 2b, which were conducted with introductory psychology students, we did not include Winograd questions as there is little concern about nonhuman respondents—students were asked to verify their affiliation with the university before accessing the materials. Finally, no data were analyzed before data collection concluded for a given study.

Study 1: Manipulating Self-Control Domains

In Study 1, we manipulated conflict representations by presenting participants with scenarios in self-control domains that we reasoned would typically be represented as inherent versus situational conflicts. Participants imagined themselves in each scenario and then reported their strategy preferences. They then reported their subjective conflict representations as a manipulation check. By manipulating self-control domains, our primary aim was to capture variance in participant's subjective representations about self-control conflicts more generally. We expected participants to represent typical inherent versus situational conflicts as inherent versus situational conflicts. Importantly, the variance in their representations should systematically predict strategy preference: We predict that, to the extent that participants represent a conflict inherently (vs. situationally), they should prefer abstinence (vs. moderation).

Method

Participants

Sixty-five introductory psychology students at The Ohio State University (age: $M = 19.40$, $SD = 2.19$; gender: 39 female, 25 male, and one nonbinary) participated in this online study for partial course credit. Prior to providing informed consent, participants were asked to turn off any services that mask their Internet Protocol addresses, allowing us to ensure that they resided in the United States. Participants were also instructed to complete the study in one sitting and silence their phones for the duration of the study.

After providing consent, participants read that we were interested in their preferences for abstinence versus moderation when faced with hypothetical dilemmas in which they had to decide repeatedly between two valued goals.³ Participants were provided behavioral definitions for abstinence and moderation before moving on to the main task, as follows.⁴

People often experience dilemmas in which they must repeatedly decide between two valued goals. ... When faced with such dilemmas, people might opt for an abstinence or a balancing strategy.

- When opting for an abstinence strategy, people select one goal to pursue and stick to that chosen option across all situations.
- When opting for a balancing strategy, people prioritize one goal but occasionally opt for the other goal.

Typicality Manipulation

In the main task, participants responded to 12 hypothetical scenarios, one at a time in randomized order. Half of these scenarios depicted self-control domains we reasoned that people, on average, would view as typical inherent conflicts (i.e., stay sober vs. drink;

³ Study materials—in all studies—explicitly described the conflicting options that participants should consider in each scenario as they responded, referencing both the global over-riding goal and local concern or temptation (e.g., see Appendix).

⁴ In all studies, we used the term “balancing” to refer to the moderation strategy in materials shown to participants. However, for consistency with our theoretical framework, we refer to this strategy as “moderation” throughout the current document. Exact materials that participants responded to can be found at <https://osf.io/w38t7>.

Table 1
Sample Sizes and Sensitivity Analyses for All Studies

Study	Sample size consideration	Sample	Target <i>N</i>	Recruited <i>N</i>	Final <i>N</i>	Minimum effect size at 80% power
1	Quasiexperiment, within-subjects	Students	50	65	65	$d = .61$
2a	Experiment, within-subjects	Prolific	75	75	75	$d = .55$
2b	Experiment, within-subjects	Students	150	165	162	$d = .35$
3a	Experiment, within-subjects	Prolific	75	75	75	$d = .62$
3b	Experiment, within-subjects	Prolific	150	156	156	$d = .65$
4	Experiment, within-subjects	Prolific	75	75	75	$d = .33$
5	Correlational	Prolific	300	330	263	$r = .12$
6	Experiment, within-subjects	Prolific	80	81	80	$d = .46$
Supplemental S1	Quasiexperiment, within-subjects	Prolific	50	50	50	$d = .85$
Supplemental S2	Quasiexperiment, within-subjects	Prolific	50	60	62	$d = .75$
Supplemental S3	Correlational	Prolific	300	331	327	$r = .11$

Note. For correlational Supplemental Study S2 and Study 5, we conducted the sensitivity analysis in G*Power (Faul et al., 2007). For studies using within-subjects design, we used an online application (https://jakewestfall.shinyapps.io/two_factor_power/; recommended by Judd et al., 2017) to conduct the sensitivity analysis. We estimated the minimum effect size that the final *N* (i.e., sample size after exclusions) can provide 80% power to detect, given that, in all within-subjects studies, participants responded to 12 self-control scenarios. Analysis parameters were as follows: crossed–nested–crossed study design (i.e., participants were crossed with conditions, scenarios were nested within each condition, and participants were crossed with scenarios; Judd et al., 2017), residual variance partitioning coefficients (VPC), participant intercept VPC, target intercept VPC, participant-by-target VPC = 0, participant slope VPC and target slope VPC = 0. Unspecified parameters were supplied from the random-effect estimates in each study.

smoke vs. quit), whereas the other half depicted domains we reasoned to be typical situational conflicts (i.e., work vs. spend time with family; study vs. watching sports; see Appendix, for the list of scenarios).⁵ For each scenario, participants were asked to imagine themselves as the target and answer a series of questions about the situation.

Strategy Preference

After reading each scenario, participants answered the question: “Given this situation, to what extent do you think an abstinence strategy or a balancing strategy would be more helpful for you?” using a 6-point scale, ranging from *abstinence is much more helpful* to *balancing is much more helpful*.

Additional Scenario-Level Measures

We also explored participants’ perceptions of various features in each scenario. Given the quasiexperimental design—scenarios differed between and within typicality conditions—one rationale for including these measures was to check and control for possible confounds (e.g., conflict strength: the extent to which participants would feel conflicted if they were in the scenario, and personal relevance) and to isolate the relationship between subjective conflict representations and strategy preferences. We also tested an alternative measure of conflict representation (i.e., indulgence severity: the extent to which participants thought indulgence would threaten goal pursuit) and included other exploratory measures for future research. We provide a summary of the results of these variables in the Results section; a more detailed report can be found in Supplemental Section SA.

Subjective Conflict Representation

In this and all relevant studies, participants were then introduced to definitions of inherent and situational conflicts, as follows, and reported their subjective representations.⁶

- An inherent conflict happens when the pursuit of one goal necessitates sacrificing the other goal by definition—that is, it is impossible to achieve both goals. You can only have one goal or the other.
- A situational conflict happens when, even though the two goals are not necessarily incompatible, something about the situation (e.g., the amount of time, energy, or money you have) forces you to choose between them.

In each the scenario, participants answered the question: “To what extent do you think this scenario reflects an inherent or a situational conflict?” using an 8-point scale ranging from *completely reflects an inherent conflict* to *completely reflects a situational conflict*. After responding to all scenarios, participants reported demographic information and were debriefed.

Results

We analyzed the data using mixed-effects regression models. As participants saw scenarios that were different both within and across conditions (typical conflict types), we modeled condition as a fixed factor and participants and scenarios as random factors. Specifically, in our experimental design, participants were crossed with conditions (each participant responded to typical inherent and situational conflicts), scenarios were nested within each condition (different scenarios for typical inherent and situational conflicts), and participants were crossed with scenarios (each participant responded to all scenarios). We modeled all possible sources of random variance for this design (following recommendations from

⁵ We developed and piloted these scenarios in Supplemental Studies S1 and S2. Results from those pilots (see online Supplemental Materials) along with results of this study (see Results section) confirmed that these self-control domains differed on the inherent-situational conflict dimension as we expected.

⁶ We included these definitions in all studies whenever we measured conflict representation.

Judd et al., 2017, in which the preferred model should include random intercepts by participant, random slopes for condition by participant, and random intercepts by scenario). When this model had convergence issues, we simplified the random-effect structure and conducted model comparisons to identify the best fitting model. All reported mixed-effects models used the recommended full random-effects structure unless noted otherwise.

Manipulation Check

We first conducted a manipulation check to confirm condition differences in how participants subjectively represented the self-control conflicts. As expected, participants, on average, perceived typical inherent (vs. situational) conflicts to be more inherently (vs. situationally) incompatible, $\gamma = .82$, $SE = .16$, $t(12.21) = 5.13$, $p < .001$, $d = .39$ (Table 2).

Strategy Preferences

We then tested whether conditions influenced strategy preferences. As expected, participants, on average, preferred abstinence over moderation in typical inherent conflicts and moderation over abstinence in situational conflicts, $\gamma = .70$, $SE = .16$, $t(12.21) = 4.43$, $p < .001$, $d = .45$ (Table 3 and Figure 1; see Supplemental Figure S6, for scenario-level distributions).

Mediation

Critical to our framework is the relationship between subjective representation and strategy preference. As such, we conducted a mediation analysis to examine whether the variance of subjective representation predicted the variance of strategy preference across all scenarios, accounting for the effect of typicality condition on strategy (see Figure 2, for mediation model; see Supplemental Figure S6, for scenario-level distributions of representation and strategy). For this mediation analysis, we fit two separate linear

Table 2

Mixed-Effects Regression Model Predicting Subjective Representation From Typicality Condition in Study 1

Random effects						
Groups name	Variance		SD		Correlation	
Participant (intercept)	.15		0.39		−.42	
Slope for condition	.63		0.80			
Scenario (intercept)	.14		0.37			
Residual	3.38		1.84			
Number of observations: 780; groups: participants, 65; scenario, 12						
Fixed effects ($R^2m = .13$)						
Predictor	γ	SE	df	t	p	d
(Intercept)	4.32	.13	12.90	32.22	<.001	
Condition ^a	.82	.16	23.40	5.13	<.001	.39

Note. Cohen's d estimates for fixed effects in all mixed-effects regression models were calculated using the following formula: $d = \frac{\gamma}{\sqrt{\sum \text{Random effects variance}}}$ (Brysbaert & Stevens, 2018). Statistics that reflect critical tests of our theoretical framework are bolded. SE = standard error; df = degrees of freedom.

^aCoded as -1 for inherent conflicts and 1 for situational conflicts.

Table 3

Mixed-Effects Regression Model Predicting Strategy Preferences From Typicality Condition in Study 1

Random effects						
Groups name		Variance	SD		Correlation	
Participant (intercept)		.24	0.48		−.30	
Slope for condition		.16	0.40			
Scenario (intercept)		.24	0.49			
Residual		1.81	1.35			
Number of observations: 780; groups: participants, 65; scenario, 12						
Fixed effects ($R^2m = .17$)						
Predictor	γ	SE	df	t	p	d
(Intercept)	3.04	.16	13.30	18.79	<.001	
Condition ^a	.70	.16	12.21	4.43	<.001	.45

Note. Statistics that reflect critical tests of our theoretical framework are bolded. SE = standard error; df = degrees of freedom.

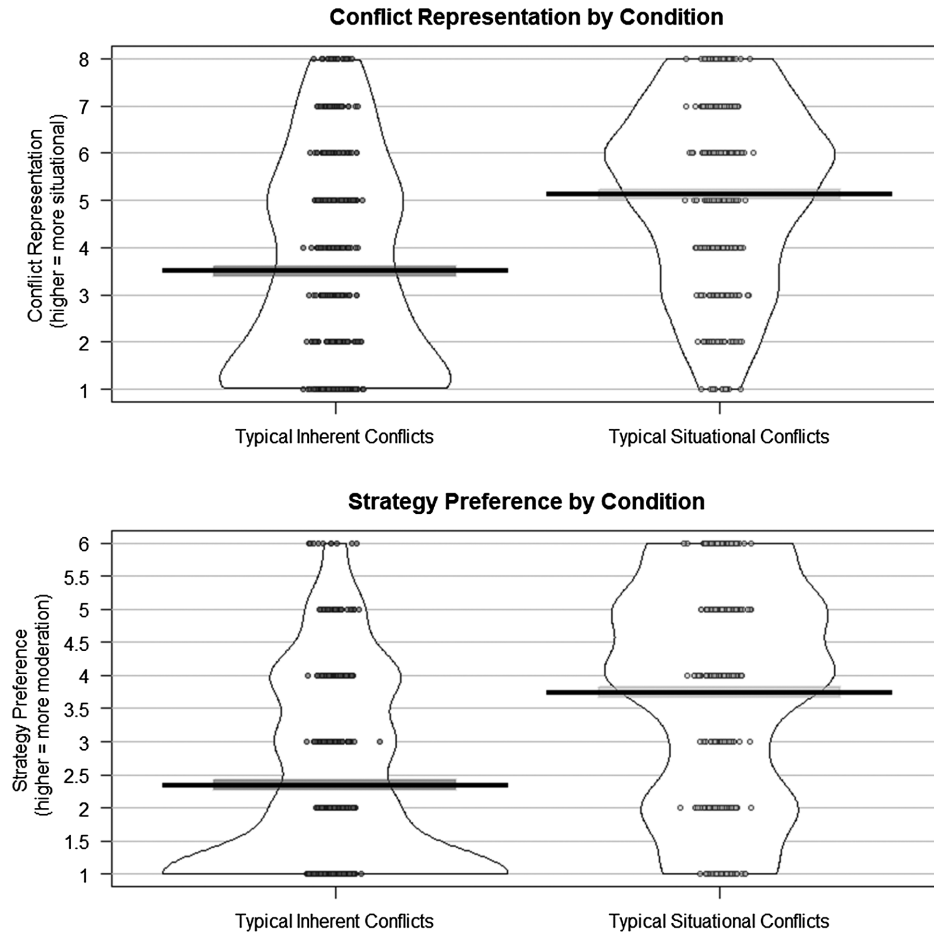
^aCoded as -1 for inherent conflicts and 1 for situational conflicts.

mixed-effects models to the data to estimate the effect of condition on subjective representation (Path a) and the effect of subjective representation on strategy preference, controlling for condition (Paths b and c). The key effect is Path b—the proposed association between subjective conflict representation and strategy preference. We unpacked this association by examining whether between-subjects or within-subject variance in subjective representation predicted strategy preference (see Enders & Tofighi, 2007). To create an index for within-subject variance, we centered participants' subjective representation scores to a given scenario on their individual mean across all scenarios. Higher scores on the within-subject index indicate that participants represented a given scenario as more situational (vs. inherent) relative to their mean across all scenarios. To create an index for between-subjects variance, we centered each participant's average representation score across all scenarios on the sample mean. Higher scores on the between-subjects index indicate participants who generally represent all of the conflicts described in the scenarios as more situational (vs. inherent) than the average participant in our sample. Because these two indices contained different sources of variance for the subjective representation scores, $r(778) < .001$, we entered both simultaneously in the model for Paths b and c. We then took the coefficient estimates from these path models and used Monte Carlo simulations to estimate the indirect effects of condition on strategy preference via the within and between-subjects variance in subjective representation, respectively.

