*Empirical Research Paper*

# Beliefs About Using Construal Level to Modulate Regulatory Scope

Personality and Social Psychology Bulletin
1–17

DOI: 10.1177/01461672261433130
journals.sagepub.com/home/pspb
Sage

**Phuong Q. Le[1*], Tina Nguyen[2*], Abigail A. Scholer[3], and Kentaro Fujita[2]**

## Abstract

Goals require considering the immediate present as well as distant times, places, people, and possibilities. Although proximal goals require sensitivity to local opportunities, distal goals require action plans robust to variability. Construal level theory proposes that people contract versus expand regulatory scope (i.e., the range of possibilities one accounts for) to address these challenges. A primary tool they use to do so is construal level: low-level construal (representation that highlights unique, idiosyncratic features of events) contracts scope; high-level construal (representation that captures essential, core features) expands scope. Fourteen experiments (4 in the main text, 10 in the Online Supplement) support these assertions by documenting meta-motivational beliefs. Lay people recognize the benefits of construal level for modulating scope across a gradient of temporal distance, and across multiple distance dimensions. They also appreciate diverse methods with which to induce differences in construal level, including social preferences. We discuss theoretical and methodological implications.

## Keywords

regulatory scope, construal level, psychological distance, metamotivation

Received: July 3, 2025; accepted: February 26, 2026

## Introduction

Goal pursuit requires mental travel across time, places, people, and possibilities. For example, starting a business requires effort not only today, but also next week, next month, and next year. Aspiring business-owners must meet clients both here and there, interact with suppliers who are similar as well as dissimilar to themselves, and consider likely and unlikely changes in the market. Critically, the same task (e.g., starting a business) can present very different self-regulatory challenges depending on its psychological distance (i.e., how removed the task is from direct experience; Trope & Liberman, 2010). Although psychologically distal tasks (e.g., launch a business a year from now) require accounting for multiple possibilities and contingencies, psychologically proximal tasks (e.g., launch a business tomorrow) require people to be sensitive to subtle changes in their local environments and tailor responses accordingly.

Although addressing psychological distance is central to self-regulation, it has not received the attention one might expect in the literature. In the present paper, we address one question that remains unclear: whether people are attuned to the self-regulatory challenges psychological distance presents and understand the tools at their disposal for addressing these challenges. In addition, we explore a novel implication of people's beliefs about whether and how to respond to psychological distance: how people choose goal pursuit partners.

### *Psychological Distance and Regulatory Scope*

Construal level theory (CLT; Trope et al., 2021) proposes that people address the challenges associated with psychological distance by modulating regulatory scope: the range of concerns that people account for in goal-directed thoughts, feelings, and behaviors. Modulating scope involves balancing trade-offs. Contracting scope allows for greater sensitivity to a narrow set of concerns relevant to immediate local

[1]University of Chicago Booth School of Business, IL, USA
[2]The Ohio State University, Columbus, USA
[3]University of Virginia, Charlottesville, USA

*These authors contributed equally to this work.

**Corresponding Author:**
Kentaro Fujita, Department of Psychology, The Ohio State University, 1827 Neil Avenue, Columbus, OH 43210, USA.
Email: fujita.5@osu.edu

contexts but may leave one unprepared for different circumstances. By contrast, expanding scope allows one to orient toward a broader range of concerns but limits one's ability to optimize responses to any given situation. As an example, consider a business executive preparing for a product launch. When the product is to launch soon, it is beneficial for her to contract the regulatory scope to focus on the specific consumers, retail locations, and likely investment outcomes pertaining to this new product. However, when the product is to launch in the more distant future, it is more advantageous for her to expand regulatory scope to consider new consumers, new retail locations, and ambitious yet potentially risky investments. Hence, although contracting scope tunes people to local contingencies, expanding scope helps them account for the span of possibilities.

Psychological distance refers to the relationship between a person and some event. The modulation of regulatory scope, by contrast, is a feature of the person. People modulate scope to regulate their actions and responses to a given task: that is, they must change something about the self to advance their goals. One can contrast this against other regulatory challenges in which people have the option to change the situation or appraisals of the task. Dieters, for example, often need to practice self-control to overcome food cravings. To do this, they can refuse to buy sweets (remove the temptations from the situation) or not look at them (redirect their attention; e.g., Duckworth et al., 2016; Fujita et al., 2020). Such modifications are often not possible as responses to the challenges of psychological distance—that is, one cannot avoid the problem of distance nor simply ignore it, at least not without potential negative consequences. Thus, we highlight a distinct form of self-regulation by studying the modulation of scope.

## *Construal Level as a Tool for Modulating Scope*

CLT proposes that humans have developed various mental and social tools to modulate scope (Trope et al., 2021). The most studied of these tools is construal level—how abstract or concretely people interpret events (Liberman & Trope, 2008; Trope & Liberman, 2010). Jogging, for example, can be construed more abstractly as "becoming healthier" or more concretely as "running down this street." Abstract (i.e., high-level) construal focuses people on features characterizing a broad array of possible events and instantiations—thereby supporting the expansion of regulatory scope. Concrete (i.e., low-level) construal, on the other hand, focuses people on idiosyncratic specifics within the current event—thereby supporting the contraction of regulatory scope. Given this, high-level and low-level construal are theorized to represent important tools for navigating psychological distance and proximity, respectively. Supporting this claim, when people are presented with distal versus proximal events, they are more likely to engage in high-level relative to low-level construal (Liberman & Trope, 2008; Trope & Liberman, 2010; Trope et al., 2021).[1] Two meta-analyses of over 250 experiments demonstrated a reliable and robust effect of psychological distance—across time, physical space, people, and possibilities—on construal level, which in turn systematically impacts how people think, feel, and behave (Soderberg et al., 2015).

## *Beliefs about Using Construal Level to Modulate Scope*

Early accounts of CLT suggested that people engage in high-level versus low-level construal in response to psychological distance or proximity due to over-learned cognitive associations (e.g., Trope & Liberman, 2010). More recent accounts, however, have emphasized that these associations reflect a functional response to the epistemic challenges of distance (e.g., Nguyen & Fujita, 2024; Trope et al., 2021): that is, they form because people repeatedly choose—implicitly or explicitly—construal level as a mental tool to modulate regulatory scope (Trope et al., 2021). This suggests that lay people may understand the unique self-regulatory challenges presented by psychological distance and recognize construal level as a useful response: the present research is the first to examine directly these beliefs. If people's beliefs accord with experimental lab research, this would provide stronger evidence for the assertion that they use construal level as a tool to modulate scope as CLT proposes. In addition, given some concerns about the reproducibility of the relationship between psychological distance and construal level (e.g., Calderon et al., 2020, in press), it is beneficial to replicate CLT's predictions using novel paradigms.

Our approach is inspired by research on metamotivation, which explores the role of beliefs in how people regulate the quantity and quality of motivational states to achieve desired ends (Fujita et al., 2024; Miele et al., 2020; Scholer et al., 2018). This approach embraces that motivational states present tradeoffs, and that a key challenge is to experience the right kind of motivation for the task at-hand. To regulate motivation and optimize performance, one must recognize what type of motivational state is adaptive for a particular task, and if necessary, use strategies that upregulate or sustain that motivational state (Miele & Scholer, 2018; Scholer & Miele, 2016). For example, when presented with a distal task, one must recognize that this requires expanding instead of contracting scope. Additionally, one must recognize tools with which to expand scope, such as inducing high-level construal by thinking about *why*. Lacking such knowledge may hinder successful regulation.

People's beliefs may be tacit or implicit (Wagner & Sternberg, 1985): people may intuit how motivation works but struggle to articulate or express it (Nisbett & Wilson, 1977). Thus, metamotivation research often assesses beliefs by presenting participants with scenarios and asking them to select the response that "feels right" (e.g., Nguyen et al., 2019; Scholer & Miele, 2016). The present work adopts

similar methods to examine whether people recognize high-level and low-level construal as tools for modulating scope.

People appear to hold some knowledge about high- and low-level construal, including how to induce these states and when to use each (MacGregor et al., 2017; Nguyen et al., 2019, 2020). This knowledge is associated with positive goal outcomes (Nguyen et al., 2023). Nguyen et al. (2019, 2020), for example, presented participants with performance tasks that benefit from engaging in high-level or low-level construal—respectively, tasks that demanded self-control (e.g., intertemporal decision-making, Fujita et al., 2006) or precision in behavioral execution (e.g., dart-throwing, Zimmerman & Kitsantas, 1996). Participants preferred preparatory exercises that induced high-level construal when anticipating self-control tasks, and those that induced low-level construal when anticipating behavioral execution tasks. This suggests that people can diagnose the construal level that would lead to superior outcomes and strategically select the preparatory activities that induces the appropriate construal.

This past work, however, has not addressed the self-regulatory challenges associated with psychological distance. Participants were presented with tasks that differed significantly in their objective features (e.g., intertemporal choice versus dart-throwing), which could provide myriad cues as to which construal level might be best for performance. CLT proposes that people have a deeper understanding of the functions of construal level: as an adaptive response to regulatory demands of psychological distance and proximity. Thus, people may also know how to engage in high-level construal when a task is distal, and to engage in low-level construal when the same task is proximal. The present work provides a critical test of this hypothesis by manipulating only the psychological distance of a given task while holding all other features constant, thereby providing the first direct test of people's beliefs about the function of construal level for modulating regulatory scope.