As expected, within-subject variance in conflict representation mediated the effect of condition on strategy preference, $M_{\text{indirect}} = .12$, 95% CI [.06, .18]: Participants preferred abstinence (vs. moderation) when they perceived a conflict as more inherent (vs. situational) compared to how they generally perceive self-control conflicts, $\gamma = .14$, $SE = .03$, $t(671.77) = 5.56$, $p < .001$. In addition, between-subjects variance in subjective representation also mediated the effect of condition on strategy preference, $M_{\text{indirect}} = .26$, 95% CI [.08, .48]: Participants who generally perceive self-control conflicts as more inherent were more likely to prefer abstinence (vs. moderation) than participants who generally perceive conflicts as more situational, $\gamma = .32$, $SE = .11$, $t(63.03) = 2.91$, $p = .005$.

Figure 1

Violin Plots Depicting Data Distributions of Subjective Conflict Representation (Top Panel) and Strategy Preference (Bottom Panel) by Typicality Conditions in Study 1



Note. Points represent raw responses, outlines depict distribution density, bolded lines indicate means, and light gray bands depict standard errors.

Consistent with predictions, these findings suggest that the extent to which people mentally represent self-control conflicts as more inherent versus situational—irrespective of whether such variance stems from differences in the domains or from individual differences—is associated with preferences for abstinence versus moderation strategies, respectively.

Additional Analyses

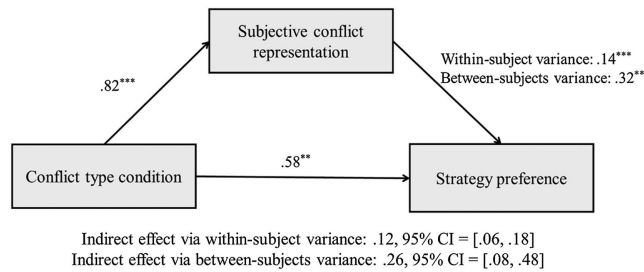
Supplemental Section SA provides detailed reports of additional analyses that we conducted to test potential confounds. To summarize, condition did not significantly differ on the extent to which participants feel conflicted about the options, $\gamma = -.01$, $SE = .09$, $t(10) = -.07$, $p = .944$ (inherent: $M = 2.70$, $SD = 1.39$; situational: $M = 2.64$, $SD = 1.06$). This suggests that, as intended, both inherent and situational conflicts produced similarly high levels of subjective conflict—particularly when resources are scarce for the latter. Participants did report that typical inherent conflict scenarios were less personally relevant, $\gamma = .38$, $SE = .09$, $t(13.77) = 4.08$,

$p = .011$, $d = .33$ (inherent: $M = 1.67$, $SD = 1.08$; situational: $M = 2.43$, $SD = 1.22$). The relationship between subjective conflict representation and strategy preferences was robust, however, even after controlling for the personal relevance of the self-control conflicts. In addition, we replicated the primary findings when using indulgence severity as an alternative measure of subjective conflict representations.

Discussion

Study 1 provided initial evidence that subjective conflict representations are systematically associated with strategy preference. Specifically, participants were more likely to opt for abstinence (vs. moderation) when they perceived a self-control conflict as more inherent (vs. situational). In the online Supplemental Material, we also provide evidence for the unique role of conflict representation on strategy preference while controlling for potential confounds. Nevertheless, Study 1 only provides correlational evidence for the relationship between subjective conflict representation and strategy

Figure 2
Mediation Model for Study 1



Note. Condition was coded as -1 for typical inherent conflicts and 1 for typical situational conflicts. Higher conflict representation scores reflect greater perception that choice options in the self-control conflict are situationally (vs. inherently) incompatible. Additionally, sources of variance in conflict representation were segregated into variance within each subject and between subjects. Higher strategy preference scores reflect greater preference for moderation (vs. abstinence). CI = confidence interval.

** $p < .01$. *** $p < .001$.

preference given the quasiexperimental design. To better control for confounding variables and to examine causality, Studies 2a, 2b, 3a, and 3b experimentally manipulated subjective conflict representation.

Studies 2a and 2b: Manipulating Conflict Representation in Others

In Studies 2a and 2b, participants read scenarios that depicted other people facing typical inherent versus situational self-control conflicts adapted from Study 1. Critically, irrespective of typicality, we manipulated whether the targets were described as representing these conflicts inherently versus situationally. Participants then indicated how much they expected the targets to engage in an abstinence versus moderation strategy. Replicating Study 1, we expected that whether a scenario represented a typical inherent versus situational self-control conflict would affect which strategy participants expected the target to employ. However, above and beyond this effect, we also predicted that manipulating whether a target represented a conflict inherently versus situationally would influence strategy expectations.

Method

Participants

Study 2b was a replication of Study 2a using a larger sample size. Seventy-five Prolific workers in the United States with an approval rate $>95\%$ (age: $M = 39.24$, $SD = 15.12$; gender: 35 female, 35 male, two nonbinary, one agender, and two did not report) participated Study 2a in exchange for \$0.80. A hundred fifty-six introductory psychology students at The Ohio State University (age: $M = 18.85$, $SD = 2.17$; gender: 85 female, 70 male, and one gender-fluid) participated in Study 2b online for partial course credit.

Materials for Studies 2a and 2b are identical unless otherwise noted. Participants first read that we were interested in whether they think other people are likely to opt for abstinence or moderation given how they think about different dilemmas. We then defined

abstinence and moderation as in Study 1 before presenting the self-control scenarios.

Conflict Representation Manipulation

In the main task, participants read 12 hypothetical scenarios adapted from Study 1 in which protagonists were confronted with self-control conflicts in randomized order (see Appendix). Six of the scenarios represented domains that Study 1 demonstrated were typically inherent conflicts; the remaining six were those that were typically situational conflicts. Within each set of six scenarios, the stimuli presentation program randomly selected three to describe the target as subjectively representing the conflict as inherent and three to describe the target as subjectively representing the conflict as situational. Thus, the study was a fully crossed 2 (typicality: inherent vs. situational) $\times 2$ (representation condition: inherent vs. situational) within-subjects experiment.

The subjective representation manipulation varied slightly between Study 2a and Study 2b. In Study 2a, the inherent representation description read: “[The target] believes that the [goal] and [indulgence] are inherently incompatible goals. To [him/her], making progress on one creates setbacks for the other.” The situational representation description read: “[The target] believes that the [goal] and [indulgence] are not inherently incompatible goals. To [him/her], they are the kinds of goals that conflict due to constraints in time and resources.”⁷ In Study 2b, the second sentence of each description was removed to reduce the possibility of demand effects.

Strategy Expectation

For each scenario, participants answered the question: “Given how [the target] thinks, how likely do you think [he/she] would opt for an abstinence or a balancing strategy?” using an 8-point scale ranging from *extremely likely to opt for abstinence* to *extremely likely to opt for balancing*.

Results

The same data analysis strategy was used for both Studies 2a and 2b. We used linear mixed-effects regression models to predict strategy expectation from typicality condition (coded as -1 for inherent and 1 for situational), representation condition (coded as -1 for inherent and 1 for situational), and their interaction. Similar to Study 1, the models accounted for random intercepts by participants, random slopes by participants depending on representation condition, as well as random intercepts by scenario (see Tables 4 and 5).

Conceptually replicating Study 1, participants expected targets to opt for abstinence (vs. moderation) in typical inherent (vs. situational) conflicts, Study 2a: $\gamma = .43$, $SE = .15$, $t(9.70) = 2.87$, $p = .017$, $d = .22$; Study 2b: $\gamma = .39$, $SE = .09$, $t(9.78) = 4.24$, $p = .002$, $d = .20$. Critically, as expected, the experimental manipulation of the targets’ subjective conflict representations also led participants to have different expectations for abstinence versus moderation. When targets were presented as subjectively representing the conflict as

⁷ Throughout the text, we use brackets to denote cases in which the exact text that participants saw varied depending on context. See Open Science Framework link for exact materials: <https://osf.io/w38t7>.

Table 4

Mixed-Effects Regression Model Predicting Strategy Expectation From Typicality and Subjective Representation Conditions in Study 2a

Random effects						
Groups name	Variance		SD		Correlation	
Participant (intercept)	.12		0.35		.19	
Slope for condition	.72		0.85			
Scenario (intercept)	.23		0.48			
Residual	2.89		1.70			
Number of observations: 900; groups: participants, 75; scenario, 12						
Fixed effects ($R^2m = .18$)						
Predictor	γ	SE	df	t	p	d
(Intercept)	4.24	.15	11.07	27.42	<.001	
Representation ^a	.84	.11	73.97	7.40	<.001	.42
Typicality ^a	.43	.15	9.70	2.87	.017	.22
Representation \times Type	−.06	.06	740.03	−1.00	.316	−.03

Note. Statistics that reflect critical tests of our theoretical framework are bolded. SE = standard error; df = degrees of freedom.

^a Coded as -1 for inherent and 1 for situational.

inherent (vs. situational), participants had higher expectations for abstinence (vs. moderation); Study 2a: $\gamma = .84$, $SE = .11$, $t(73.97) = 7.40$, $p < .001$, $d = .42$; Study 2b: $\gamma = .60$, $SE = .08$, $t(154.80) = 7.37$, $p < .001$, $d = .31$. The experimental effect of subjective representation on strategy expectation was about twice in magnitude of that of typicality, suggesting that participants relied more heavily on the targets' subjective representations rather than self-control domains to make inferences about abstinence versus moderation strategy. Further, this effect did not depend on the typicality, Study 2a: $\gamma = -.06$, $SE = .06$, $t(740.03) = -1.00$, $p = .316$, $d = -.03$; Study 2b: $\gamma = .01$, $SE = .04$, $t(155) = .19$, $p = .849$, $d = .004$ (see Figure 3), and was consistent across all self-control scenarios (see Supplemental Figure S7).

Table 5

Mixed-Effects Regression Model Predicting Strategy Expectation From Typicality and Subjective Representation Conditions in Study 2b

Random effects						
Groups name	Variance	SD	Correlation			
Participant (intercept)	.07	0.26	−.35			
Slope for condition	.80	0.89				
Scenario (intercept)	.08	0.29				
Residual	2.74	1.66				
Number of observations: 1871; groups: participants, 156; scenario, 12						
Fixed effects ($R^2m = .12$)						
Predictor	γ	SE	df	t	p	d
(Intercept)	4.42	.09	10.79	47.13	<.001	
Representation ^a	.60	.08	154.80	7.37	<.001	.31
Typicality ^a	.39	.09	9.78	4.24	.002	.20
Representation × Type	.01	.04	155	.19	.849	.004

Note. Statistics that reflect critical tests of our theoretical framework are bolded. SE = standard error; df = degrees of freedom.

^a Coded as -1 for inherent and 1 for situational.

Discussion

Studies 2a and 2b isolated the causal effect of conflict representation on abstinence versus moderation preferences. As in Study 1, participants expected others to opt for abstinence (vs. moderation) when faced with typically inherent (vs. situational) self-control conflicts. However, beyond the effect of typicality, experimentally manipulating the targets' representations of options posed in the self-control conflict as inherently versus situationally incompatible also led participants to expect target others to opt for abstinence versus moderation, respectively. We note that both experiments yielded highly consistent results, even when Study 2b used a manipulation that is less susceptible to demand than Study 2a. Taken together, Studies 2a and 2b provide further evidence for an association between conflict representations and strategy preferences.

One limitation of Studies 2a and 2b is that they explored how perceivers predict others' preferences for abstinence versus moderation rather than how conflict representations causally impact one's own strategy preferences. Studies 3a and 3b address this issue.

Studies 3a and 3b: Manipulating One's Own Conflict Representation

Studies 3a and 3b manipulated whether participants were asked to imagine that they represented self-control conflicts inherently versus situationally, irrespective of typicality and assessed to what extent they preferred an abstinence versus moderation strategy. We predicted that, beyond the effect of self-control domain, the manipulation of inherent versus situational conflict representation would lead participants to prefer abstinence versus moderation, respectively.

Method

Participants

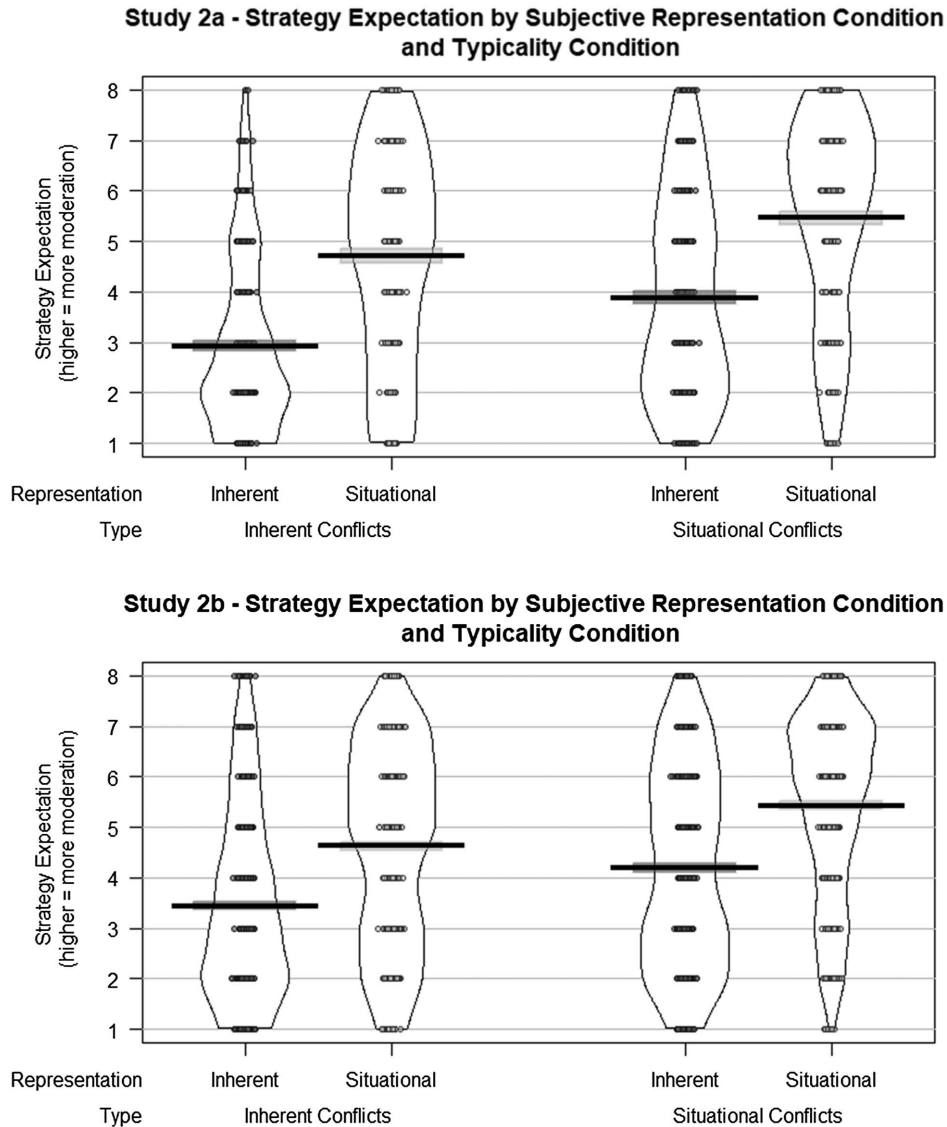
Study 3b was an exact, preregistered (<https://aspredicted.org/s8zp2.pdf>) replication of Study 3a using a larger sample size. For both studies, we recruited Prolific workers in the United States with an approval rate >95%. Seventy-five workers participated in Study 3a (age: $M = 41.80$, $SD = 13.89$; gender: 43 female, 27 male, four nonbinary, and one did not report), and 162 (age: $M = 42.43$, $SD = 14.86$; gender: 80 female, and 82 male) participated in Study 3b in exchange for \$1.35.

Conflict Representation Manipulation

Largely identical to Studies 2a and 2b, the present study design was a fully crossed 2 (typicality: inherent vs. situational) \times 2 (representation condition: inherent vs. situational) within-subjects experiment. However, in the present study, participants imagined themselves in each self-control scenario. In the inherent conflict condition, participants were instructed to imagine that they subjectively represented the conflict described as one that is inherent. After the scenario description, in the inherent condition, participants read: "You believe that [goal] and [indulgence] are inherently incompatible goals. To you, making progress on one creates setbacks for the other." In the situational conflict condition,

Figure 3

Violin Plots Depicting Data Distribution of Strategy Expectations by Subjective Representation and Typicality Conditions in Studies 2a and 2b



they were instructed to imagine that they subjectively represented the conflict described as one that is situational. The situational representation description read: “You believe that [goal] and [indulgence] are not inherently incompatible goals. To you, they are the kinds of goals that conflict due to constraints in time and resources.”

Strategy Preference

For each scenario, participants answered the question: “Given your belief about this dilemma between [goal] and [indulgence] in this scenario, how likely do you think you would opt for an abstinence or a balancing strategy?” using an 8-point scale ranging

from *extremely likely to opt for abstinence* to *extremely likely to opt for balancing*.

Results

Consistent with Studies 2a and 2b, we used linear mixed-effects regression models to predict strategy preference from typicality condition (coded as -1 for inherent and 1 for situational), representation condition (coded as -1 for inherent and 1 for situational) and their interaction in Studies 3a and 3b (see Tables 6 and 7).

Replicating our previous studies, participants preferred abstinence (vs. moderation) in typical inherent (vs. situational)

Table 6

Mixed-Effects Regression Model Predicting Strategy Preference From Typicality and Subjective Representation Conditions in Study 3a

Random effects						
Groups name	Variance		SD	Correlation		
Participant (intercept)	.74		0.86	.31		
Slope for condition	.28		0.53			
Scenario (intercept)	.53		0.73			
Residual	3.58		1.89			
Number of observations: 900; groups: participants, 75; scenario, 12						
Fixed effects ($R^2m = .05$)						
Predictor	γ	SE	df	t	p	d
(Intercept)	3.75	.24	14.28	15.53	<.001	
Representation ^a	.20	.09	73.71	2.22	.029	.09
Typicality ^a	.50	.22	9.93	2.29	.045	.22
Representation \times Type	−.04	.06	740.31	−.69	.493	−.02

Note. Statistics that reflect critical tests of our theoretical framework are bolded. SE = standard error; df = degrees of freedom.

^a Coded as -1 for inherent and 1 for situational.

conflicts; Study 3a: $\gamma = .50$, $SE = .22$, $t(73.71) = 2.22$, $p = .029$, $d = .09$; Study 3b: $\gamma = .60$, $SE = .24$, $t(9.97) = 2.53$, $p = .030$, $d = .26$. Critically, as predicted, the experimental manipulation of subjective representation also influenced strategy preference. When participants imagined that they subjectively represented a conflict as inherent (vs. situational), they tended to prefer abstinence (vs. moderation); Study 3a: $\gamma = .20$, $SE = .09$, $t(9.93) = 2.29$, $p = .045$, $d = .22$; Study 3b: $\gamma = .22$, $SE = .06$, $t(160.50) = 3.87$, $p < .001$, $d = .09$. Further, this effect did not depend on the typicality; Study 3a: $\gamma = -.04$, $SE = .06$, $t(740.31) = -.69$, $p = .493$, $d = -.02$; Study 3b: $\gamma = .01$, $SE = .04$, $t(1610) = .32$, $p = .751$, $d = .01$ (see Figure 4), and was consistent across all self-control scenarios (see Supplemental Figure S8). These findings

Table 7

Mixed-Effects Regression Model Predicting Strategy Preference From Typicality and Subjective Representation Conditions in Study 3b

Random effects						
Groups name	Variance	SD	Correlation			
Participant (intercept)	.50	0.71	.06			
Slope for condition	.18	0.43				
Scenario (intercept)	.65	0.81				
Residual	3.83	1.96				
Number of observations: 1944; groups: participants, 162; scenario, 12						
Fixed effects ($R^2m = .07$)						
Predictor	γ	SE	df	t	p	d
(Intercept)	3.73	.24	11.10	15.30	<.001	
Representation ^a	.22	.06	160.50	3.87	<.001	.09
Typicality ^a	.60	.24	9.97	2.53	.030	.26
Representation \times Type	.01	.04	1,610	.32	.751	.01

Note. Statistics that reflect critical tests of our theoretical framework are bolded. SE = standard error; df = degrees of freedom.

^a Coded as -1 for inherent and 1 for situational.

support our prediction that, beyond the effect of self-control domain, individuals' subjective representations of self-control conflicts may causally influence their preferences for abstinence and moderation.

Discussion

Studies 3a and 3b confirmed that the findings from Studies 2a and 2b extend to decisions relevant for one's self: Manipulating subjective conflict representations causally impacted people's own strategy preferences. This effect went beyond the effect that people, on average, preferred abstinence for typical inherent conflicts and moderation for typical situational conflicts. This evidence supports our prediction that inherent versus situational conflict representations are systematically associated with abstinence versus moderation strategies, respectively. In Study 4, we explored a further implication of this association, examining how people make inferences about others when observing the latter's self-control strategy preferences.

Study 4: Manipulating Strategy Choice

Study 4 presented participants with the same scenarios from Studies 2a and 2b. However, rather than manipulating how targets represented the conflicts and asking participants to predict the strategies targets might prefer, Study 4 manipulated the strategies that targets adopted and assessed participants' inferences about the targets' conflict representations. To the extent that people systematically associate conflict representations with strategy preferences, participants should infer that those practicing abstinence versus moderations represent the conflicts as inherently versus situationally incompatible, respectively. Consistent with the preceding experiments, we predicted that this effect of experimentally manipulated strategy choice would have an effect, above and beyond the effects that typically inherent versus situational conflicts might have, on participants' inferences about targets' conflict representations.

Method

Participants

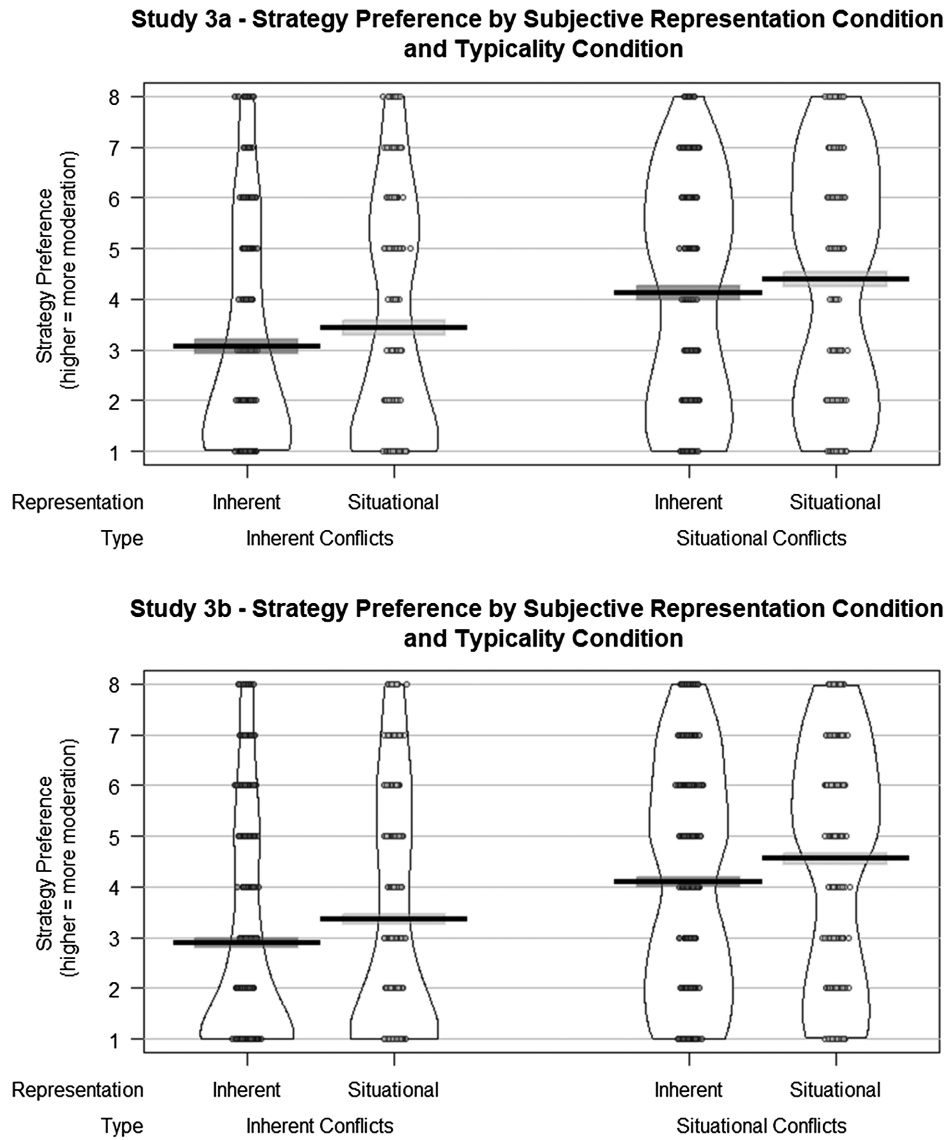
Seventy-five Prolific workers (age: $M = 39.92$, $SD = 14.90$; gender: 35 female, 39 male, one nonbinary) in the United States with an approval rate >95% participated this study in exchange for \$1.29.

Strategy Choice Manipulation

After providing informed consent, participants read that we were interested in their impressions about targets based on how they acted when faced with various dilemmas. We then presented participants adapted versions of the 12 scenarios used in Studies 2a and 2b. In each scenario, participants were given information about a target's self-control conflict and then the strategy the target decided to implement. Recall that half of these scenarios were typical inherent conflicts, whereas the other half were typical situational conflicts. Within each set of six, the stimuli presentation program randomly selected three to describe the target as opting for abstinence and the other three to describe the target as opting for moderation. For example, in one scenario, the target was described as feeling conflicted between staying sober versus enjoying alcoholic drinks.

Figure 4

Violin Plots Depicting Data Distributions of Strategy Likelihood Judgments by Subjective Representation and Typicality Conditions in Studies 3a and 3b



In the abstinence condition, participants read that she “decided to prioritize abstaining from drinking completely and not have any drink even at holiday events.” In the moderation condition, they read that she “decided to prioritize abstaining from drinking for all other times but to allow herself to have a couple drinks at holiday events.” The strategy choice information was tailored to each scenario (see Appendix). We thus created a 2 (typicality: inherent vs. situational) \times 2 (strategy choice: abstinence vs. moderation) within-subjects design by manipulating information about the targets’ abstinence versus moderation decisions.

Conflict Representation Inferences

After reading each scenario, participants were provided definitions of inherent and situational conflicts as in previous studies and responded to the question: “Given [the target’s] decision in this situation, how much do you think [he/she] considers the dilemma between [goal] and [indulgence] as an inherent or a situational conflict?” They answered using an 8-point scale ranging from *completely an inherent conflict* to *completely a situational conflict*.

Results

We conducted a mixed-effects model to predict conflict representation from the typicality condition (coded as -1 for inherent and 1 for situational), the strategy choice conditions (coded as -1 for abstinence and 1 for moderation), and their interaction. As in our previous studies, the model accounted for random intercepts by participants, random slopes by participants depending on scenario typicality, random slopes by participants depending on strategy choice condition, and random intercepts by scenario.

As expected, we observed an effect of typicality on representation. Participants inferred that the target represented typically inherent (vs. situational) conflicts as more inherent (vs. situational), $\gamma = .87$, $SE = .13$, $t(22.22) = 6.72$, $p < .001$, $d = .38$. However, beyond this effect, there was an effect of our manipulation of strategy choice: Participants inferred that targets who chose abstinence (vs. moderation) represented conflicts as more inherently (vs. situationally) incompatible, $\gamma = .45$, $SE = .10$, $t(74.35) = 4.51$, $p < .001$, $d = .20$. This latter effect did not depend on typicality, $\gamma = .02$, $SE = .07$, $t(672.91) = .30$, $p = .761$, $d = .01$ (see Figure 5).

Discussion

Study 4 provided additional evidence that people systematically associate inherent versus situational conflict representation with abstinence versus moderation, respectively, by exploring inferences that perceivers make about targets' conflict representations after observing the latter's self-control strategy decisions. Replicating our previous studies, participants generally inferred that targets would represent typical inherent (vs. situational) conflicts as more inherent (vs. situational). Critically, beyond this effect, observing targets' strategy choice also impacted these inferences. Specifically, participants were more likely to infer that targets represented conflicts inherently (vs. situational) when the latter opted for abstinence (vs. moderation). We note that this effect of strategy

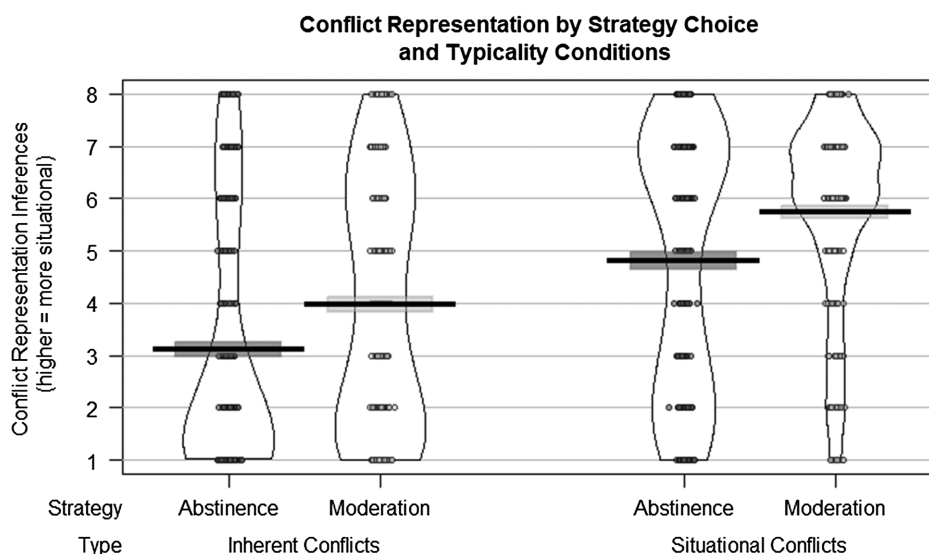
choice on conflict representation inferences was apparent across nearly all of the self-control scenarios presented to participants (see Supplemental Figure S9). Thus, not only do people make inferences about abstinence versus moderation preferences from targets' conflict representations but they also infer the converse: making inferences about targets' conflict representations from observations of their abstinence versus moderation preferences.