### *The Present Research*

Fourteen experiments (four in the main text, ten in the Supplementary Online Materials or SOM) (a) examined whether people recognize situations when they need to modulate regulatory scope, (b) explored to what extent they appreciate the various tools to modulate scope, and (c) tested a novel implication of these beliefs: how people select partners for goal pursuit. Experiments 1a and 1b examined whether people's beliefs about expanding versus contracting regulatory scope are sensitive to a gradient of temporal distance. Experiment 2 (along with the experiments in the SOM) investigated whether people's beliefs about when to modulate scope generalize across all four psychological distance dimensions (time, space, social, and hypotheticality). Experiment 3 examined how these beliefs impacted social preferences: whether people leverage others to modulate regulatory scope.

This research program explored people's beliefs across operationalizations of high-level and low-level construal (Table S1 in SOM). In the main text, we describe the results of experiments that largely use an operationalization adapted from Nguyen et al. (2019). Specifically, we used colloquial language to describe high-level and low-level construal (e.g., "Focusing on the forest instead of the trees" versus "Focusing on the trees, instead of the forest," respectively) and asked participants to indicate which type of thinking would best enhance performance tasks requiring the expansion versus contraction of regulatory scope. To explore generalizability, we also conducted experiments using other operationalizations, including thinking about why versus how (Freitas et al., 2004), engaging in global versus local visual processing (Smith et al., 2008; Wakslak & Trope, 2009), and engaging in superordinate categorization versus subordinate exemplification (Fujita et al., 2006; Packer et al., 2013). For clarity and brevity, we describe these experiments in the SOM as they generally replicate the results we report in the main text.

*Transparency and Openness.* All pre-registrations, deidentified data, study materials, syntax, and codebooks are available on ResearchBox: https://researchbox.org/4719. Experiments 2, 3, and S4b were preregistered, but the other studies were not. Table 1 reports sample size considerations and sensitivity analyses. These decisions followed previous metamotivation research (Nguyen et al., 2019). In all experiments except S4a-S4b, we excluded participants who (a) did not identify as fluent in English or failed an English proficiency check, (b) indicated they were not paying attention (i.e., reported being "very" or "extremely" distracted, or taking the survey "not at all" or "a little" seriously), (c) reported previously taking a survey that included similar materials, and/or (d) had repeating IP addresses within the United States (for a discussion of online data quality concerns, see Moss & Litman, 2018). Experiment S2c also excluded participants who responded incorrectly to the open-ended practice trials (i.e., those who did not understand the mindsets). In Experiments S4a–S4b, we only used the first exclusion criterion (i.e., English proficiency) given improved data quality on Prolific at the time (Douglas et al., 2023)

## Experiments 1a and 1b: Beliefs About Modulating Regulatory Scope Over Time

Experiments 1a and 1b examined people's beliefs about the benefits of modulating regulatory scope across a gradient of temporal distance in a within-subjects design. Participants rated how helpful high-level and low-level construal would be for addressing a range of proximal to distal time points (i.e., today to 10 years from now). Experiments 1a and 1b used the same study design albeit

**Table 1.** *N*, Sensitivity Analyses and Demographics of the Final Sample for all Experiments.

| Experiment | Sample | Recruited *N* | Final *N* | $\eta_p^2$ with 80% power | Age | Gender |
|---|---|---|---|---|---|---|
| 1a | Prolific | 120 | 111 | .021 | $M = 30.79$, $SD = 12.56$ | 62 women, 50 men, 6 non-binary people, 1 transgender man, 1 transgender woman |
| 1b | Prolific | 121 | 117 | .019 | $M = 31.88$, $SD = 11.68$ | 67 women, 52 men, 1 non-binary person, 1 did not respond |
| 2 | Prolific | 120 | 115 | .066 | $M = 47.70$, $SD = 12.74$ | 63 women, 52 men |
| 3 | Prolific | 120 | 117 | .060 | $M = 47.15$, $SD = 12.93$ | 67 women, 50 men |
| S1a | MTurk | 101 | 86 | .087 | $M = 40.06$, $SD = 13.32$ | 47 women, 54 men |
| S1b | MTurk | 100 | 66 | .112 | $M = 39.97$, $SD = 12.17$ | 43 women, 56 men, 1 did not respond |
| S2a | MTurk | 100 | 83 | .090 | $M = 36.65$, $SD = 11.42$ | 48 women, 51 men, 1 transgender person |
| S2b | MTurk | 99 | 82 | .091 | $M = 34.57$, $SD = 10.15$ | 47 women, 51 men, 1 did not respond |
| S2c | MTurk | 203 | 162 | .047 | $M = 38.23$, $SD = 12.31$ | 110 women, 92 men, 1 transgender man |
| S3 | MTurk | 99 | 79 | .094 | $M = 34.80$, $SD = 9.00$ | 51 women, 48 men |
| S4 | MTurk | 446 | 442 | .018 | $M = 44.17$, $SD = 12.61$ | 246 women, 197 men, 3 non-binary people |
| S5 | MTurk | 101 | 97 | .078 | $M = 38.03$, $SD = 13.24$ | 55 women, 46 men |
| S6a | Prolific | 100 | 94 | .080 | $M = 38.60$, $SD = 12.11$ | 57 women, 37 men |
| S6b | Prolific | 150 | 144 | .053 | $M = 38.88$, $SD = 12.38$ | 51 women, 65 men, 3 non-binary people |

*Note*. Experiments S1a–S6b are reported in the SOM. Participants were based in the United States. Sensitivity was calculated in G*Power 3.1 (Faul et al., 2007), examining the minimum effect size (Cohen's *f*) that can be detected with 80% power for an interaction between within-subjects factors in a repeated measures ANOVA (Giner-Sorolla et al., 2024). To facilitate comparison of effect sizes, we calculated $\eta_p^2$ using the "effectsize" package (function "f_to_eta2") in R (Ben-Shachar et al., 2024).

with different operationalizations of high-level and low-level construal (colloquial descriptions and global vs. local visual processing, respectively).

## Methods

Participants were first introduced to high-level and low-level construal either in colloquial terms in Experiment 1a (i.e., two different kinds of "strategy sets") or as global and local processing "mindsets" in Experiment 1b (adapted from Nguyen et al., 2019). For example, in Experiment 1a, high-level construal was described as "focusing on the forest, instead of the trees," whereas low-level construal was described as "focusing on the trees, instead of the forest." In Experiment 1b, high-level construal (global mindset) was described as perceiving compound shapes (triangle composed of squares) in terms of its overall shape (triangle); low-level construal (local mindset) was described as perceiving the same compound shapes in terms of its subordinate elements (squares).

Participants then rated the usefulness of each "strategy set" or "mindset" to plan for seven timepoints: today, tomorrow, 1 week from now, 1 month from now, 1 year from now, 5 years from now, and 10 years from now (1 = *extremely unhelpful*, 7 = *extremely helpful*). In both experiments, we counterbalanced whether participants rated high-level or low-level construal first.

## Results

We conducted parallel analyses across both experiments. To examine participants' beliefs about the usefulness of construal level across temporal distance, we submitted usefulness ratings to a 2 (within, construal: high-level vs. low-level) × 7 (within, timepoint: today, tomorrow, 1 week, 1 month, 1 year, 5 years, 10 years) × 2 (between, construal order: high-level first vs. low-level first) mixed ANOVA (Table 2 reports statistics).[2] If people's beliefs about modulating scope are sensitive to time as predicted by CLT, we should observe a significant interaction between construal and time. That is, as temporal distance increases, people should perceive high-level construal as more useful and low-level construal as less useful.

Results revealed that high-level construal (Exp 1a: $M = 5.11$, $SD = 0.91$; Exp 1b: $M = 4.59$, $SD = 1.11$) was generally perceived as more useful than low-level construal (Exp 1a: $M = 4.11$, $SD = 1.10$; Exp 1b: $M = 4.11$, $SD = 1.18$).

**Table 2.** Mixed ANOVA on Construal Level Usefulness Ratings Across Distance in Experiments 1a and 1b.

| Experiment | Term | *F* | *df* | *p* | $\eta_p^2$ | 90% CI of $\eta_p^2$ |
|---|---|---|---|---|---|---|
| 1a | Construal | 60.68 | (1, 109) | <.001 | .358 | [0.24, 0.46] |
| | Time | 10.18 | (6, 654) | <.001 | .085 | [0.05, 0.12] |
| | Order | 5.09 | (1, 109) | .026 | .045 | [0.003, 0.12] |
| | **Construal × Time** | **112.76** | **(6, 654)** | **<.001** | **.508** | **[0.47, 0.54]** |
| | Construal × Order | 0.61 | (1, 109) | .437 | .006 | [<0.001, 0.05] |
| | Time × Order | 4.91 | (6, 654) | .003 | .043 | [0.02, 0.06] |
| | Construal × Time × Order | 0.41 | (6, 654) | .870 | .004 | [<0.001, 0.004] |
| 1b | Construal | 18.65 | (1, 115) | <.001 | .140 | [0.06, 0.24] |
| | Time | 10.74 | (6, 690) | <.001 | .085 | [0.05, 0.11] |
| | Order | 8.35 | (1, 115) | .005 | .068 | [0.01, 0.15] |
| | **Construal × Time** | **30.39** | **(6, 690)** | **<.001** | **.209** | **[0.16, 0.25]** |
| | Construal × Order | 3.35 | (1, 115) | .070 | .028 | [<0.001, 0.10] |
| | Time × Order | 1.29 | (6, 690) | .261 | .011 | [<0.001, 0.02] |
| | Construal × Time × Order | 1.70 | (6, 690) | .118 | .015 | [<0.001, 0.02] |

*Note.* Bolded effects are theoretically meaningful and are our primary results.