A major limitation of Studies 1–4 is the reliance on hypothetical scenarios that may have little self-relevance to participants. Study 5 extends these findings to a self-relevant domain with consequential outcomes and explores the behavioral implications of participants' strategy preferences. Specifically, we explored the effect of conflict representation on strategy preferences and social distancing behaviors in the context of the COVID-19 global pandemic.

Study 5: Predicting Social Distancing Behaviors During COVID-19 Pandemic

Early public health guidelines during the COVID-19 global pandemic asked people to practice “social distancing”—limiting or even eliminating in-person interactions with those outside one's household (Centers for Disease Control and Prevention, 2021). At the time, abstaining from unnecessary in-person social interactions was advertised as the most effective strategy for protecting oneself and others from illness (e.g., Honan, 2020). Nevertheless, many people did not fully adhere to such guidance (Reinders Folmer et al., 2021)—especially in locations where local public safety guidelines were more lax than others—and, in some cases, continued to socialize in-person (e.g., Hollingsworth et al., 2021). These decisions posed nontrivial risks of contracting and spreading COVID-19 when treatment options were limited and much about the disease was unknown. Moreover, these decisions had to be made on a regular basis for weeks—sometimes months—while communities were in “lock-down.” This context suggests that the self-control conflict between the goal to protect safety and health for oneself and

Figure 5
Violin Plots Depicting Data Distribution of Conflict Representation Inferences by Strategy Choice and Typicality Conditions in Study 4



others versus enjoying in-person interactions was relevant to many people. Thus, the COVID-19 global pandemic provided a unique opportunity to examine the impact of abstinence versus moderation preferences on behavioral implications—specifically, whether people comply with social distancing guidelines.

In Study 5, we measured participants' subjective representations of the conflict between "avoiding contracting and spreading COVID-19" and "enjoying in-person social interactions." Unique to this study, rather than directly assessing participants' preferences for abstinence versus moderation as we did in our previous studies, we instead observed their decisions to indulge in a series of hypothetical self-control scenarios that required them to choose between social distancing and participating in in-person social activities. In addition, we explored the behavioral implications of these preferences by observing social distancing behaviors using a simulation task that predicts the real-world likelihood of contracting COVID-19 (Fazio et al., 2021). Replicating previous studies but in a self-relevant and consequential context, we predicted that people who mentally represented conflict between health versus socializing inherently (vs. situationally) would be more likely to prefer abstinence (vs. moderation) as revealed by preferences to engage in social distancing rather than in-person socializing. In addition, to examine some of the behavioral implications of an association between conflict representations and strategy preferences, we examined whether abstinence (vs. moderation) preferences would lead to stricter social distancing behaviors in the simulation task.

Method

Participants

In March 2021, we recruited 330 Prolific workers in the United States with an approval rate >95% to participate this study in exchange for \$1.20. At this time, the United States was at the early phases of distributing COVID-19 vaccines (e.g., Stolberg, 2021; Centers for Disease Control and Prevention, 2022); nevertheless, many people, including those in our sample, had yet to be vaccinated at the time.

Participants first read that the study was about the COVID-19 pandemic and answered two questions to confirm that this context represented a meaningful self-control conflict for them. Specifically, participants responded yes or no to the following question: "Do you have a goal to avoid contracting and spreading COVID-19?" They then used a 5-point scale, ranging from *never* to *very often* to answer the question: "During the COVID-19 pandemic, how often have you experienced desires to enjoy in-person social interactions?" We excluded data from those that indicated "no" ($N = 23$) and "never" ($N = 14$) to these two questions, respectively, leading to a final $N = 263$ (age: $M = 31.94$, $SD = 12.34$; gender: 145 female, 109 male, nine nonbinary).

Conflict Representation

Participants then reported how they mentally represented the conflict between "avoiding contracting and spreading COVID-19" and "enjoying in-person social interactions" using an 8-point scale, ranging from *definitely better reflects an inherent conflict* to *definitely better reflects a situational conflict* ($M = 3.46$, $SD = 2.13$). Before completing this measure, participants also made two

unipolar ratings for each conflict type. Specifically, they answered the questions "To what extent do you think the dilemma between 'avoid contracting and spreading COVID-19' and 'enjoy in-person social interactions' reflects [an inherent/a situational] conflict?" using a 5-point scale ranging from *does not reflect (an inherent/a situational) conflict* to *completely reflects (an inherent/a situational) conflict*. These unipolar ratings correlated strongly with our bipolar measure; inherent rating: $r(263) = -.60$, $p < .001$; situational rating: $r(263) = .73$, $p < .001$. For ease of interpretation, we report analyses with the bipolar measure in the main text. Conducting the parallel analyses using the independent ratings yielded similar results (see online Supplemental Material).

Strategy Preferences

Rather than ask participants to directly self-report their strategy preferences as in previous studies, we instead presented participants with 10 scenarios that highlighted the self-control conflict between health and safety versus enjoying social interactions in the COVID-19 context (see Appendix). For instance, one scenario read: "You are invited to the funeral of a dear relative. Your family want you to attend in person and help during the following reception with about 20 guests." Participants indicated how likely they would be to socialize in-person in each scenario, using an 8-point scale, ranging from *extremely unlikely* to *extremely likely* (e.g., "Given this situation, how likely or unlikely is it that you would [socialize (e.g., go to the funeral)]?"). Each scenario was written to make clear to participants the conflict between the goals of health and safety versus enjoying social interactions. We inferred abstinence versus moderation preferences by examining participant's pattern decisions across these 10 scenarios in two ways. First, those opting for an abstinence versus moderation strategy should be less likely to indulge in any given scenario. Thus, the number of decisions people choose to abstain versus indulge may be one indicator of strategy preferences. A second and perhaps more conservative method is to code only those who completely refrained from any possibility of indulgence across all scenarios as those opting for the strategy of abstinence. We note that, although assessing strategy preferences in these two ways potentially confounds preferences with strategy implementation, we reasoned that the use of hypothetical scenarios reduced this concern to some degree given the relative lack of barriers to the latter.

Social Distancing Behaviors

Participants then completed a simulation task that assesses social distancing behaviors (Fazio et al., 2021; an online demonstration is available at <https://psychvault.org/social-distancing/>). This computer-based task simulates 10 ecologically valid COVID-19 relevant contexts and records participants' behavioral decisions. Fazio et al. (2021) documented that performance on this task predicted the actual likelihood of contracting COVID-19 more effectively than self-report assessments of social distancing adherence.⁸ Thus, the task appears to

⁸ We also included a one-item self-report measure of how strictly participants have personally followed social distancing recommendations by the government during demographic questions. Replacing the simulated physical distancing index with this measure, $r(249) = .53$, $p < .001$, in the analyses reported below yielded similar results (see online Supplemental Materials).

effectively capture aspects of people's in vivo social distancing behaviors.

It is important to note that many of the contexts presented in this task do not necessarily reflect the self-control conflict between health and safety versus enjoying social interactions; it is thus distinct from our strategy preference measure. For example, in one trial of the simulation task, participants used a slider to indicate how much space they would leave between a passing stranger and themselves at a pedestrian crossing. In another, participants chose between two walking routes through a park: a shorter, more efficient route that required passing a number of people versus a longer, more roundabout route devoid of others. Response scales varied and were tailored to fit each scenario. Following Fazio et al. (2021), we standardized participants' responses to make them comparable and averaged them to create a composite social distancing index ($\alpha = .72$; $M = -.003$, $SD = .60$).

Covariates

Finally, we measured a number of COVID-19 context-specific covariates that might predict strategy preferences or social distancing behaviors. The first was participants' perceived risk of COVID-19 from socializing in-person. We presented participants with the same scenarios in the strategy preference measure and asked them to indicate the perceived risk of contracting and spreading COVID-19 if they opted to socialize in each scenario (8-point scale, ranging from *extremely low risk* to *extremely high risk*). We averaged ratings across all scenarios to create an index for perceived risk of socializing in-person ($M = 5.34$, $SD = 1.14$). Following Fazio et al. (2021), participants also reported whether they had existing medical conditions that would increase risk of severe COVID-19 symptoms (yes: $N = 68$, no: $N = 195$) and whether their job required leaving home ($N = 58$) or not (i.e., they were working from home, lost their jobs, or were not employed; $N = 205$). Participants also reported their age and political ideology (7-point scale, ranging from *very liberal* to *very conservative*; $M = 2.66$, $SD = 1.53$), whether they had contracted COVID-19 (yes: $N = 32$; no: $N = 268$) and had received the vaccine (at least one dose: $N = 46$, no vaccine: $N = 217$). Finally, we measured their perception of how effective social distancing was in decreasing risk of contracting and spreading COVID-19 (5-point scale, ranging from *not at all effective* to *extremely effective*; $M = 4.10$, $SD = 0.95$).

Results

Most participants reported representing the conflict between "avoiding contracting and spreading COVID-19" and "enjoying in-person social interactions" as inherently (vs. situationally) incompatible, resulting in a positively skewed distribution (skewness = .46, kurtosis = 1.93; Supplemental Figure S13). For ease of interpretation, we report below analyses in which we used the raw conflict representation scores. Similar results emerged when we log-transformed scores or dichotomized conflict representations into inherent or situational conflict categories using median split ($Mdn = 3$), suggesting that these results are robust across analysis methods. We report the details of these latter analyses in online Supplemental Material.

Conflict Representation Predicting Strategy Preferences

As in the previous studies, we first tested the relationship between conflict representation and strategy preferences. Recall that this measure asked participants to report the likelihood that they would indulge in in-person interactions in each of the 10 scenarios. As noted earlier, we operationalized strategy preferences in two ways: (a) how likely participants reported they would indulge in each of the 10 scenarios and, more conservatively and (b) who among our participants completely refrained from in-person interactions across all scenarios.

We first examined participants' likelihood of indulging. Conflict representation was entered into a mixed-effects regression model predicting participants' likelihood of socializing in-person in each scenario while accounting for random intercepts by participants and scenarios. As expected, when participants represented the conflict as situational (vs. inherent), they were more likely to socialize even when there is a risk of contracting COVID-19, $\gamma = .25$, $SE = .04$, $t(261) = 25.55$, $p < .001$, $d = .11$. Importantly, this effect was still significant when we controlled for covariates (see Table 8).

We next examined whether conflict representations could predict who among our participants completely refrained from in-person interactions across the 10 scenarios. We tallied the number of scenarios for which participants indicated that they were likely to socialize in-person despite the risk of COVID-19 (when they selected ratings between 4 = *somewhat likely*, and 8 = *extremely likely*). Participants who never chose to socialize across the 10 scenarios were categorized as "true" abstainers ($N = 40$); the rest were categorized as moderators ($N = 223$). We entered participants' conflict representations into a logistic linear regression model to predict this abstainer versus moderator categorization. Consistent with our predictions, the more participants mentally represented the conflict as an inherent (vs. situational) conflict, the more likely they were to be "true" abstainers, $b = -.38$, $SE = .11$, $z = -3.54$, $p < .001$, $OR = .69$, 95% CI $OR [.56, .85]$. This effect remained significant when we control for covariates (see Table 9)—suggesting conflict representation is a unique predictor of "true" abstinence behavior.

Strategy Preferences Predicting Social Distancing

We next examined whether strategy preference predicts social distancing in the simulation task. Because we examined strategy preferences in two ways above—testing the continuous likelihood scores and the abstainer versus moderator categorization—we conducted two parallel analyses. First, we averaged participants' likelihood of socializing across all the self-control scenarios to yield a composite score as the index of strategy preference (lower scores indicated greater abstinence). As expected, a preference for abstinence (vs. moderation) predicted greater social distancing, $b = -.23$, $SE = .02$, $t(249) = -12.72$, $p < .001$, $\eta_p^2 = .39$. This effect remained significant after controlling for covariates (see Table 10). Examining the abstinence versus moderator categorization yielded similar results. Abstainers evidenced stricter social distancing ($M = .46$, $SD = .63$) than moderators ($M = -.09$, $SD = .56$), $t(48.15) = 5.00$, $p < .001$, and this effect remained significant after controlling for covariates (see Table 11).

Table 8
Mixed-Effects Regression Model in Study 5 Predicting Strategy Preferences

Random effects						
Groups name	Variance	SD				
Participant (intercept)	1.04	1.02				
Scenario (intercept)	.22	0.47				
Residual	1.55	1.24				
Number of observations: 2,630; groups: participants, 263; scenario, 10						
Fixed effects ($R^2m = .42$)						
Predictor	γ	SE	df	t	p	d
(Intercept)	3.71	.20	28.06	18.23	<.001	
Conflict representation ^a	.10	.03	253.40	3.01	.003	.06
Perceived risk of socializing in-person ^a	−.60	.02	2,440	−27.97	<.001	−.36
Perceived physical distancing effectiveness	−.35	.08	266	−4.24	<.001	.07
Age ^a	−.02	.01	254.20	−2.90	.004	−.02
Political ideology ^a	.14	.05	253.10	2.72	.007	.08
Job required leaving home ^b	.07	.08	253.30	.88	.382	.04
Had COVID-19 before ^b	.11	.11	253.10	1.02	.307	.07
Received COVID-19 vaccine ^b	−.03	.09	253	−.36	.718	−.02
Had underlying medical condition ^b	−.02	.08	253.30	−.28	.781	−.01

Note. Statistics that reflect critical tests of our theoretical framework are bolded. SE = standard error; df = degrees of freedom.

^aCentered on the sample mean. ^bCoded as yes = 1 and no = -1.