Additionally, there was a significant main effect of time such that participants generally perceived both construal levels as less useful over time. Most importantly, supporting CLT predictions, perceived usefulness of high- versus low-level construal depended on time point (Figure 1). To decompose the interaction between construal and time, we first conducted simple comparisons as a function of construal. As temporal distance increased, participants perceived that high-level construal was more useful, Exp 1a: $F(6, 109) = 21.79$, $p < .001$, $\eta_p^2 = .55$, 90% CI of $\eta_p^2$ [0.43, 0.62]; Exp 1b: $F(6, 115) = 3.14$, $p = .007$, $\eta_p^2 = .14$, [0.03, 0.21], and low-level construal was perceived as less useful, Exp 1a: $F(6, 109) = 28.59$, $p < .001$, $\eta_p^2 = .61$, [0.51, 0.68]; Exp 1b: $F(6, 115) = 9.48$, $p < .001$, $\eta_p^2 = .33$, [0.20, 0.42]. People's beliefs about modulating scope appear generally consistent with CLT predictions.

In addition, we compared the relative usefulness of high-level versus low-level construal at each time point by conducting paired samples *t*-tests (results in Table 3). Across Experiments 1a and 1b, participants reported that low-level construal would be more useful than high-level construal for today and for tomorrow, although the latter difference was to a smaller extent. One week from now served as the divergent point whereby people no longer reported high- and low-level construal as significantly different in usefulness. As temporal distance increased, participants reported that high-level construal would be more useful than low-level construal 1 month from now, 1 year from now, 5 years from now, and 10 years from now. We also note that the relative difference between high- and low-level construal appears stronger in Experiment 1a than Experiment 1b (i.e., the former effect sizes are larger), which might be in part because of the difference in construal level operationalizations.

## *Discussion*

Experiments 1a and 1b are the first to demonstrate that people believe high-level construal is more useful for increasingly distal time points, whereas low-level construal is more useful with increasingly proximal time points. This suggests that they recognize high-level and low-level construal support the expansion and contraction of scope, respectively, in response to the regulatory challenges of temporal distance.

Most studies examining the relationship between psychological distance and construal level only present participants with two contrasting time points (e.g., Soderberg et al., 2015). In contrast, Experiments 1a and 1b presented participants with a range of time points. This allowed us to observe that the relative difference in usefulness between high- versus low-level construal may depend on the specific timepoints examined. To the extent that people's beliefs reflect their actual responses, this paradigm may reveal timepoints that researchers could use to optimize their temporal distance manipulations. For example, the results of Experiment 1b suggest that, when using global versus local visual processing as a dependent variable, an experimenter might maximize the power of their manipulation asking participants to consider "later today" versus "five years from now." Researchers could also adapt Experiments 1a and 1b methods to empirically test different potential operationalizations of distance manipulations. To-date, we know of no other examination of people's responses to a gradient of distance in a single study as we reported here (cf. Soderberg et al., 2015, for a meta-analytical examination) and encourage further explorations.

We might note that although CLT only generates relative predictions about the use of high-level versus low-level construal with increasing distance, this study revealed that

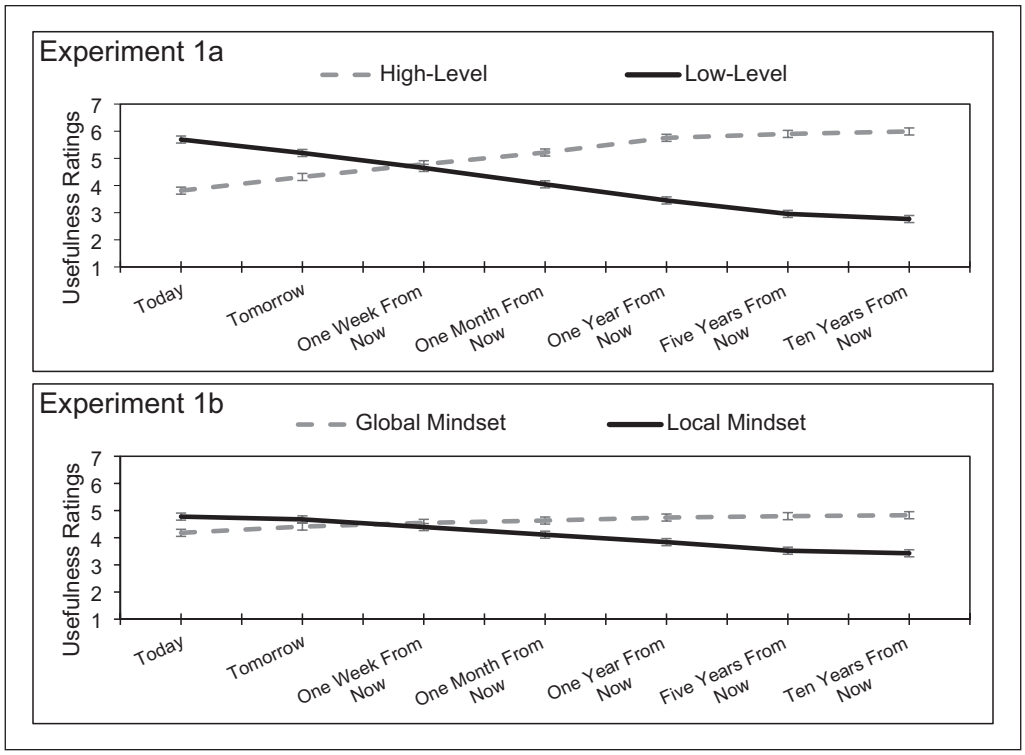


**Figure 1.** Usefulness ratings for high-level and low-level construal across temporal distances in Experiment 1a (top panel) and Experiment 1b (bottom panel).
*Note.* Higher scores on the y-axis reflect greater usefulness of high-level (vs. low-level) construal.

**Table 3.** Paired *t*-Tests Comparing High-Level Construal Compared to Low-Level Construal by Timepoint in Experiments 1a and 1b.

| | | High-level | | Low-level | | *t* | *df* | *p* | *Hedges' g* | 95% CI of *g* |
|---|---|---|---|---|---|---|---|---|---|---|
| Experiment | Timepoint | *M* | *SD* | *M* | *SD* | | | | | |
| 1a | Today | 3.78 | 1.60 | 5.68 | 1.10 | −9.08 | 110 | <.001 | −0.82 | [−1.04, −0.62] |
| | Tomorrow | 4.28 | 1.50 | 5.22 | 1.21 | −5.13 | 110 | <.001 | −0.47 | [−1.03, −0.62] |
| | 1 week from now | 4.75 | 1.25 | 4.62 | 1.37 | 0.80 | 110 | .214 | 0.07 | [−0.11, 0.25] |
| | 1 month from now | 5.19 | 1.19 | 4.04 | 1.53 | 6.29 | 110 | <.001 | 0.57 | [0.38, 0.77] |
| | 1 year from now | 5.73 | 1.14 | 3.48 | 1.65 | 10.95 | 110 | <.001 | 0.99 | [0.77, 1.21] |
| | 5 years from now | 5.87 | 1.29 | 3.00 | 1.74 | 12.48 | 110 | <.001 | 1.13 | [0.90, 1.36] |
| | 10 years from now | 5.96 | 1.35 | 2.81 | 1.88 | 12.89 | 110 | <.001 | 1.17 | [0.94, 1.40] |
| 1b | Today | 4.18 | 1.27 | 4.78 | 1.44 | −3.80 | 116 | <.001 | −0.35 | [−0.53, −0.16] |
| | Tomorrow | 4.41 | 1.25 | 4.68 | 1.38 | −1.88 | 116 | .063 | −0.17 | [−0.35, 0.10] |
| | 1 week from now | 4.55 | 1.19 | 4.39 | 1.29 | 1.19 | 116 | .237 | 0.11 | [−0.07, 0.29] |
| | 1 month from now | 4.63 | 1.16 | 4.11 | 1.34 | 3.77 | 116 | <.001 | 0.35 | [0.16, 0.53] |
| | 1 year from now | 4.74 | 1.42 | 3.84 | 1.44 | 5.39 | 116 | <.001 | 0.50 | [0.30, 0.69] |
| | 5 years from now | 4.79 | 1.64 | 3.52 | 1.56 | 6.12 | 116 | <.001 | 0.56 | [0.37, 0.76] |
| | 10 years from now | 4.83 | 1.75 | 3.43 | 1.72 | 6.14 | 116 | <.001 | 0.56 | [0.37, 0.76] |

people's beliefs may suggest absolute differences. That is, whereas low-level construal was seen as more beneficial for proximal events (i.e., today and tomorrow), high-level construal was seen as more beneficial for distal events (i.e., 1 month, 1 year, 5 years, 10 years). We urge caution in generalizing these patterns to other operationalizations of distance and construal level—whether one finds absolute differences likely depends on individual and contextual factors (as observed in other studies in this paper—see SOM).