Mediation

Finally, to explore the behavioral implications of an association between conflict representations and strategy preferences, we conducted mediation analyses to explore whether there might be an indirect effect of conflict representation on social distancing via strategy preferences (see Figure 6). Again, we conducted two parallel analyses with the two indices of strategy preference. Results were conditioned on the same covariates as in the previous analyses. We used Hayes' PROCESS Macro Model 4 (Hayes, 2013) to conduct the first mediation analysis. Participants who represented the focal self-control conflict as an inherent (vs. situational) conflict were more likely to abstain from socializing, $b = .09$, $SE = .04$, $t(241) = 2.48$, $p = .014$; and abstinence predicted greater social distancing than moderation, $b = -.14$, $SE = .03$, $t(240) = -5.29$, $p < .001$. Moreover, as expected, conflict representation influenced social distancing behavior via strategy preference, $M_{\text{indirect}} = -.01$, 95% CI $[-.02, -.002]$, although the direct effect was nonsignificant, $M_{\text{direct}} = .01$, 95% CI $[-.02, .04]$. This provides initial evidence that the affordances of inherent versus situational conflict representations prompted different preferences for abstinence versus moderation, which in turn guided social distancing behavior in the simulation task, even after controlling for previously established covariates.

We conducted a similar mediation analysis using the abstainer versus moderator categorization as the index for strategy preferences. We followed Barrett et al.'s (2019) recommendations and conducted a marginal mediation analysis that accommodates a categorical mediator. Mirroring the prior analysis, participants who represented the conflict as inherent (vs. situational) were more likely to be abstainers (vs. moderators), $b = -.31$, $SE = .12$, $z(253) = -2.67$, $p = .008$; and abstainers (vs. moderators) engaged in greater social distancing, $b = .32$, $SE = .09$, $t(240) = 3.62$, $p < .001$. This indirect effect of conflict representation on social distancing behavior via strategy choice was significant, $M_{\text{indirect}} = -.02$, 95% CI $[-.03, -.01]$, although the direct effect was not, $M_{\text{direct}} = .01$, 95% CI $[-.04, .06]$.

This provides additional evidence that conflict representations influenced social distancing in the behavioral simulation task via strategy preferences, above and beyond previously established covariates.⁹

Discussion

Study 5 demonstrates the link between conflict representation and abstinence versus moderation preferences in the context of the COVID-19 pandemic: a highly relevant and consequential issue to participants at the time. Consistent with previous studies, to the extent that participants represented "avoid contracting and spreading COVID-19" and "enjoy social in-person interactions" as inherently (vs. situationally) incompatible, they were more likely to practice abstinence (vs. moderation) as indicated by preferences for social distancing over engaging in in-person socializing activities. Notably, instead of relying on a direct self-report measure of strategy preference, this study observed participants' decisions across a range of situations. Further, preferences for abstinence (vs. moderation) critically predicted stricter social distancing as assessed by the behavioral simulation task. Finally, inherent (vs. situational) conflict representation—via its link through strategy preferences—appeared to guide social distancing behaviors in the simulation task.

⁹ Given findings from Study 4 and the correlational nature of Study 5, one might ask whether there was an effect of strategy preference on social distancing via conflict representation. Accordingly, we reanalyzed these data with strategy preference as the critical predictor and conflict representation as the mediator. Changing the models' specifications in this manner yields nonsignificant mediation, as suggested by the nonsignificant direct effects in the models presented in the main text. We argue that the analyses reported in the main text are conceptually more compelling. It seems more reasonable to suggest that people rely on their conflict representations to decide which strategy to enact (rather than inferring their representations after observing their own strategy preferences), particularly given the temporal sequence of how we measured the variables in this study.

Table 9

Logistic Regression Model in Study 5 Predicting Strategy Choice as Indicated by Likelihood of Being a “True” Abstainer (Coded as 1) Over Being a Moderator (Coded as 0)

Predictor	<i>B</i>	<i>SE</i>	<i>z</i> (253)	<i>p</i>	<i>OR</i>	95% CI <i>OR</i>
(Intercept)	−3.08	.57	−5.36	<.001	.05	[.01, .14]
Conflict representation ^a	−.31	.12	−2.67	.008	.73	[.58, .92]
Perceived risk of socializing in-person ^a	1.11	.25	4.43	<.001	3.02	[1.85, 4.93]
Perceived physical distancing effectiveness	−.50	.31	−1.91	.107	.61	[.33, 1.11]
Age ^a	.04	.02	2.24	.025	1.04	[1, 1.07]
Political ideology ^a	.001	.14	.01	.989	1	[.77, 1.30]
Job required leaving home ^b	−.001	.25	−.004	.997	1	[.62, 1.62]
Had COVID-19 before ^b	−.58	.42	−1.37	.172	.56	[.24, 1.29]
Received COVID-19 vaccine ^b	−.11	.26	−.42	.672	.90	[.54, 1.49]
Had underlying medical condition ^b	−.42	.25	−1.69	.091	.65	[.40, 1.07]

Note. Statistics that reflect critical tests of our theoretical framework are bolded. *SE* = standard error; *CI* = confidence interval.

^aCentered on the sample mean. ^bCoded as yes = 1 and no = −1.

These effects persist even when controlling for other important predictors of these health behaviors, such as perceived risk of socializing in-person and social distancing effectiveness. Taken together, these findings provide ecological validity to our findings and document the relevance of the proposed association between conflict representation and strategy preferences in a real-world context. However, as we articulated in the introduction, we do not predict that higher order strategic preferences will always and necessarily lead to strategy implementation, as many factors (beyond these preferences) influence what strategies people adopt in a given situation.

One might ask about the absence of a direct effect in our mediation models of conflict representation on social distancing behavior in the simulation task. This may have occurred due to unmeasured suppressors. We speculate that, at the time of this study—March 2021, more than a year into the global pandemic—many people may have concluded that complete avoidance of in-person social interactions was impossible. This might have pushed some of those with inherent representations pursuing abstinence to give up on social distancing as a strategy for advancing their health and safety goals. That is, inherent representation might have decreased social distancing through apathy or abandonment of the goal (akin to the “what the hell” effect; Cochran & Tesser, 1996).

Another possibility is that we did not assess engagement in alternative safety behaviors, such as strict face mask-wearing or only opting for outdoor gatherings. If they perceived social distancing as impossible to implement, those with inherent representation might have leveraged other options to protect health and safety. Thus, inherent representation might also decrease social distancing through increased engagement in alternative safety behaviors. Unfortunately, Study 5 did not include measures that might have addressed these possibilities. Moreover, the evolving nature of the pandemic (e.g., availability of vaccines) made it challenging to attempt a replication with such measures.

We note that a replication of this paradigm in the dieting domain—described in detail in the Supplemental Study S3—did not show differences in people’s strategy preferences as a function of conflict representation. Like Study 5, this study also inferred strategy preferences from people’s repeated decisions. We speculate that this replication failed for at least three reasons. First, as we have suggested, this indirect assessment of strategy preferences may be less sensitive than the more direct assessments that we used in earlier studies. We did not include a measure of behavioral implications in this replication and were thus unable to validate the preference measure behaviorally as we did in Study 5 (i.e., preferences predicted social distancing behavior). Second, we did not rigorously

Table 10

Stepwise Linear Regression Models in Which Strategy Preferences Predict Social Distancing in Study 5

Step	Predictor	<i>b</i>	<i>SE</i>	<i>t</i>	<i>df</i>	<i>p</i>	η_p^2
1	(Intercept)	−.001	.03	−.03	249	.979	
	Strategy preference ^a	−.23	.02	−12.72	249	<.001	.39
2	(Intercept)	.04	.06	.72	241	.472	
	Strategy preference ^a	−.14	.03	−5.27	241	<.001	.42
	Perceived risk of socializing in-person ^a	.12	.04	3.14	241	.002	.08
	Perceived physical distancing effectiveness	.11	.04	2.82	241	.005	.03
	Age ^a	.001	.003	.28	241	.779	0
	Political ideology ^a	.005	.02	.21	241	.831	0
	Job required leaving home ^b	−.03	.03	−.97	241	.332	0
	Had COVID-19 before ^b	.04	.05	.82	241	.415	0
	Received COVID-19 vaccine ^b	.02	.04	.47	241	.641	0
	Had underlying medical condition ^b	.04	.04	1.09	241	.332	0

Note. Statistics that reflect critical tests of our theoretical framework are bolded. *SE* = standard error.

^aCentered by sample’s mean. ^bCoded as yes = 1 and no = −1.

Table 11

Linear Regression Models in Which Strategy Choice (Moderator Coded as -1 and Abstainer Coded as 1) Predicts Social Distancing, Controlling for Covariates, in Study 5

Predictor	<i>b</i>	<i>SE</i>	<i>t</i>	<i>df</i>	<i>p</i>	η_p^2
(Intercept)	.16	.07	2.32	241	.021	
Strategy choice	.16	.04	3.61	241	<.001	.16
Perceived risk of socializing in-person ^a	.19	.03	5.60	241	<.001	.32
Perceived physical distancing effectiveness	.16	.04	4.09	241	<.001	.08
Age ^a	.001	.003	.44	241	.659	0
Political ideology ^a	-.02	.02	-.70	241	.486	0
Job required leaving home ^b	-.04	.04	-1.24	241	.217	0
Had COVID-19 before ^b	.04	.05	.85	241	.394	0
Received COVID-19 vaccine ^b	.03	.04	.65	241	.514	0
Had underlying medical condition ^b	.05	.04	1.44	241	.150	.01

Note. Statistics that reflect critical tests of our theoretical framework are bolded. *SE* = standard error.

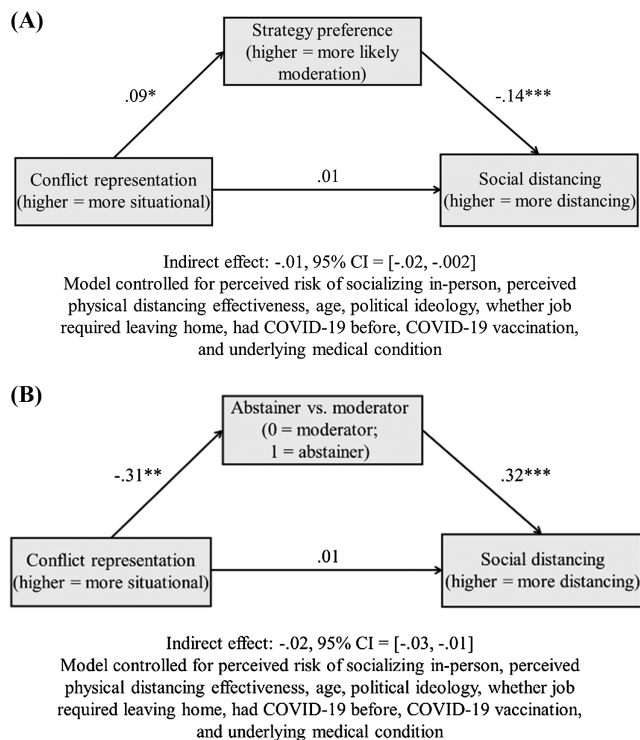
^a Centered by sample's mean. ^b Coded as yes = 1 and no = -1.

assess covariates that may occlude the ability to detect an effect of conflict representation on strategy preferences in the dieting domain when the latter are assessed in more ecological valid (and thus “noisier”) conditions. Third, the unique features of the dieting domain may have constrained the ability to detect an effect of

conflict representation on strategy preferences. In contrast to the COVID-19 domain in which participants strongly preferred abstinence over moderation, most participants in the dieting domain preferred moderation. The dieting domain may be unique in that everyone must eat—thus, moderation may be a strong default that leaves little room for variation as a function of conflict representation. Understanding the boundary conditions for the association between conflict representations and strategy preferences that we have demonstrated will be an important direction for future research.

Figure 6

Mediation Analyses in Which Strategy Preferences (Measured as Continuous Socializing Likelihood in Panel A and Abstainer vs. Moderator Categories in Panel B) Mediate the Relationship Between Conflict Representation and Social Distancing Behavior in Study 5



* $p < .05$. ** $p < .01$. *** $p < .001$.

Study 6: Strategy Evaluations and Judgments of Others

In Study 6, we examine another implication of the association between conflict representations and strategy preferences: how people reference their own conflict representations to evaluate others' goal pursuit decisions. We propose that people's conflict representations affect perceptions of strategy efficacy and influence how targets addressing self-control conflicts are perceived. We argue that the same behaviors carry very different meaning as a function of conflict representation. For example, allowing oneself to indulge occasionally in TV shows instead of studying may have divergent meanings for students who represent this conflict in inherent versus situational terms. For students who represent the conflict between academics versus entertainment in inherent terms, moderation may feel illogical—one cannot study effectively if distracted from their academic goals. However, for students who represent this conflict in situational terms, opportunities to watch one's favorite TV shows could be perceived as aiding goal pursuit—doing so allows them to return to studying with greater motivation, thus enhancing their academic goals. Thus, inherent versus situational conflict representations should lead people to see abstinence versus moderation as more effective self-control strategies, respectively, and influence how they judge those who adopt these two strategies.

As in our previous studies, participants in Study 6 were presented with targets confronting different typical inherent and typical situational conflicts. Participants first indicated to what extent they personally represented these self-control conflicts as inherent versus situational. We then manipulated whether the target in the scenario opted for a strategy of abstinence versus moderation. Participants

judged the target's character and evaluated how effective the target would be at achieving their global goals. We predicted that participants' responses would be conditional on the match (vs. mismatch) between their own inherent versus situational conflict representations and targets' abstinence versus moderation strategy preferences, respectively. Specifically, we predicted that, when participants themselves represented the conflict in more inherent (vs. situational) terms, they would evaluate the targets' matching moderation (vs. mismatching abstinence) strategy as more effective and judge these targets more positively.

Method

Participants

Eighty Prolific workers (age: $M = 39.92$, $SD = 14.90$; gender: 35 female, 39 male, one nonbinary) in the United States with an approval rate >95% participated this study in exchange for \$1.34.

Typicality Manipulation

In the main task, participants saw the same 12 scenarios used in Studies 2a, 2b, and 4 in which targets were described as facing self-control conflicts—half of which represented typical inherent conflicts and the other half of which represented typical situational conflicts.

Own Conflict Representation

For each scenario, participants first used an 8-point fully labeled scale, ranging from *completely an inherent conflict* to *completely a situational conflict*, to respond to the question: "Imagine that you are in the situation described above. To what extent would the dilemma between [goal] and [indulgence] reflect an inherent or a situational conflict for you?"

Strategy Manipulation

After indicating how they personally represented the conflict, participants were asked to consider the scenario again. At this time, as in Study 4, we manipulated the target's strategy preferences by providing information about whether the target opted for abstinence versus moderation in this situation. Thus, by manipulating information about the targets' strategy preferences, we created a 2 (typicality: inherent vs. situational) \times 2 (strategy choice: abstinence vs. moderation) within-subjects experiment.