One limitation of Experiments 1a and 1b is that the assessment of beliefs did not provide any context about the task to be performed. Another limitation is that we only examined

**Table 4.** Repeated Measures ANOVA: Usefulness Ratings (Experiment 2).

| Predictor | *F* | *df* | *p* | $\eta_p^2$ | 90% CI of $\eta_p^2$ |
|---|---|---|---|---|---|
| Task (distal, proximal) | 88.16 | (1, 114) | <.001 | .44 | [0.33, 0.53] |
| Distance Dimension (temporal, spatial, social, hypothetical) | 7.91 | (3, 342) | <.001 | .07 | [0.02, 0.11] |
| Task × Distance Dimension | 22.97 | (3, 342) | <.001 | .17 | [0.11, 0.22] |

*Note.* Bolded effects are theoretically meaningful and are our primary results.

people's beliefs in temporal distance, although CLT proposes that people modulate regulatory scope not only in response to time but also other dimensions (i.e., space, social, hypotheticality). Experiments 2 and 3 (and all experiments in SOM) address these issues by measuring beliefs with an assessment that describes various specific tasks (e.g., planning an event) across all four psychological distance dimensions. Given the clarity of colloquial descriptions of high- versus low-level construal for participants, we use them as the operationalization of construal level in Experiments 2 and 3. In the SOM, we describe experiments that examined a larger variety of methods that can impact construal level (e.g., thinking about why vs. how, Freitas et al., 2004; generating superordinate categories vs. subordinate exemplars, Fujita et al., 2006; Packer et al., 2013); these generally replicated the results reported below.

## Experiment 2: Multiple Distance Dimensions

Experiment 2 presented participants with a variety of tasks (e.g., train for a race, lead a team project, learn about business opportunities) that require expanding versus contracting scope to address distal versus proximal challenges across multiple psychological distance dimensions and asked them to rate how helpful it would be to engage in high-level or low-level construal. This allowed us to examine whether participants were attuned to and regulate in anticipation of the challenges of distance, beyond specific features of the task. Experiment 2 was pre-registered: https://aspredicted.org/k9mx-7jbh.pdf.

### Method

As in Experiment 1a, participants read colloquial descriptions of high- and low-level construal, labeled as "Orientation Set A" or "Orientation Set B" (adapted from Nguyen et al., 2019; Table S1). Labels were counterbalanced between participants. Next, they saw scenarios—piloted in the SOM Experiments—describing 16 tasks that varied in time, space, people, or probability (4 tasks per dimension; Appendix).[3] Each task was presented to participants twice—once as a distal scenario and once as a proximal scenario. For example, one task involved training for a race. In one scenario, the race was to occur in a week (temporally proximal). In the other, the race was to occur in a year (temporally distant). Another task involved leading a team project among people one knows (socially proximal) or does not know (socially distant). This procedure yielded 32 scenarios in total: half represented distal tasks, and the other half represented proximal tasks. For each scenario, participants rated the extent to which it would be more helpful to engage in high- or low-level construal (i.e., labeled as "Orientation Set A/B" to participants depending on counterbalancing order; coded so that 1 = *low-level construal would be extremely more helpful*, 8 = *high-level construal would be extremely more helpful*).[4] Thus, Experiment 2 used a fully within-subjects experimental design: each scenario and participant served as their own control, holding constant any potential individual scenario-level or participant-level effects.

### Results

We submitted participants' usefulness ratings to a 2 (task: distal vs. proximal) × 4 (distance dimension: temporal vs. spatial vs. social vs. hypothetical) repeated measures ANOVA (see Table 4 for full output). If people's beliefs about modulating scope generalize across distance dimensions, there should be a significant main effect of task: high-level (relative to low-level) construal should be perceived as more useful for distal (vs. proximal) tasks. In addition, it is possible that the distance dimension might moderate or interact with the task to predict construal usefulness.

*Do People Recognize Construal Level as a Tool for Modulating Scope?.* Conceptually replicating Experiments 1a and 1b, perceived usefulness of high-level and low-level construal depended on the psychological distance of the task (Figure 2). As predicted, participants rated high-level (vs. low-level) construal as more useful for distal ($M = 4.83$, $SD = 2.31$) compared to proximal ($M = 3.77$, $SD = 2.25$) tasks. Note the considerable variance in people's beliefs, suggesting individual differences in how much they recognize construal level as a tool for modulating scope.

*Do People's Beliefs Hold Across Distance Dimensions?.* We next examined whether the distance dimension influenced people's beliefs about the usefulness of construal level for modulating scope. We first observed that there was a significant main effect of distance dimension: participants generally believed that low-level (vs. high-level) construal would be more useful for tasks differing in time, compared to tasks

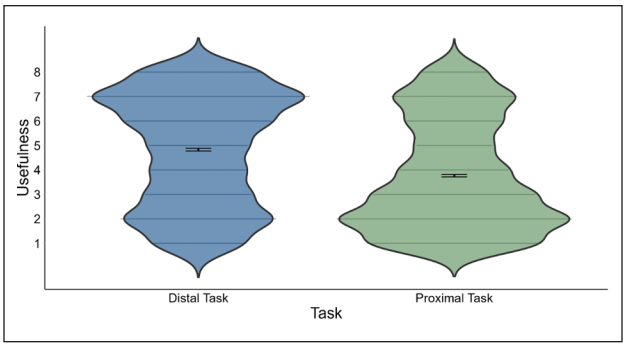


**Figure 2.** Construal-level usefulness by distal versus proximal tasks in Experiment 2
*Note.* Higher scores on the *y*-axis reflect greater usefulness of high-level (vs. low-level) construal.

differing on other distance dimensions (Table 5). We note that this result may not be conceptually meaningful as CLT makes no predictions about absolute differences in construal level between distance dimensions.

In addition, the distance dimension significantly moderated the endorsement of high-level versus low-level construal as a function of task. Simple comparisons revealed that people's beliefs that high-level (relative to low-level) construal would be more useful for distal (vs. proximal) tasks were strongest for temporal distance, followed by hypotheticality, social, and spatial distance (Table 5; Figure 3). This is noteworthy for two reasons. First, people's beliefs appear to generalize across dimensions—the effect was significant across all four dimensions. Second, the magnitude of these effects may depend on the distance dimension. The latter, however, should be interpreted with some skepticism, given that we did not calibrate differences in distance across dimension (e.g., 1 mile may not be equivalent to 1 day).

### *Discussion*

Experiment 2 conceptually replicated Experiments 1a and 1b. People recognized the benefits of construal level for modulating regulatory scope: they judged high-level construal to be more useful relative to low-level construal when they needed to expand (relative to contract) scope—that is, when presented with distal relative to proximal tasks. This effect was evident across all four distance dimensions, suggesting that people recognize how any psychological distance prompts the need to modulate scope. As such, people's beliefs about modulating scope appear largely consistent with CLT predictions.

Although people on average hold theory-consistent beliefs, individuals vary in their beliefs about construal level. As in other metamotivation work (e.g., Nguyen et al., 2019), we observed substantial individual-level variance in how useful people judged high- or low-level construal to be for distal or proximal tasks—a pattern we replicated in Experiment 3 and experiments in the SOM. Such individual differences may be important for understanding when and among whom CLT effects emerge, a point we return to in the General Discussion.

Experiment 2 additionally documented that the extent to which people exhibit theory-consistent beliefs (i.e., the effect size) may depend on the distance dimension. However, this result may have emerged because of variations in the range of distances within and between dimensions. For example, although our temporal distance tasks always varied between 1 week versus 1 year—timepoints within the gradient examined in Experiments 1a and 1b—our spatial tasks were more varied in distance (e.g., comparing a neighboring city to one across the country versus to one several states away). It is unclear whether people perceive these spatial distances as psychologically equal, and if such distances are comparable to the gap in the temporal distance scenarios. Thus, while people overall appear to recognize the role of construal level for modulating scope across distance dimensions, the size of this effect may depend on the differences in distance examined, in addition to the combination between distance dimension and construal level operationalization and other nuances in people's beliefs (see SOM). We elaborate on these points in the General Discussion.

## Experiment 3: High-Level Versus Low-Level Partners as Tools to Modulate Scope

When pursuing goals, people can rely not only on internal mental tools, but also on other people—such as by leveraging their expertise and support—and can flexibly seek out those that may be helpful for the goal (e.g., Fitzsimons & Shah, 2008; Lee & Fujita, 2023). Beyond examining whether people's beliefs about construal level systematically vary by distance dimension, Experiment 3 explores a novel implication of these beliefs: whether people leverage others as social resources to expand versus contract scope in addressing distal versus proximal tasks. One way potential partners may differ is in how much they enjoy engaging in concrete or abstract construal, creating affordances for relying on such partners to contract or expand one's scope. To the extent that this is true, we anticipate people may prefer working with low-level partners on proximal tasks and working with high-level partners on distal tasks, all else being equal.

This is an interesting context as there may be other reasons why people may opt for high- or low-level partners that are independent from scope. One possibility is the classic similarity-attraction effect: people may prefer to work with others who have similar construal level styles (e.g., Byrne, 1971). Another possibility is that people may prefer to work with others who have a different construal level style from their own (i.e., a complementary skillset; Bohns et al., 2013). Moreover, people could attend more to features of the task itself rather than distance (e.g., opt for a low-level partner to

**Table 5.** Pairwise Comparisons Between Construal-Level Usefulness in Distal Versus Proximal Tasks Within Each Distance Dimension in Experiment 2.

| | Overall | | Distal task | | Proximal task | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Dimension | *M* | *SD* | *M* | *SD* | *M* | *SD* | *t*(114) | *p* | *d* | 95% CI of *d* |
| Temporal | 3.96 | 2.41 | 5.00 | 2.41 | 2.92 | 1.92 | 9.69 | <.001 | 1.08 | [0.86, 1.30] |
| Spatial | 4.24 | 2.26 | 4.48 | 2.30 | 4.00 | 2.20 | 3.29 | <.001 | 0.25 | [0.10, 0.40] |
| Social | 4.50 | 2.22 | 4.75 | 2.20 | 4.26 | 2.22 | 2.92 | <.001 | 0.26 | [0.08, 0.43] |
| Hypothetical | 4.49 | 2.41 | 5.09 | 2.27 | 3.89 | 2.40 | 6.95 | <.001 | 0.62 | [0.45, 0.80] |

*Note*. The overall mean for temporal distance was significantly different from each of the other dimensions' overall means.