Judging Others' Self-Regulation

Participants then indicated the extent to which they thought the target in the scenario was wise, competent, and smart by using 7-point fully labeled response scales, ranging from *extremely (wise/incompetent/smart)* to *extremely (unwise/competent/foolish)*, to respond to three questions: "Given [target]'s decision in this situation, to what extent would you describe [him/her] as [wise/incompetent/smart] or [unwise/competent/foolish]?" We coded responses so that higher scores reflect greater wisdom, competence, and smartness. The three ratings highly correlated with each other, $r(879) = \{.84, .87, .94\}$, $ps < .001$, $\alpha = .94$, and thus, we averaged them to create a single index of positivity ($M = 5.01$, $SD = 1.84$).

Evaluating Strategy Effectiveness

Additionally, after providing these judgments, participants used a 5-point fully labeled scale, ranging from *not at all* to *extremely*, to answer the question: "To what extent do you think [target] would be effective at achieving [his/her] goal to [goal]?" ($M = 3.39$, $SD = 1.37$). We note that strategy effectiveness and positivity correlated positively, $r(879) = .82$, $p < .001$; however, we report these outcomes separately as they represent distinct theoretical constructs.

Results

We were primarily interested in the extent to which the match (vs. mismatch) between perceivers' own conflict representations and targets' strategy preferences would predict perceivers' evaluations of strategy effectiveness and positivity judgments of the targets. The study design allowed us to examine the effects of perceiver's subjective representations and target's strategy preferences, controlling for any match between typicality and target's strategy.¹⁰ Thus, we conducted two parallel mixed-effects models in which strategy effectiveness and positivity judgments were predicted by typicality (coded as -1 for inherent and 1 for situational), subjective representation (decomposed into within- and between-subjects variance as in Study 1), and each of their interactions with target's strategy decision (coded as -1 for abstinence and 1 for moderation). The critical terms are the two-way interactions between perceivers' subjective representations and targets' strategy preferences—with the former modeled at both between- and within-subjects levels. Whereas the between-subjects level captures the trait-level differences in the tendency to represent the scenarios as inherent versus situational (i.e., individual differences), the within-subjects level captures shifts in representation as a function of each scenario relative to participants' average. As in Study 4, the models accounted for random intercepts by participants, random slopes by participants depending on scenario typicality, random slopes by participants depending on target strategy preference condition, and random intercepts by scenario. Results from these models were similar (Tables 12 and 13), and thus, we present them in parallel below.

First, we note that participants generally evaluated abstinence as more effective than moderation, $\gamma = -.75$, $SE = .04$, $t(77.56) = -18.07$, $p < .001$, $d = -.74$, and judged targets that pursued abstinence (vs. moderation) more positively, $\gamma = -.84$, $SE = .06$, $t(77.87) = -14.07$, $p < .001$, $d = -.58$. Critically, as predicted, strategy effectiveness and positivity judgments also depended on the match between participants' subjective conflict representations and targets' strategy preferences. This was particularly true when representations were assessed as an individual difference (between-subjects variance)—effectiveness: $\gamma = .21$, $SE = .04$, $t(77.78) = 5.07$, $p < .001$, $d = .21$, positivity: $\gamma = .27$, $SE = .06$, $t(78.26) = 4.27$, $p < .001$, $d = .19$. Results were similar when representations were assessed as a function of scenario within individuals (within-subjects variance)—effectiveness: $\gamma = .03$, $SE = .01$, $t(822.33) = 2.59$, $p = .010$, $d = .03$, positivity: $\gamma = .03$, $SE = .02$, $t(827.12) = 1.44$,

¹⁰ Results of the matching effect between typicality and target's strategy largely parallels the matching effect between perceiver's subjective representations and target's strategy that we report in the main text and are reported in more detail in Supplemental Section SB.

Table 12

Mixed-Effects Regression Model Predicting Strategy Effectiveness Judgments From the Match Between Perceivers' Subjective Conflict Representations in Study 6

Random effects							
Groups name	Variance	SD		Correlation			
Participant (intercept)	.13	0.37					
Slope for typicality	.05	0.22		.04			
Slope for strategy	.08	0.28		−.64			
Scenario (intercept)	.05	0.22					
Residual	.71	0.84					
Number of observations: 960; groups: participants, 80; scenario, 12							
Fixed effects ($R^2m = .47$)							
Predictor	γ	SE	df	t	p	d	
(Intercept)	3.39	.08	17.67	42.83	<.001		
Typicality	.42	.07	13.14	5.77	<.001	.42	
Representation (between-subjects)	−.07	.05	78.03	−1.37	.175	−.07	
Representation (within-subjects)	.002	.01	840.07	.131	.896	.002	
Strategy	−.75	.04	77.56	−18.07	<.001	−.74	
Strategy × Typicality	.30	.03	726.19	10.27	<.001	.30	
Strategy × Representation (between)	.21	.04	77.78	5.07	<.001	.21	
Strategy × Representation (within)	.03	.01	822.33	2.59	.010	.03	
Effect of	Conditioned on	γ	SE	df	t	p	d
Simple Slopes Analysis for Strategy × Representation (Between) Interaction							
Representation	Abstinence	−.28	.08	78.03	−3.66	<.001	−.28
Representation	Moderation	.14	.05	77.93	2.83	.006	.14
Simple Slopes Analysis for Strategy × Representation (Within) Interaction							
Representation	Abstinence	−.03	.02	832.42	−1.65	.100	−.03
Representation	Moderation	.03	.02	857.57	1.93	.054	.03

Note. Perceivers' subjective conflict representations were coded so that higher scores reflect situational versus inherent representation (decomposed into within- and between-subjects variance as in Study 1). Targets' strategy preferences were coded as -1 for abstinence and +1 for moderation. Model statistically controlled for any effects and interactions with scenario typicality. Simple slopes analyses are also reported. Statistics that reflect critical tests of our theoretical framework are bolded.

$p = .152$, $d = .02$. These interactions are depicted graphically in Figure 7. See Tables 12 and 13 for details of simple slopes analyses.

Individual Differences in Conflict Representations

When considering targets who pursued moderation, participants who tended to represent the conflicts in situational terms reported that moderation was more effective for goal pursuit, $\gamma = .14$, $SE = .05$, $t(77.93) = 2.83$, $p = .006$, $d = .14$, and judged the targets more positively, $\gamma = .17$, $SE = .07$, $t(78.09) = 2.26$, $p = .027$, $d = .12$, than participants who tended to represent the conflicts in inherent terms. By contrast, when considering targets who pursued abstinence, participants who tended to represent conflicts in situational terms evaluated abstinence as less effective, $\gamma = -.28$, $SE = .06$, $t(78.03) = -3.66$, $p < .001$, $d = -.28$, and judged these targets more negatively, $\gamma = -.38$, $SE = .10$, $t(77.98) = -3.76$, $p < .001$, $d = -.27$, than participants who tended to represent conflicts in inherent terms.

Conflict Representations Within Individuals

When considering targets who pursued moderation, participants evaluated moderation as more effective for goal pursuit, $\gamma = .03$, $SE = .02$, $t(857.57) = 1.93$, $p = .054$, $d = .03$, when they represented

conflicts depicted in scenarios as more situational (vs. inherent) relative to their own average. On the other hand, when considering targets who pursued abstinence, participants evaluated abstinence as nonsignificantly less effective, $\gamma = -.03$, $SE = .02$, $t(832.42) = -1.65$, $p = .100$, $d = -.03$, when they represented conflicts depicted in scenarios as more situational (vs. inherent) relative to their own average. Analysis of positivity judgments generally revealed a similar pattern of results but was not statistically significant (see Table 13 and Figure 7).

Discussion

Study 6 explored how perceivers' conflict representations influence how they evaluate the effectiveness of abstinence versus moderation strategies as well as judge others' self-regulation efforts. When there was a match between perceivers' inherent versus situational conflict representation and targets' preferences for abstinence versus moderation, respectively, perceivers generally viewed targets' strategies as more effective for goal attainment and were more likely to judge targets positively. When there was a mismatch, however, perceivers generally viewed targets' strategies as less effective and judged targets more negatively. These data are consistent with the notion that conflict representations fundamentally

Table 13

Mixed-Effects Regression Model Predicting Positivity Judgments From the Match Between Perceivers' Subjective Conflict Representations in Study 6

Random effects							
Groups name	Variance	SD	Correlation				
Participant (intercept)	.25	0.50					
Slope for typicality	.11	0.32	.05				
Slope for strategy	.16	0.40	-.46			-.31	
Scenario (intercept)	.06	0.25					
Residual	1.52	1.23					
Number of observations: 960; groups: participants, 80; scenario, 12							
Fixed effects ($R^2m = .39$)							
Predictor	γ	SE	df	t	p	d	
(Intercept)	5.00	.10	19.79	50.32	<.001		
Typicality	.53	.09	14.44	5.82	<.001	.37	
Representation (between-subjects)	-.11	.07	78.01	-1.53	.130	-.07	
Representation (within-subjects)	.02	.02	826.14	.94	.349	.01	
Strategy	-.84	.06	77.87	-14.07	<.001	-.58	
Strategy \times Typicality	.45	.04	729.27	10.61	<.001	.31	
Strategy \times Representation (between)	.28	.06	78.26	4.72	<.001	.19	
Strategy \times Representation (within)	.03	.02	827.12	1.44	.152	.02	
Effect of	Conditioned on	γ	SE	df	t	p	d
Simple Slopes Analysis for Strategy \times Representation (Between) Interaction							
Representation	Abstinence	-.38	.10	77.98	-3.76	<.001	-.27
Representation	Moderation	.17	.07	78.09	2.26	.027	.12
Simple Slopes Analysis for Strategy \times Representation (Within) Interaction							
Representation	Abstinence	.01	.03	836.83	-.30	.761	-.01
Representation	Moderation	.04	.03	850.72	1.71	.087	.03

Note. Perceivers' subjective conflict representations were coded so that higher scores reflect situational versus inherent representation (decomposed into within- and between-subjects variance as in Study 1). Targets' strategy preferences were coded as -1 for abstinence and +1 for moderation. Model statistically controlled for any effects and interactions with scenario typicality. Simple slopes analyses are also included. Statistics that reflect critical tests of our theoretical framework are bolded.

alter what the two strategies mean to people, influencing what strategies are seen as effective and how they evaluate others.

Study 6, however, also suggests that people may not fully appreciate the value of moderation. Participants generally reported abstinence to be more effective than moderation as a self-control strategy, despite initial experimental evidence suggesting that both can be effective (Coelho do Vale et al., 2016). These lay intuitions mirror a long research tradition of equating self-control with abstinence (e.g., Ainslie, 1975; Baumeister & Heatherton, 1996; Mischel et al., 1989; Thaler & Shefrin, 1981). Further exploring the implications of this potentially mistaken lay belief for the subjective experience and outcomes of goal pursuit may be a fruitful direction for future research.

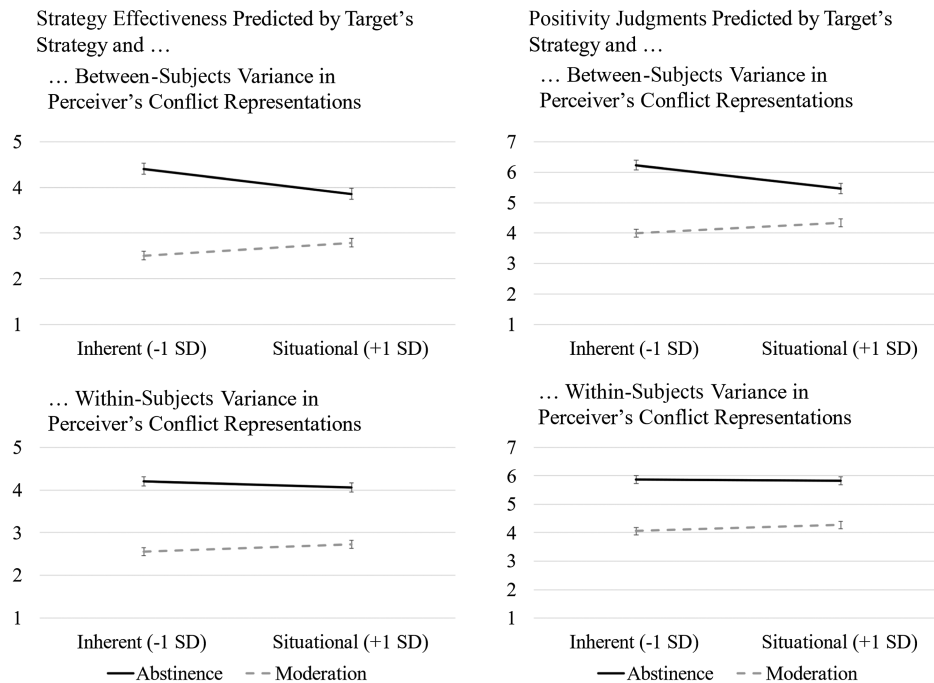
General Discussion

The present work is the first that we are aware of to suggest one can predict a priori who and when individuals prefer to pursue abstinence versus moderation as strategies of self-control. Findings from 10 of 11 studies (eight in the main text, two of three in online Supplemental Material) supported our hypothesis that inherent versus situational representations of self-control conflicts are systematically associated with abstinence and moderation preferences, respectively. Study 1 (and two pilot studies described in

the online Supplemental Material) demonstrated that people tend to prefer abstinence versus moderation in certain domains because they represent conflicts within those domains in inherent versus situational terms. Studies 2a, 2b, 3a, and 3b provided more compelling experimental evidence that inherent (vs. situational) subjective representations causally influence people's preferences for abstinence (vs. moderation). Collectively, these studies provided initial evidence for an association between conflict representations and strategy preferences.

Studies 4–6 explored the implications of this association for person perception and goal pursuit. Study 4 explored a novel implication by examining the reverse causal link. Specifically, perceivers inferred that targets mentally represented self-control conflicts in inherent versus situational terms when those targets opted for abstinence versus moderation. In other words, perceivers' inferences about targets' mental states appear to be influenced in part by this association. Study 5 provided additional evidence for this association in the personally relevant, consequential context of the COVID-19 pandemic and explored social distancing as a behavioral implication. Specifically, inherent (vs. situational) conflict representation predicted preferences for abstinence (vs. moderation) in prioritizing safety and health over in-person socializing, which in turn, predicted people's social distancing behaviors. Finally, Study 6 explored how conflict representations influenced the perceived

Figure 7
Strategy Effectiveness (Left Panels) and Positivity Judgments (Right Panels) Predicted by Perceivers' Subjective Conflict Representations and Targets' Strategy Decisions in Study 6



Note. Representations were decomposed into between-subjects variance (top panels) and within-subjects variance (bottom panels).

effectiveness of abstinence versus moderation as self-control strategies and the social judgments perceivers made about those who adopted the former versus latter. Specifically, people were more likely to perceive abstinence relative to moderation as an effective strategy when it matched their inherent relative to situational conflict representations, while judging those who preferred mismatching strategies more harshly. Thus, beyond documenting an association between conflict representation and strategy preferences, the present work explores its influence on how people evaluate those strategies, pursue their goals, and judge others.