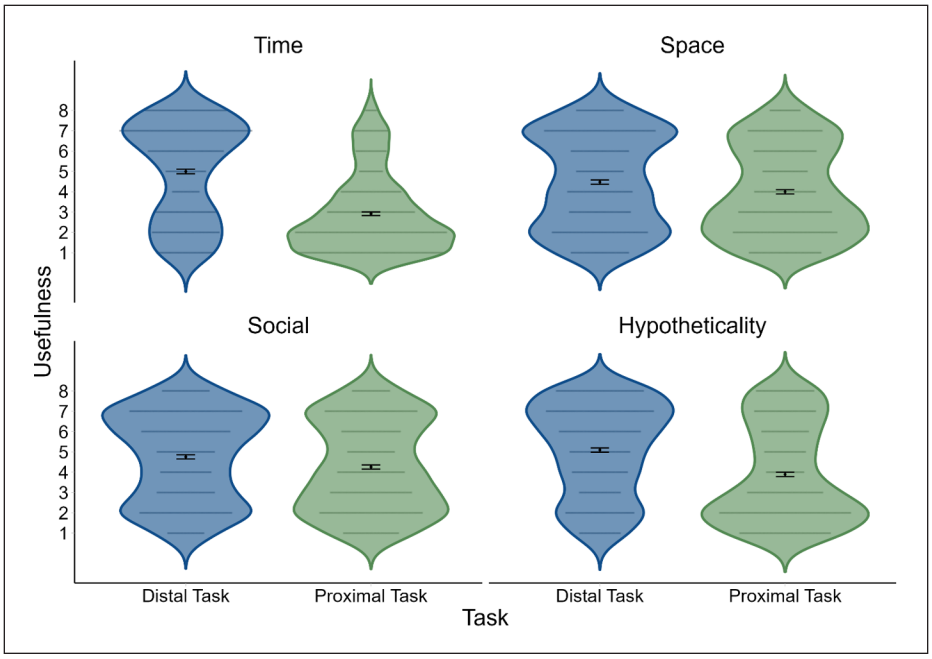


**Figure 3.** Construal-level usefulness by distance dimension and task in Experiment 2.
*Note*. Higher scores on the *y*-axis reflect greater usefulness of high-level (vs. low-level) construal.

organize an event regardless of when it occurs; see also Jansen et al., 2022). All of these preferences could reasonably influence partner preferences and may override any effects of beliefs about regulatory scope. As such, Experiment 3 examined whether people are attuned to the regulatory challenges associated with distance when selecting goal pursuit partners, even when other cues exist. This experiment was pre-registered: https://aspredicted.org/pmzy-33wz.pdf.

## Method

As in Experiment 2, participants were shown 32 scenarios that varied in distance (distal vs. proximal) across time, space, social distance, and hypotheticality. For each scenario, they rated the extent to which they preferred to consult with a high-level or a low-level partner to prepare for the task using a 6-point Likert-type scale (higher scores reflect greater preference for the high-level partner). We presented participants with working style descriptions of a high-level partner and a low-level partner. Specifically, the high-level partner stated, "I enjoy focusing on the big picture. I think it's important to figure out the specifics, but I am more skilled at creating a clear vision for a project." The low-level partner instead stated "I like diving into the specifics. I think that seeing the big picture can be valuable, but I am much better at working out the specifics of a project." We paired these statements with fictitious partner initials (i.e., APM and JTB) and counterbalanced which partner was the high-level or low-level partner. To control for expected task performance, participants read that the coworkers of these potential partners reported that both work very hard and are true assets to the team. Pilot testing ($N = 21$) revealed that these partner descriptions did not significantly differ in terms of perceived valence, usefulness, importance, and competence, $p$'s $> .33$.

**Table 6.** Mixed ANOVA: Preferences Ratings (Experiment 3).

| Predictor | *F* | df | *p* | $\eta_p^2$ | 90% CI of $\eta_p^2$ |
|---|---|---|---|---|---|
| Task (distal, proximal) | 70.70 | (1, 115) | <.001 | .38 | [0.27, 0.48] |
| Distance Dimension (temporal, spatial, social, hypothetical) | 3.80 | (3, 345) | .011 | .03 | [0.004, 0.06] |
| Participants' Working Style (high-level, low-level) | 6.71 | (1, 115) | .011 | .06 | [0.01, 0.14] |
| Task × Distance Dimension | 14.51 | (3, 345) | <.001 | .11 | [0.06, 0.16] |
| Task × Participants' Working Style | 0.77 | (1, 115) | .384 | .01 | [<0.001, 0.05] |
| Distance Dimension × Participants' Working Style | 0.51 | (3, 345) | .673 | .004 | [<0.001, 0.01] |
| Task × Distance Dimension × Participants' Working Style | 0.51 | (3, 345) | .673 | .004 | [<0.001, 0.01] |

In addition, as people's own working styles may guide partner preferences, we also asked participants to indicate in a binary choice whether the high-level or low-level working style better reflected their own.

## Results

We submitted participants' partner preferences to a 2 (task, within-subjects: distal vs. proximal) × 4 (type of distance, within-subjects: temporal vs. spatial vs. social vs. hypothetical) × 2 (participants' own working style, between-subjects: high-level vs. low-level) mixed ANOVA (see Table 6 for statistics).

*Do People Recognize Others as Social Resources for Modulating Scope?.* Conceptually replicating previous experiments, results revealed that participants recognize the benefits of construal level for modulating scope: participants preferred to work with the high-level partner (over the low-level partner) for distal tasks ($M = 3.73$, $SD = 1.71$) relative to proximal tasks ($M = 3.03$, $SD = 1.68$). Thus, participants appear to believe high-level partners would better assist them on distal tasks and low-level partners would better assist them on proximal tasks. This demonstrates the relevance of people's beliefs about modulating regulatory scope in shaping social preferences. Substantial individual-level variance, however, suggests that individuals may vary in these beliefs (Figure 4).

*Do People's Beliefs Hold Across Distance Dimensions?.* As in Experiment 2, the distance dimension in Experiment 3 systematically influenced participants' preferences for partners for distal relative to proximal tasks. First, there was a significant main effect of distance dimension: participants were most open to a high-level (vs. low-level) partner for social distance tasks, followed by tasks varying in spatial, time, and hypotheticality (Table 7). As noted earlier, such a result may not be conceptually meaningful as CLT makes no predictions about absolute differences in construal level between distance dimensions.

As in Experiment 2, the distance dimension significantly moderated high-level vs. low-level partner preferences as a function of task. Simple comparisons revealed that the effect

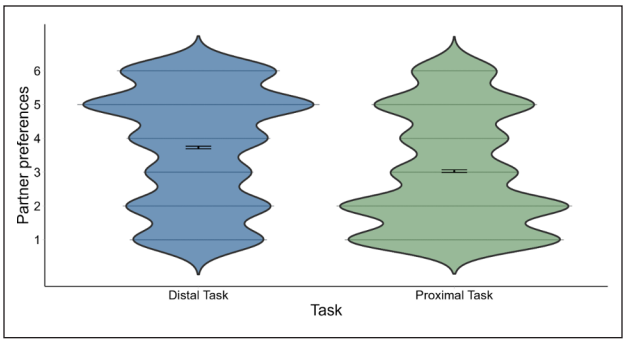


**Figure 4.** Preferences for high-level vs. low-level partners for distal and proximal tasks in Experiment 3.
*Note.* Higher scores on the *y*-axis reflect greater preference for high-level (vs. low-level) partner.

of people's beliefs was the strongest for tasks involving time, followed by hypotheticality, sociality, and space (Table 7; Figure 5). Critically, the effect of the task was significant in each of four distance dimensions. Thus, although the magnitude of these effects may vary across dimensions for a variety of reasons (including those that are methodological), they were all consistent with CLT predictions.

*Do People's Beliefs Depend on Their Own Working Style?.* Participants with high-level ($M = 3.56$, $SD = 1.81$) compared to low-level ($M = 3.28$, $SD = 1.68$) working styles generally preferred to work with a high-level partner, suggesting a general inclination to work with similar others. Participants' working styles, however, did not moderate their preferences for working with high-level compared to low-level partners to address distal relative to proximal tasks. This suggests that participants' beliefs about modulating scope may be more primary than their own working style in influencing partner preferences.