Implications

This work fundamentally challenges the traditional assumption that self-control necessarily entails abstinence. Despite recognizing that self-control often requires repeated decisions across multiple contexts (e.g., Ainslie, 1975; Rachlin, 1995), researchers have largely examined self-control as isolated decisions (e.g., Lopez et al., 2016; Milyavskaya et al., 2021; Mischel et al., 1989; Shiv & Fedorikhin, 1999). By contrast, the present work recognizes that people have preferences for strategies not only at the decision level (e.g., inhibition vs. distraction; Duckworth et al., 2016, 2018; Fujita et al., 2020) but also at a higher strategic level: preferences that may determine their goal pursuit experiences and outcomes. Identifying the higher level strategy that people are trying to implement provides important context with which to interpret single observations of behavior. When people are pursuing a strategy of abstinence, a single indulgence can be indicative of self-control failure; but when

they are pursuing a strategy of moderation, it is less clear how to interpret indulgences. Rather than argue that one strategy is better than the other, we draw from research that suggests that both strategies can be effective (Coelho do Vale et al., 2016). If true, it is sensible to then ask when and why people prefer one over the other. The present work is the first that we are aware of to address these questions.

By connecting inherent versus situational representations to preferences for abstinence versus moderation, respectively, we also contribute to the broader goal conflict literature (e.g., Gorges & Grund, 2017; Riediger & Freund, 2004). This latter work has largely examined conflicts between equally valued goals, without the imposed prioritization hierarchy that characterizes self-control conflicts. We show for the first time that this distinction between inherent and situational conflict representations can be extended to self-control conflicts and that it plays a central role in strategy preferences. This work, moreover, builds on a growing literature suggesting the importance of understanding self-control not as a function of objective features of the conflict situation but rather people's subjective understanding of those features (e.g., Fujita & Carnevale, 2012; Fujita et al., 2006).

In addition, the goal conflict literature tends to focus on the perspective of actors and has explored the implications of goal conflict representations for actors' outcomes such as well-being and goal success (e.g., Gorges & Grund, 2017; Riediger & Freund, 2004). By contrast, Study 4 may be the first study to document that people make inferences about how others represent goal conflicts from observations of strategy preferences; that is, we show for that

these goal conflict representations are a feature of person perception. Future work might continue to explore the implications of these inferences for evaluation of actors and other important person perception phenomena.

Assessing Abstinence Versus Moderation

This work represents an important first step in addressing the conceptual and empirical challenges of assessing strategy preferences. First, we argue for the advantages of assessing strategy preferences directly via self-report rather than indirectly via behavioral observation to avoid confounding strategy preferences and implementation. Second, for those who prefer behavioral assessments, the present work suggests that understanding people's conflict representations may facilitate the determination of preferences from behavior. That is, we can better interpret patterns of decisions when we understand how the underlying conflicts are subjectively construed. Moreover, by assessing conflict representations, researchers may be better positioned to draw stronger conclusions as to whether a single behavior truly represents a self-control failure or not. For smokers trying to quit, indulging in a celebratory cigar may constitute "failure" for those who construe such decisions as entailing inherent conflict (and thus likely practicing abstinence) but not necessarily for those who construe such decisions as entailing situational conflict (and thus likely practicing moderation).

We note, however, that knowing that an individual represents a conflict in situational terms is insufficient to determining whether indulging is a failure of self-control versus strategic decision that is harmless to the goal and/or one that aids goal pursuit. Therefore, identifying whether an indulgence is a failure or not for one who represents a conflict in situational terms may require information about the features and the context of that behavior. Jia et al. (2019) suggest that strategic indulgence occurs when one takes advantage of worthwhile opportunities (e.g., a special occasion) instead of indulging whenever possible. In addition, people might savor the indulgences and/or engage in compensatory planning—for instance, students who enjoy collegiate sports might study ahead of time to free up their schedules for game day. Without these features, an indulgence behavior in moderation might indeed be considered a self-control failure. As such, our research highlights important information needed to identify self-control failures that existing models have largely overlooked.

It is important to distinguish moderation as studied in the present work with goal balancing as studied by other researchers (e.g., Fishbach & Dhar, 2005; Fishbach & Zhang, 2008, 2009; Scholer, 2014). In our studies, we endeavored to make clear to participants that the goals in conflict were structured in a hierarchical manner: One goal (e.g., staying sober) was described as primary to the other (e.g., enjoy drinking with friends). This is a critical feature that distinguishes self-control conflicts from other goal conflicts (Fujita, 2011). In everyday life, however, such structure may not always be apparent. Indeed, research suggests that people may not view competing goals as "vertically" structured with one clearly superior to the other (Scholer, 2014). Instead, people may view competing goals "horizontally" or as operating at the same level, both of which are worthy of attaining. Our framework focuses on abstinence or moderation as strategies to prioritize the attainment of one "privileged" or preferred goal over another. Thus, the characteristics of "balancing" in past research may be distinct from those that we

highlight in the present article. Nevertheless, we leave open the possibility that, in parallel to our findings on self-control conflicts, inherent versus situational representations may be predictive of strategies that people engage in to manage "horizontal" goal conflicts, as revealed in phenomena such as goal disengagement or goal shelving (i.e., permanently or temporarily deprioritizing one goal in service of pursuing the other; Mayer & Freund, 2022).

Defining Self-Control

To the extent that people may choose to engage in abstinence versus moderation raises challenging conceptual questions to prominent models of self-control. Many define self-control in terms of abstinence (e.g., delay discounting, Ainslie, 1975; ego depletion theory, Baumeister & Heatherton, 1996; cue reactivity, Heatherton & Wagner, 2011; hot vs. cold systems, Metcalfe & Mischel, 1999). Even though these models can still speak to domains that are typically represented in inherent terms (e.g., addiction or resolving moral dilemmas), some individuals may nevertheless mentally represent these conflicts situationally and pursue moderation, as shown in our studies. These models must also wrangle with the question of whether moderation—enjoying local rewards in service of protecting and advancing more valued global goals—should be considered successful self-control. Most at present are silent to this issue.

Future Research

Tools for Self-Control

Our work raises new questions regarding recent attempts to identify various strategies or "tools" people use to advance their self-control efforts (e.g., Duckworth et al., 2014, 2016; Fujita et al., 2020; Hennecke & Bürgler, 2020). The conceptual basis for much of this research draws from abstinence-based models of self-control; that is, the focus has been on how to promote restraint from indulgences. For example, to promote abstinence, researchers have suggested precommitment techniques (Ainslie, 1975; Rachlin, 1995; Thaler & Shefrin, 1981) such as "future lock-in"—making irrevocable decisions in advance of encountering temptations that limit one's ability to indulge (Rogers & Bazerman, 2008). Other research has highlighted the moralization of self-control as a tool that enhances restraint from indulgence (e.g., Hofmann et al., 2018; Mooijman et al., 2018). Although effective as tools for promoting abstinence, it is unclear how useful they will be to those pursuing moderation.

More needs to be done to uncover the tools that those pursuing moderation might use and the underlying psychological mechanisms that support their implementation (e.g., Jia, Hirt, & Koh, 2019). To moderate effectively, people must be able evaluate whether a particular indulgence supports the pursuit of more valued goals. This may require considerable cognitive sophistication: People must not only evaluate the relevance of local rewards to their global goals but must also integrate this decision with others that they have made—appreciating the cumulative impact their decisions have had on goal progress. Tools that support this expansion of regulatory scope—the breadth of concerns that decision-makers are responsive to (Trope et al., 2021; see also Fujita et al., 2018)—may facilitate these considerations. These may include engaging in more abstract, high-level construal (e.g., Freitas et al., 2009; Trope et al., 2021),

mentally connecting one's current and future selves (Hershfield et al., 2009, 2011), leveraging third versus first person visual perspective (Libby & Eibach, 2011), and using distanced versus immersed self-talk (e.g., Orvell et al., 2019). Future work is needed to examine the tools that people may use to implement moderation successfully.

In addition, Study 6 provides preliminary evidence for the possibility that effective self-control may require "matching" representation and strategy. This possibility provides novel theoretical and practical insights to enhance self-control. Consider, for example, programs and treatments that advance abstinence versus harm reduction (moderation) approaches to address important health-related self-control problems such as substance abuse and safe sex (e.g., Cusick, 2006; Huhn & Gipson, 2021). Past work has generally focused on documenting whether one approach or the other is more effective (e.g., LaBrie et al., 2015; McKeganey et al., 2004). We instead suggest that the more critical question may be when and among whom these treatments are most beneficial. That is, it is possible that the effectiveness of abstinence versus harm reduction depends on whether individuals undergoing treatment represent the underlying self-control conflict as inherent versus situational. We might propose that abstinence may be more effective for those whose understanding of the problem is that of inherent conflict; harm reduction may be more effective for those whose understanding is that of situational conflict. Future research should examine this empirically.

Strategic Trade-Offs as Antecedents of Abstinence Versus Moderation

Beyond conflict representations, understanding why someone might opt for abstinence versus moderation requires appreciating various trade-offs these strategies present. Abstinence, for example, simplifies the calculations involved in decision making: One should always opt for the goal-consistent option over indulgence. Additionally, successfully following through with abstinence may allow people to attain the goal quickly and efficiently because one never engages in behavior that undermines goal outcomes. However, sustaining abstinence can be challenging. Unmet motivations (sustained suppression of immediate desires) grow in strength over time, making it increasingly difficult to forgo rewards that satisfy them (Denzler et al., 2010; Wegner, 1994). Moreover, when they do give into these desires, people may abandon their goals completely because they interpret these violations of abstinence as goal failures. The "what the hell" effect is a classic example of this phenomenon in the dieting context (for reviews, see Cochran & Tesser, 1996; Polivy & Herman, 1985): Restrained dieters—those who practice abstinent eating behavior—readily abandon their weight-loss goals and excessively consume food after being induced to eat an initial small yet high calorie treat (Herman & Mack, 1975). Thus, although abstinence simplifies decision making and guarantees success if carried through, it may be difficult to sustain over long durations of time and lead to all-or-none outcomes.

By contrast, decision making in moderation is computationally more difficult: There is no predetermined "right" answer. In any given instance, people must determine whether indulging is sensible or not, which requires sophisticated prospection, sensitivity to worthwhile opportunities, and careful consideration of various contingencies (Jia, Hirt, & Koh, 2019; Jia, Hirt, & Nowak, 2019). People may inadvertently risk goal failure if the frequency of

indulgences and the impact of those indulgences on goal progress are not carefully monitored. There is also a drawback in terms of efficiency: People do not always opt for opportunities to advance their goal and may suffer temporary setbacks from indulging. Nevertheless, because moderation allows indulgences during goal pursuit, people can satisfy unmet motivations before they grow into out-of-control urges. Indulging at the right opportunity when unmet motivations are unlikely to undermine goal success may help prevent phenomena such as the "what-the-hell effect" and subsequent goal abandonment (Sharif & Shu, 2017, 2021), making moderation more viable than abstinence. Moreover, such indulgences may even give people something to look forward to and feel rewarded for their efforts (e.g., Trope & Fishbach, 2000). Thus, compared to abstinence, moderation is more cognitively demanding and raises the prospects of failure yet may ultimately be more sustainable over time by addressing unmet desires and sustaining goal motivation.

Preliminary evidence provides evidence for these assertions. Coelho do Vale et al. (2016), for example, found that, although there was no difference in the weight loss between dieters who engaged in abstinence versus moderation, the latter were more motivated to continue their dieting efforts after 2 weeks and felt more positively (i.e., happy, satisfied, humorous) during goal pursuit. Jia, Hirt, and Koh (2019) further showed that high relative to low grade point average students were those who were successfully able to implement a moderation strategy, hinting at the intellectual sophistication that might be necessary to engage in the requisite cognitive computation to determine whether indulgence opportunities are harmless and/or advantageous for motivation. Future research should further explore these trade-offs and their implications for strategy preferences.

One might also explore how people come to learn these trade-offs. One possibility might be from experience: A smoker, after trying abstinence, might learn how difficult it is to sustain over time and might become more open to considering moderation. Alternatively, smokers who attempt moderation may learn how difficult it can be to determine when it is appropriate to indulge and may abandon such efforts in favor of the simplicity of abstinence. One might similarly ask whether certain forms of learning—social communication versus direct experience—are more effective for learning about these trade-offs.

Understanding Boundary Conditions

More can be done to explore the boundary conditions for when the association between conflict representation and strategy preferences is more or less apparent. As noted earlier, we describe a study that failed to show this association in the Supplemental Study S3; we speculate that this may be due to domain-specific features of the dieting context. Future work might explore factors that moderate the strength of the association that we have documented. Although we believe we have addressed the question of whether conflict representations predict strategy choices, we recognize that the question of when may deserve further attention. Identifying these boundary conditions will be critical to translate this work into practical intervention.

Limitations

Table 14 summarizes the limitations of the present research. Although we have discussed many of these issues elsewhere, here,

Table 14
Assessment of Limitations

Dimension	Assessment
Internal validity	
Is the phenomenon diagnosed with experimental methods?	Yes
Is the phenomenon diagnosed with longitudinal methods?	No, but we manipulated the phenomenon within-subjects.
Were the manipulations validated with manipulation checks, pretest data, or outcome data?	Domain manipulation was piloted in Supplemental Studies S1 and S2, and was validated with a manipulation check in Study 1. Studies 2a, 2b, 3a, 3b, 4, and 6 used direct manipulations that were derived from our theoretical conceptualizations.
What possible artifacts were ruled out?	Supplemental Study S2 and Study 1 ruled out the possibility that the proposed association between inherent versus situational representations and abstinence versus moderation strategy preferences could be explained by perceived conflict strength or the extent to which a self-control conflict is perceived as personally relevant. Studies 2a, 2b, 3a, and 3b provided further causal evidence for this association using within-subjects manipulations that control for many potential artifacts.
Statistical validity	
Was the statistical power at least 80%?	See Table 1 for more details. Overall, our studies have 80% power to, at minimum, detect a medium effect size.
Was the reliability of the dependent measure established in this publication or elsewhere in the literature?	See “Assessing Abstinence versus Moderation” section in the main text for more details.
If covariates are used, have the researchers ensured they are not affected by the experimental manipulation before including them in comparisons across experimental groups?	Yes, when applicable (Supplemental Study S2 and Study 1).
Were the distributional properties of the variables examined and did the variables have sufficient variability to verify effects?	Yes, see violin plots throughout the article as well as those in the online Supplemental Material.
Generalizability to different methods	
Were different experimental manipulations used?	Studies 2a and 2b manipulated subjective conflict representations in a slightly different context than Studies 3a and 3b. Nevertheless, future research should replicate our findings using other methods.
Were different outcome measures used?	Study 5 and Supplemental Study S3 used an indirect measure of strategy preferences instead of the direct measure used in the other studies. However, this indirect measure did not produce the same effect across the two self-control contexts that we examined (COVID vs. dieting; see Study 5: Discussion). It may be important to validate the efficacy of this measure in the dieting context (Supplemental Study S3) in future research, as well as examining the boundary conditions for the association between conflict representations and strategy preferences.
Generalizability to field settings	
Was the phenomenon assessed in a field setting?	No
Are the methods artificial?	Yes, our studies used hypothetical scenarios. We note, however, that Study 5 included a simulated social distancing behavioral task that has been shown to predict likelihood of contracting COVID-19 (Fazio et al., 2021).
Generalizability to times and populations	
Are the results generalizable to different years and historic periods?	We do not have data to address this issue. We sought to examine a wide range of self-control conflicts that people may face in life. However, it is unclear whether our findings would generalize to other times and historic periods.
Are the results generalizable across populations (e.g., different ages, cultures, or nationalities)?	We do not have data to address this issue. As discussed in the “Limitations” section, we relied on WEIRD samples for this research. Future research should examine generalizability in other populations.
Theoretical limitations	
What are the main theoretical limitations?	Our theoretical framework aims to understand people’s preferences for abstinence versus moderation; it does not make predictions for how effectively people may implement their preferred strategies in naturalistic, ecologically valid contexts. It will be important for future research to systematically examine the relationship between strategy preference and strategy implementation.