## Discussion

Experiment 3 conceptually replicated and extended previous experiments by examining the social implications of people's beliefs about the benefits of construal level for modulating scope. Specifically, people preferred to work with high-level relative to low-level partners when tasks were more distant

**Table 7.** Simple Comparisons of the Interaction Between Task and Construal by Distance Dimension in Experiment 3.

| | Overall | | Distal task | | Proximal task | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Dimension | *M* | *SD* | *M* | *SD* | *M* | *SD* | *t*(115) | *p* | *d* | 95% CI of *d* |
| Temporal | 3.33 | 1.82 | 4.00 | 1.77 | 2.65 | 1.61 | 8.61 | <.001 | 0.94 | [0.73, 1.16] |
| Spatial | 3.40 | 1.76 | 3.59 | 1.80 | 3.21 | 1.70 | 3.55 | <.001 | 0.29 | [0.13, 0.45] |
| Social | 3.56[a] | 1.65 | 3.75 | 1.61 | 3.37 | 1.66 | 3.10 | <.001 | 0.27 | [0.10, 0.44] |
| Hypothetical | 3.24[a] | 1.68 | 3.58 | 1.63 | 2.90 | 1.66 | 5.14 | <.001 | 0.46 | [0.28, 0.64] |

*Note.* [a]denotes overall means that were significantly different from each other.

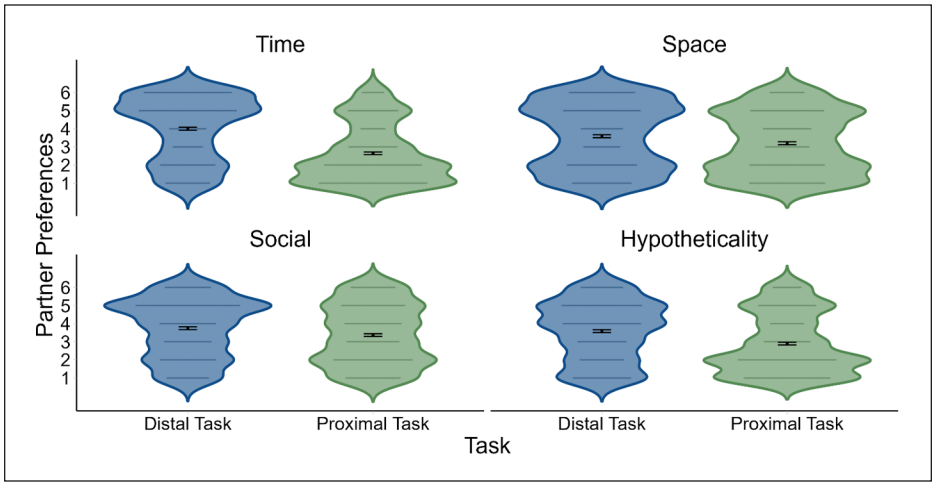


**Figure 5.** Preferences for high-level vs. low-level partners for distal and proximal tasks across all dimensions (Experiment 3). Error bars represent +/−1 standard error from the mean.
*Note.* Higher scores on the *y*-axis reflect greater preference for a high-level (vs. low-level) partner.

across time, space, people, and hypotheticality. That this effect was apparent over other potential effects—including similarity-attraction, complementarity, and matching partners to non-distance features of the task itself—may serve as evidence for the primacy of psychological distance in people's self-regulatory efforts. Moreover, these results document for the first time that other people may also serve as a "tool" for modulating scope.

## General Discussion

Four experiments in the main text (and ten in the SOM) demonstrate that people are sensitive to the regulatory challenges of psychological distance and recognize the usefulness of high- and low-level construal for expanding and contracting scope, respectively. Experiments 1a-1b suggested that people's beliefs follow a gradient of temporal distance: participants believed that high-level construal was more useful for increasingly distal time points, whereas low-level construal was more useful with increasingly proximal time points. Experiment 2 demonstrated that people believed the usefulness of construal level for modulating scope not only when tasks vary in time but also space, people, and hypotheticality. Experiment 3 documented a novel implication: these beliefs guided partner preferences in goal pursuit. Participants preferred high- and low-level partners who would support the necessary modulation of scope, even when other factors could have shaped these interpersonal preferences. In addition, experiments in the SOM generally replicated the robustness of (along with nuances in) people's beliefs about the functions of construal level for modulating scope, not only across distance dimensions but also other construal level operationalizations (i.e., global/local processing; why/how thinking; category/exemplar exercises).

### *Theoretical and Practical Implications*

The present research extends past research by adopting a metamotivational approach to explore people's beliefs about the benefits of construal level for modulating scope. Our results provide converging evidence for a core tenet of CLT that high-level (vs. low-level) construal helps address the regulatory challenges posed psychological distance. We find robust evidence for this relationship not only with traditional treatments of construal level, but also—for the first time—partner selection. This replication and extension of CLT is

noteworthy in light of recent concerns about the reproducibility of the relationship between psychological distance and construal level (e.g., Calderon et al., 2020; in press).

This work also contributes to a growing metamotivation literature exploring lay people's beliefs about how motivation operates and whether those beliefs promote regulatory outcomes (Fujita et al., 2024; Miele et al., 2020; Scholer et al., 2018). The current work provides novel evidence for people's beliefs about the function of construal level for regulating toward desired ends varying in distance as a fundamental self-regulatory challenge. New to the metamotivation literature, the current methods were conservative: tasks were held content constant and varied only in when, where, with whom, or how likely they would occur.

The social implications of these beliefs contribute to literature on the dynamics of interpersonal regulation (Fitzsimons et al., 2015; Fitzsimons & Finkel, 2010). Experiment 3 provides novel insights into partner selection and team building: people may strategically consult with high-level (vs. low-level) others who support the regulatory demands of distal (vs. proximal) goal pursuit. Extending beyond partner selection, this work may have implications for relationship closeness and evaluations. People tend to feel closer to and more satisfied with partners who are instrumental in advancing important personal goals (e.g., Fitzsimons & Fishbach, 2010; Fitzsimons & Shah, 2008). Demands to modulate scope may shape evaluations of partners: they may be more satisfied with high-level (vs. low-level) partners when pursuing distant (vs. proximal) goals. Similarly, the present work may shed new insight into the division of labor within close relationships and complementarity (e.g., Dryer & Horowitz, 1997). For example, dyadic goal pursuit may be more effective when partners' construal level tendencies complement each other, allowing the pair to delegate distal and proximal goal pursuit to the high-level and low-level partner, respectively. Those dyads that leverage their beliefs about scope and level to effectively match partners to tasks may be most successful in dyadic goal pursuit.

Experiment 3, moreover, may provide novel perspectives on effective social support provision (e.g., Iida et al., 2008). Recent findings (Lee & Fujita, 2023) suggest that social support efforts may be more effective when the distance of the provider matches the level of the support: support seekers are more grateful when socially distant (relative to near) providers assist in addressing high-level (relative to low-level) concerns. The present research suggests the converse: support may be more effective when the level of the provider matches the distance of the seeker's goals. Indeed, we might speculate that individual differences in the beliefs that we have documented in the present paper may help explain who is more or less effective in providing social support: those whose beliefs that are normatively accurate with respect to CLT may be those who are able to help frame events at the appropriate level of construal as support for those pursuing near and distant goals.

More broadly, by examining lay beliefs, the present research suggests that individual differences may shape when and for whom CLT effects emerge. A central tenet of CLT is that people engage in high-level versus low-level construal in response to psychologically distant versus near events (e.g., Trope & Liberman, 2010; Trope et al., 2021). Yet this general pattern may only be evident when people believe that high-level versus low-level construals are useful for expanding and contracting regulatory scope; when they do not, findings may not support CLT predictions. By suggesting that individuals may vary in the extent to which their beliefs are consistent with CLT, the present work raises the possibility that these individual differences might contribute systematic variance to the likelihood of observing theory-consistent results. This may not only advance theory by highlighting the potential importance of lay beliefs but also have practical implications: to the extent that people's (mis)beliefs explain variance in self-regulation and other outcomes, interventions to correct these beliefs may enhance desired outcomes.

## *Methodological Contributions and Improving CLT Replications*

Although people's beliefs about construal level were generally consistent with CLT across all experiments, experiments in the SOM document a handful of situations in which people's beliefs appear to be theory-inconsistent. To the extent that these beliefs guide how people actually respond to distance, these discrepant results may be informative for when and why CLT effects may emerge (or fail to emerge). Given growing interests in the replicability of CLT effects (e.g., Calderon et al., in press) and optimizing study design and materials to increase statistical power (e.g., Le et al., 2025), we advance three principles that we can draw from the present research to inform when the effect of distance on construal level is most likely to manifest.

*Principle 1. Degree of Distance Matters.* In Experiments 1a and 1b, people's beliefs about construal level were sensitive to the degree of temporal distance. As temporal distance increased, people reported a larger difference in the relative usefulness of high- versus low-level construal (and vice versa, when distance decreases; Figure 1). This finding concurs with Soderberg et al. (2015) observations that the distance between manipulated timepoints impacts the size of the resultant effect. For example, "today versus one week from now" would likely yield a smaller effect on construal compared to "today versus one year from now." How far apart any two events are thus systematically impacts the ability to produce theory-consistent results—an observation evident in people's beliefs.

One limitation of the present work is that we did not control for differences in distance across dimensions. For instance, we compared events that were "one year from today versus as one week from today" with events that are "highly unlikely to happen versus almost certain to happen." It is possible that a highly unlikely event may feel more psychologically distant than an event set to happen 1 year from today. The task of equating distances, however, is not as straightforward as one might assume. For example, it is unclear how units of temporal distance (e.g., 1 year) would be converted into units of other distances (e.g., levels of probability). This conversion may be particularly difficult with distance dimensions without objective units (e.g., social closeness). That the degree of distance between distance dimensions was not calibrated may explain why some distance dimensions (e.g., space and social distance) revealed smaller effects than others (e.g., time and hypotheticality): that is, the degree of distance within each of these dimensions may have differed substantially

Methodologically, if researchers plan to select two comparison points along a distance dimension, they may want to select comparisons that maximize statistical power. Experiments 1a and 1b may serve as a template to address this issue empirically. To the extent that people's beliefs are consistent with what they actually do, conducting pilot studies that probe participants' beliefs about a range of possible points along a distance dimension might be valuable for optimizing study design. Although there is meta-analytical information on the gradient of temporal distance (Soderberg et al., 2015), the paucity of empirical attention on and the heterogeneity in manipulations of space, social distance, and hypotheticality make it challenging to address this question meta-analytically. Systemic comparisons of distance operationalizations within and across dimensions may also help draw meaningful conclusions about CLT effects between dimensions, and more broadly, across study paradigms and replications.

*Principle 2. The Link Between Construal Level and Operationalization Matters.* Specific operationalizations of construal level (e.g., global/local vs. why/how vs. category/exemplar mental exercises) may differ in the extent to which they capture people's lay understanding of the construct. The theory-consistent results in the main text—compared to the more nuanced results in the SOM—provide support for this principle: when participants received colloquial explanations of high- and low-level construal (vs. operationalizations of construal level adapted from past research, such as thinking about why vs. how), they generally evidenced theory-consistent beliefs. Whether people recognize the link between construal level and its operationalizations may thus be critical for producing CLT effects.

Recognizing a specific operationalization as an instantiation of high-level versus low-level construal may vary between participants (i.e., some people may have a better understanding of the link between construal level and operationalizations) or between operationalizations (e.g., one might recognize the connection better for global/local compared to why/how exercises). The latter may partly explain why we at times observed that global/local exercises tended to produce larger effect sizes relative to other research-derived operationalizations (see Experiments S2a–S2c and S3 in SOM). People may also vary in how much they perceive an exercise within an operationalization as facilitating high- versus low-level construal. For example, participants may not recognize that thinking about "why" is as effective in inducing high-level construal as compared to how effective thinking about "how" is for inducing low-level construal. Such variance may explain cases when people appear to understand the benefits of low-level construal better than those of high-level construal (e.g., Experiments S2a-S2c and S3 in the SOM). Future research would likely benefit from a more fine-grained understanding of people's beliefs about how to induce construal level. Strengthening the link between construal level and operationalization may therefore promote the replicability of CLT effects.

*Principle 3. People May Hold Beliefs About Functions of Construal Level That are Beyond CLT Predictions.* People may hold CLT-irrelevant beliefs that may produce what appear to be theory-inconsistent results. For example, consider the finding that participants did not see why versus how as any more useful for tasks that differed in spatial distance—for example, planning for a business trip in a foreign versus nearby city (see SOM). People may believe that traveling to a spatially distant versus a near city is more difficult. As people tend to represent difficult actions in lower-level terms (how rather than why; e.g., Vallacher & Wegner, 1987), this perception of difficulty may have interfered with the typical CLT-predicted tendency to represent more distant actions in higher-level terms. Controlling for this perception may be key to producing CLT-predicted effects. When we were more attentive to this issue in generating spatial distance scenarios in Experiments 2 and 3 (see Footnote 3), we observed more theory-consistent results.

This principle may also explain ongoing issues with CLT replications. For example, Calderon et al. (2020) failed to replicate Wakslak et al. (2006) experiments that manipulated hypotheticality and measured construal level via tasks akin to global/local visual processing (i.e., segmentation of visual stimuli and visual abstraction). In the present research, we observed cases in which people did not believe global relative to local processing would be more beneficial for unlikely relative to likely events (Experiments S1a–S3; c.f., Experiments S4 and S6b). Perhaps the challenge of detecting rare events leads people to believe that it would be better to narrow one's attention so as to remain vigilant for these infrequent events (Förster & Higgins, 2005). Due to this competing belief, it is possible that the hypotheticality and global/local pairing may not have been optimized for

detecting CLT effect. Thus, researchers may need to avoid influences of CLT-irrelevant beliefs to create powerful tests of the theory.

### Limitations and Boundary Conditions

We measured people's beliefs using a scenario-based assessment with closed-ended responses. Future work may expand beyond this method to assess people's beliefs using a more open-ended paradigm, such as presenting participants with distal and proximal tasks, asking them to write about ways to accomplish the tasks, and coding their written responses for linguistic abstraction (Johnson-Grey et al., 2020; Le et al., 2025). People may flexibly use abstract and concrete language to describe how they would address distal relative to proximal tasks. We note, however, that this paradigm may conflate people's beliefs with the implementation of their beliefs. That is, their written responses may simultaneously represent what they know and what they would do—constructs that may be distinct.

There are likely boundary conditions that we did not document that determine whether and when people implement their beliefs about construal level. In Experiments S6a and S6b, we explored task importance as one such moderator, but results were inconclusive. As described in the SOM, there were several limitations with our methodology that will require additional research to address. Nevertheless, exploring boundary conditions beyond task importance, such as the ability to monitor and recognize one's own current construal level, cognitive ability to switch construals, and having the right environmental affordances, deserves future attention.

This work was conducted using convenient, online U.S.-based samples (WEIRD samples, Henrich et al., 2010), and thus captured beliefs that may be particular to this population. As people across cultures can vary in meta-motivational beliefs (c.f., Nguyen et al., 2020, 2022), future research might examine these lay beliefs about the benefits of construal level for modulating scope in more diverse samples. Doing so might also help researchers predict *a priori* whether and when CLT experiments may produce theory-consistent results in specific samples given a set of study materials, which may be particularly valuable given interest in the reproducibility of CLT predictions across more global samples (Calderon et al., in press).

### Future Directions

*Predicting Outcomes.* Future research might examine whether individual differences in people's beliefs about how to modulate scope predict regulatory outcomes. Preliminary evidence indicates that people's beliefs about construal level do predict meaningful outcomes (e.g., MacGregor et al., 2017; Nguyen et al. 2023). For example, Nguyen et al. (2023) assessed students' beliefs about the benefits of both high-level and low-level construal for self-control and behavioral precision, respectively and found that those with more accurate normative beliefs earned relatively higher grades in a social psychology course. Thus, it is possible that people's beliefs about the benefits of construal level for modulating scope, as assessed in the present work, may also predict consequential outcomes. For instance, those with normatively inaccurate beliefs about construal level may struggle with efficiently working toward distal deadlines, as they may mistakenly focus too much on details that may ultimately change. Leaders who communicate ineffectively with subordinates may fail to recognize that high-level language may resonate better with this audience (Berson & Halevy, 2014). Understanding who holds accurate or inaccurate beliefs and whether these beliefs impact outcomes may inform novel interventions.

*Development of Beliefs.* Our work opens new questions about how people acquired beliefs about the benefits of construal level. Data reported in the SOM suggested that people may be more familiar with the benefits of low-level construal for proximal tasks than the benefits of high-level construal for distal tasks. This finding may reveal something about the acquisition of these beliefs: it may be more difficult to learn what is adaptive for distal relative to proximal tasks. Feedback concerning performance on distal tasks may be less immediate given their psychological distance, rendering it more difficult to ascertain what strategies are beneficial or are not. For example, people may more frequently receive feedback concerning strategies they take to prepare for tasks that are likely to happen (hypothetically proximal) relative to unlikely to happen (hypothetically distant). Consequently, people may come to acquire a broader set of strategies with which to prepare for proximal relative to distal tasks. Future research may explore this further.

## Conclusion

Psychological distance poses unique self-regulatory challenges to goal pursuit. Although often overlooked by self-regulation and goals research, it appears that lay people are attuned to subtle environmental cues that signal distance versus proximity and have some of the basic know-how to address the challenges. These include not only cognitive solutions but also social ones. As there are still questions that remain over how people come to acquire and leverage this knowledge, we hope this work inspires others to study goal pursuit over time, locations, people, and possibilities.

### Author Note

The opinions expressed here are our own and do not necessarily reflect the views of the funding organizations. Comments by members of the Motivation and Cognitive Science Lab and 2019-2020 Social Cognition Research Group at The Ohio State University are appreciated.

## ORCID iDs

Phuong Q. Le https://orcid.org/0000-0001-8514-7025
Abigail A. Scholer https://orcid.org/0000-0001-8531-4436
Kentaro Fujita https://orcid.org/0000-0002-3527-6002


## Author Contributions

Phuong Le: conceptualization, data curation, formal analysis, investigation, methodology, project administration, software, validation, visualization, writing-original draft, writing-review and editing; Tina Nguyen: conceptualization, data curation, formal analysis, funding acquisition, investigation, methodology, project administration, software, validation, visualization, writing-original draft, writing-review and editing; Abigail Scholer: conceptualization, funding acquisition, methodology, project administration, resources, supervision, writing-review and editing; Kentaro Fujita: conceptualization, funding acquisition, methodology, project administration, resources, supervision, writing-original draft, writing-review and editing


## Funding

The authors disclosed receipt of the following financial support for the research, authorship, and/or publication of this article: This work was supported by funding from the National Science Foundation Graduate Research Fellowship Program (awarded to TN), Social Sciences and Humanities Research Council of Canada (awarded to AAS; Grant #435-2017-0184), the National Science Foundation (awarded to KF; Grant #1626733) and The John Templeton Foundation (awarded to KF; Grant #15462).