Note. WEIRD = Western, educated, industrial, rich, and democratic.

we elaborate on three additional issues. First, our studies relied on hypothetical scenarios. Moreover, in our experiments, we manipulated conflict representations by prompting participants to imagine that a target, or that they themselves, represent a self-control conflict in inherent versus situational terms. These empirical decisions may not be the most powerful nor ecologically valid approach to test

our hypotheses. These data at minimum, though, provide some evidence for a causal relationship between representations and strategy preferences. Nevertheless, future research might replicate our findings in more naturalistic settings and with methods that shape participants’ conflict representations in a more realistic and ecologically valid manner.

Second, our studies also relied on self-report measures to assess conflict representations. It is worth noting that assessing conflicts in this way is common in the goals literature (see Gorges & Grund, 2017, for review) and may have advantages for capturing subjective perceptions. Nevertheless, although participants appear to systematically associate inherent versus situational representations with preferences for abstinence versus moderation, one might be concerned that people do not readily have accurate insights about how they represent conflicts to determine strategy choice in practice. More can be done to develop measures for conflict representations that do not require introspection.

Third, we only tested our hypotheses using convenient student and online U.S.-based samples (WEIRD samples, Henrich et al., 2010), which may raise questions about the generalizability of the association between conflict representations and abstinence versus moderation strategies. We suspect that this association exists among individuals outside of the examined populations. At the same time, there may be social and cultural factors that impact the prevalence of inherent versus situational conflict representations and/or abstinence versus moderation preferences. For example, greater dialectical thinking (i.e., acceptance of contradictions, Spencer-Rodgers et al., 2018)—which is more prevalent in Eastern versus Western cultural contexts—might facilitate situational (vs. inherent) conflict representations and thus moderation (vs. abstinence). More could be done to examine the antecedents of conflict representations and how they may be learned; this may entail testing our theoretical framework with more diverse samples.

Fourth, one might suggest that the scope of the current investigation is relatively narrow: We focused on predicting strategy preferences. This is a novel research question with important theoretical implications. Nevertheless, as stated earlier, we did not empirically examine the stability of people's conflict representations or strategy preferences over time. We also did not try to document comparative efficacy of these two strategies as there is already initial evidence that both may be beneficial for goal outcomes (Coelho do Vale et al., 2016). Further, we did not systematically explore whether participants were successfully able to implement these strategies at critical moments, nor did we explore the implications for sustained self-control success. Many of the most interesting implications of strategy preferences may lie in people's real-life experiences and outcomes; as such, future research should explore these important extensions of our framework.

Conclusion

The current research questions the assumption that many make that abstinence is the primary strategy of self-control. We demonstrate that, given the prospect of repeated self-control, people systematically opt for abstinence or moderation depending on the extent to which they perceive the choice options within the self-control conflict as inherently versus situationally incompatible. This work—to our knowledge—presents the first systematic framework to predict when people prefer abstinence versus moderation, with important theoretical and methodological advances. Taken together, we emphasize the importance of taking seriously the recurrent nature of self-control and integrate traditional self-control literature with emerging evidence on the benefits of indulgences in goal pursuit. More broadly, our work raises questions about how best to

define self-control and encourages future research that addresses this issue.

Statement of Limitations

We provide initial empirical support that inherent versus situational conflict representations are associated with preferences for abstinence versus moderation strategies, respectively. We note, however, some empirical limitations. First, all studies used hypothetical scenarios; findings may not generalize to behavioral choices in a broader set of real-world situations. Second, we relied exclusively on self-report to assess representations; most of our studies also relied on self-report to assess strategy preferences. This methodology assumes that people are able and willing to provide accurate reports. We used more indirect behavioral measures of strategy preferences in two studies (Study 5 and Supplemental Study S3) by observing participants' self-control decisions across multiple contexts. Although Study 5 provided results similar to all of the others reported in the main text, Supplemental Study S3 did not. We suggest that the latter may reflect unique features of the context in which we tested our predictions (i.e., dieting) and that more can be done to explore boundary conditions for the effects that we document. Third, participants were largely from Western, educated, industrial, rich, and democratic (WEIRD) samples (Henrich et al., 2010): Results may or may not generalize to more diverse populations. We note too the relatively narrow scope of the present article: We only examine preferences for abstinence and moderation and do not address questions regarding strategy implementation, strategy efficacy, outcomes during goal pursuit or sustained self-control success, and/or whether representations or strategy preferences change over time. Future research should investigate these important questions.

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Appendix

Hypothetical Scenarios for All Relevant Studies

Abstinence and moderation choices represent manipulation materials for Supplemental Studies S1, S2, Studies 4 and 6. Studies in which participants imagined themselves facing self-control dilemmas used an adapted version of the scenarios below—the only difference was that names and pronouns were changed to “you.”

Typicality condition	Conflict	Self-control scenario	Abstinence choice	Moderation choice
Inherent	Goal: maintain religious beliefs Indulgence: experiment with sex	John deeply values his religion and strongly believes that engaging in any sexual act outside of marriage is sinful and immoral. He is currently single and in college. Many of his friends are exploring romantic relationships and often talk about sex, which makes him curious about developing a healthy sex life. John wants to start experimenting with sex, but doing so means violating his important religious beliefs.	Prioritize his religious beliefs and abstain from all sexual acts until marriage.	Prioritize his religious beliefs but allow himself to experiment with sex occasionally as long as he confesses and asks for forgiveness.
Inherent	Goal: become a vegetarian Indulgence: eat tasty meat dishes	Mason wants to start cutting meat completely from his diet because he recently learned how current practices in meat production are inhumane and morally wrong, even though he loved eating meat. As part of his daily routine, he enjoys free lunch at his company's cafeteria. Mason knows that the cafeteria provides vegetarian-friendly options but they are not tasty. However, the cafeteria's meat dishes are usually delicious. He is often tempted to eat the tasty meat dishes, but doing so would be a major ethical violation given his beliefs.	Prioritize eating only the vegetarian-friendly food and never choose the meat option.	Prioritize eating the vegetarian-friendly food most of the time but allow himself to choose the meat option sometimes.
Inherent	Goal: stay sober Indulgence: enjoy holiday parties that have alcohol	Emma is a recovering alcoholic, and she wants to stay sober. However, the holidays are approaching; she knows that there will be many social gatherings where people will be drinking to celebrate the occasion. She wants to enjoy the gatherings; however, she is concerned that seeing other people drink will make her drink.	Prioritize abstaining from drinking completely and not have any drink even at holiday events.	Prioritize abstaining from drinking for all other times but allow herself to have a couple drinks at holiday events.
Inherent	Goal: stay clean from drugs Indulgence: hang out with childhood friends	Michelle is a recovering opioid addict. After coming home from rehab, she is determined to stay clean. She has a group of childhood friends that she enjoys spending time with. However, some of those friends were her contacts to get more drugs. While she wants to spend time with her friends, Michelle knows that doing so might tempt her to use drugs again.	Prioritize staying clean and never meet up with her childhood friends.	Prioritize staying clean but allow herself to meet up with her childhood friends occasionally.

(Appendix continues)

Appendix (continued)

Typicality condition	Conflict	Self-control scenario	Abstinence choice	Moderation choice
Inherent	Goal: be faithful to spouse Indulgence: flirt with attractive others	William is newly married, and he wants to stay faithful to his partner. However, he misses the excitement of meeting new people and flirting at bars with attractive people. He wants to continue going to bars to flirt, but he knows that would make it harder for him to stay faithful.	Prioritize his marriage stop hanging out at bars all together and not meet any attractive people.	Prioritize his marriage but still hang out at bars occasionally while only looking at attractive people.
Inherent	Goal: quit smoking Indulgence: hang out with smoker friends	Concerned about his health, Lucas wants to quit smoking. However, he has a close group of friends who are all smokers that often gathers once a month. He wants to continue being around this friend group, though he knows that he will feel strong urges to smoke when he sees his friends smoking.	Prioritize not smoking in any situation and completely avoid being around his smoker friends.	Prioritize not smoking in most situations but can have a couple cigarettes during some hangouts with his smoker friends.
Situational	Goal: lose weight Indulgence: eat food without restrictions	Oliver is a boxer and needs to lose a lot of weight by the end of 2 months to qualify for a particular weight class in an important competition. At the same time, it is the start of the holiday season when his family often gathers to cook and enjoy good food together. Restraining the amount of food he eats during the gatherings will be challenging because he is a big foodie who enjoys eating as much food as he would like to.	Prioritize losing weight by eating smaller portions for all of his meals during the 2 months, without any cheat day.	Prioritize losing weight by eating smaller portions for most of his meals during the 2 months, but allow for cheat days when he can eat however much he would like to.
Situational	Goal: work out Indulgence: relax after work	Robert wants to become a firefighter at a department that is known to be tough on the physical examination. It is 5 weeks before the exam, and Robert wants to start a daily training routine to prepare for it. However, he is currently working full time, so the only time that he can work out is in the evening, after work when he feels tired. He knows he would often be tempted to go home and relax, but doing so can affect his preparations to become a firefighter.	Commit to his fitness training for the 5 weeks without skipping any sessions.	Prioritize his fitness training for the 5 weeks but allow himself to skip a couple sessions to go home and relax.
Situational	Goal: enjoy vacation with family Indulgence: keep up with work	Amelia is going on a 2-week family vacation. Because it is a rare occasion that her extended family can be together, she wants to focus on relaxing and spending time with them. At the same time, she runs an online business and spends a lot of time sending emails and calling clients. Because the business' peak season is during the vacation, she wants to continue doing some work during the 2 weeks, but doing so would prevent her from fully enjoying the vacation.	Prioritize all of her time with the family and aim to not work at all during those 2 weeks.	Prioritize the majority of her time with the family but aim to spend a couple hours to work during those 2 weeks.
Situational	Goal: develop good sleeping habits Indulgence: binge watch shows	Margaret is starting a baker apprentice position at a famous pastry shop. Working there requires her to work long hours and wake up before dawn every day. Margaret wants to eventually become a baker in the shop, so doing well in this apprenticeship is critical for her career. Because she is a night owl, she wants to develop a good sleeping habit to prepare for the job. It is currently a month before she starts working, and a couple of Margaret's beloved online shows are releasing their new seasons. Watching shows is her main source of entertainment, but she tends to binge watch them at night, which cuts down her sleeping time.	Prioritize developing a good sleeping habit and do not watch any episodes of the show she likes.	Prioritize developing a good sleeping habit but allow herself to watch a couple episodes of the show she likes during the month.

(Appendix continues)

Appendix (continued)

Typicality condition	Conflict	Self-control scenario	Abstinence choice	Moderation choice
Situational	Goal: study for scholarship Indulgence: watch TV shows	Ava is a 2nd-year college student. She is a high-achieving student and wants to get good grades to be eligible for a prestigious scholarship to study abroad in the summer. It is currently 3 weeks before her challenging final exams. Ava knows that she needs to spend a lot of time studying to get all A's on her exams because, if she does not, she will not be eligible to apply for the scholarship that she wants. At the same time, she also loves to follow the latest episodes of TV shows, and her favorite show is premiering a whole new season on Netflix starting this week. She wants to watch the new episodes, but doing so would distract her from studying.	Prioritize all of her time during the 3 weeks to study and completely avoid spending any time watching her favorite TV show.	Prioritize most of her time during the 3 weeks to study while allowing herself time to watch a couple episodes of her favorite TV show.
Situational	Goal: study for tests Indulgence: attend sports event	Noah is a college freshman. Because he has just started college, he wants to get off on the right foot and get high grades on his upcoming midterms in a few weeks. He has struggled with the material in his current classes so far, so he knows that he needs to put a lot of time and effort into studying and preparing for his midterms over the next couple of weeks. At the same time, he is a big fan of his city's professional basketball team, and he knows that the city's team will be playing several games against some higher tier teams during this time. He wants to go to the games, but doing so would reduce the time he can dedicate to studying.	Prioritize all of his time during the next few weeks to study and completely skip all of the games that will happen.	Prioritize most of his time during the next few weeks to study but allow himself to go to one or two games.

Scenarios for COVID-19 Strategy Preference Measure in Study 5

- You are shopping at a crowded grocery store when you notice an old friend. You two lost touch even though you were best friends as kids. Your friend is not wearing any face covering.
- You have a close-knit group of five friends that regularly hang out but have not met recently because of the pandemic. One member recently got engaged, and people want to meet up in person for a celebration dinner.
- You are a huge fan of your local professional basketball team. The team will compete for a chance to enter the national playoffs soon. One of your friends got tickets to the game and invites you to come along.
- One of your friends recently gave birth to her first child and is hosting a baby shower. She plans to have an intimate gathering with brunch served at a local restaurant.
- One of your relatives just opened an upscale restaurant and invites you to an exclusive soft opening. Guests are asked to taste the food, experience the service, and provide feedback.
- A close friend asks you to join her first time working out at a gym. She plans to start exercising regularly and wants your support this first time.
- You are invited to the funeral of a dear relative. Your family wants you to attend in person and help during the following reception with about 20 guests.
- Your favorite indie band is coming to a popular local bar. Some of your friends are planning to go and ask if you would like to join.
- A friend invites you over to his place for lunch because he is moving to another state soon. He lives alone and has been avoiding in-person contact with people.
- You have a small friend group that does not usually gather because some people moved away. However, they recently came back to town, and everyone is planning an overnight camping trip to reconnect.

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