## Declaration of Conflicting Interests

The authors declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

## Data Availability Statement

All deidentified data, materials, syntax, and dataset codebooks are available on ResearchBox: https://researchbox.org/4719.

## Supplemental Material

Supplemental material is available online with this article.

## Notes

1. It is important to observe that CLT makes relative rather than absolute predictions regarding the use of high-level versus low-level construal for distal versus proximal events, respectively (see also Fujita et al., 2008, for discussion of this issue). Thus, CLT suggests that the use of high-level construal increases relative to low-level construal with increasing distance. Whether or not one is used more than the other in absolute terms may depend on individual and contextual factors beyond distance.
2. Order did not moderate the main effect of construal or the interaction between construal and time. We discuss the interaction between time and order in SOM.
3. We note that the spatial distance scenarios in Experiments 2 and 3 are different from those in the experiments reported in SOM. As Experiments 2 and 3 were conceptual replications to the original experiments reported in the SOM, we took the opportunity to revise the spatial distance scenarios (noted in the General Discussion), resulting in more consistent results across distance dimensions.
4. Rather than two unipolar measures of high- and low-level construal, respectively, as in Experiments 1a and 1b, we opted for a bipolar measure to simplify analyses and interpretation of results. CLT makes relative rather than absolute predictions about the advantage of high-level (vs. low-level) construal for distal (vs. proximal) tasks. Experiments in the SOM utilized analogous study designs in which we used unipolar measures and yielded similar results.

## References


Ben-Shachar, M. S., Makowski, D., Lüdecke, D., Patil, I., Wiernik, B. M., Thériault, R., Kelley, K., Stanley, D., Caldwell, A., Brunett, J., Karreth, J., & Waggoner, P. *effectsize: Indices of Effect Size* (R Package Version 0.8.9). https://doi.org/10.32614/CRAN.package.effectsize

Berson, Y., & Halevy, N. (2014). Hierarchy, leadership, and construal fit. *Journal of Experimental Psychology: Applied*, *20*(3), 232–246. https://doi.org/10.1037/xap0000017

Bohns, V. K., Lucas, G. M., Molden, D. C., Finkel, E. J., Coolsen, M. K., Kumashiro, M., Rusbult, C. E., & Higgins, E. T. (2013). Opposites fit: Regulatory focus complementarity and relationship well-being. *Social Cognition*, *31*(1), 1–14. https://doi.org/10.1521/soco.2013.31.1.1

Byrne, D. (1971). *The attraction paradigm*. Academic Press.

Calderon, S., Mac Giolla, E., Ask, K., & Granhag, P. A. (2020). Subjective likelihood and the construal level of future events: A replication study of Wakslak, Trope, Liberman, and Alony (2006). *Journal of Personality and Social Psychology*, *119*(5), e27–e37. https://doi.org/10.1037/pspa0000214

Calderon, S., Mac Giolla, E., Ask, K., & Luke, T. J. (in press). Effects of psychological distance on mental abstraction: A registered report of four tests of construal level theory. *Advances in Methods and Practices in Psychological Science*. https://doi.org/10.31234/osf.io/wqbhd_v2

Douglas, B. D., Ewell, P. J., & Brauer, M. (2023). Data quality in online human-subjects research: Comparisons between MTurk, Prolific, CloudResearch, Qualtrics, and SONA. *PLOS ONE*, *18*(3), e0279720. https://doi.org/10.1371/journal.pone.0279720

Dryer, D. C., & Horowitz, L. M. (1997). When do opposites attract? Interpersonal complementarity versus similarity. *Journal of Personality and Social Psychology*, *72*(3), 592–603. https://doi.org/10.1037/0022-3514.72.3.592

Duckworth, A. L., Gendler, T. S., & Gross, J. J. (2016). Situational strategies for self-control. *Perspectives on Psychological Science*, *11*(1), 35–55. https://doi.org/10.1177/1745691615623247

Faul, F., Erdfelder, E., Lang, A.-G., & Buchner, A. (2007). G*Power 3: A flexible statistical power analysis program for the social, behavioral, and biomedical sciences. *Behavior Research Methods*, *39*(2), 175–191. https://doi.org/10.3758/BF03193146

Fitzsimons, G. M., & Finkel, E. J. (2010). Interpersonal influences on self-regulation. *Current Directions in Psychological Science*, *19*(2), 101–105. https://doi.org/10.1177/0963721410364499

Fitzsimons, G. M., Finkel, E. J., & vanDellen, M. R. (2015). Transactive goal dynamics. *Psychological Review*, *122*(4), 648–673. https://doi.org/10.1037/a0039654

Fitzsimons, G. M., & Fishbach, A. (2010). Shifting closeness: Interpersonal effects of personal goal progress. *Journal of Personality and Social Psychology*, *98*(4), 535–549. https://doi.org/10.1037/a0018581

Fitzsimons, G. M., & Shah, J. Y. (2008). How goal instrumentality shapes relationship evaluations. *Journal of Personality and Social Psychology*, *95*(2), 319–337. https://doi.org/10.1037/0022-3514.95.2.319

Förster, J., & Higgins, E. T. (2005). How global versus local perception fits regulatory focus. *Psychological Science*, *16*(8), 631–636. https://doi.org/10.1111/j.1467-9280.2005.01586.x

Freitas, A. L., Gollwitzer, P., & Trope, Y. (2004). The influence of abstract and concrete mindsets on anticipating and guiding others' self-regulatory efforts. *Journal of Experimental Social Psychology*, *40*(6), 739–752. https://doi.org/10.1016/j.jesp.2004.04.003

Fujita, K., Le, P. Q., Scholer, A. A., & Miele, D. B. (2024). The metamotivation approach: Insights into the regulation of motivation and beyond. *Social and Personality Psychology Compass*, *18*(2), e12937. https://doi.org/10.1111/spc3.12937

Fujita, K., Orvell, A., & Kross, E. (2020). Smarter, not harder: A toolbox approach to enhancing self-control. *Policy Insights from the Behavioral and Brain Sciences*, *7*(2), 149–156. https://doi.org/10.1177/2372732220941242

Fujita, K., Trope, Y., Liberman, N., & Levin-Sagi, M. (2006). Construal levels and self-control. *Journal of Personality and Social Psychology*, *90*(3), 351–367. https://doi.org/10.1037/0022-3514.90.3.351

Giner-Sorolla, R., Montoya, A. K., Reifman, A., Carpenter, T., Lewis, N. A., Jr, Aberson, C. L., Bostyn, D. H., Conrique, B. G., Ng, B. W., Schoemann, A. M., & Soderberg, C. (2024). Power to detect what? Considerations for planning and evaluating sample size. *Personality And Social Psychology Review*, *28*(3), 276–301. https://doi.org/10.1177/10888683241228328

Henrich, J., Heine, S. J., & Norenzayan, A. (2010). The weirdest people in the world? *Behavioral and Brain Sciences*, *33*(2–3), 61–83. https://doi.org/10.1017/S0140525X0999152X

Iida, M., Seidman, G., Shrout, P. E., Fujita, K., & Bolger, N. (2008). Modeling support provision in intimate relationships. *Journal of Personality and Social Psychology*, *94*(3), 460–478. https://doi.org/10.1037/0022-3514.94.3.460

Jansen, E. J., Miele, D. B., Fujita, K., & Scholer, A. A. (2022). Managing the motivation of others: Do managers recognize how to manage regulatory focus in subordinates? *Motivation Science*, *8*(4), 330–345. https://doi.org/10.1037/mot0000273

Johnson-Grey, K. M., Boghrati, R., Wakslak, C. J., & Dehghani, M. (2020). Measuring abstract mind-sets through syntax: Automating the linguistic category model. *Social Psychological and Personality Science*, *11*(2), 217–225. https://doi.org/10.1177/1948550619848004

Le, P. Q., Stanczak, O. J., Hildebrand, L. K., Wallace, L., Berkman, E., & Fujita, K. (2025). *A case study for optimizing research paradigms: The within-subjects effect of temporal distance on language abstraction*. Open Science Framework. https://doi.org/10.31219/osf.io/9uyh8_v1

Lee, D. S., & Fujita, K. (2023). From whom do people seek what type of support? A regulatory scope perspective. *Journal of Personality and Social Psychology*, *124*(4), 796–811. https://doi.org/10.1037/pspi0000405

Liberman, N., & Trope, Y. (2008). The psychology of transcending the here and now. *Science*, *322*(5905), 1201–1205.

MacGregor, K. E., Carnevale, J. J., Dusthimer, N. E., & Fujita, K. (2017). Knowledge of the self-control benefits of high-level versus low-level construal. *Journal of Personality and Social Psychology*, *112*(4), 607–620. https://doi.org/10.1037/pspp0000130

Miele, D. B., & Scholer, A. A. (2018). The role of metamotivational monitoring in motivation regulation. *Educational Psychologist*, *53*(1), 1–21. https://doi.org/10.1080/00461520.2017.1371601

Miele, D. B., Scholer, A. A., & Fujita, Kentaro. (2020). Metamotivation: Emerging research on the regulation of motivational states. In A. J. Elliot (Ed.), *Advances in motivation science* (Vol. 7, pp. 1–42). Elsevier Academic Press. https://doi.org/10.1016/bs.adms.2019.10.001

Moss, A., & Litman, L. (2018, September 18). After the bot scare: Understanding what's been happening with data collection on MTurk and how to stop it. CloudResearch. https://www.cloudresearch.com/resources/blog/after-the-bot-scare-understanding-whats-been-happening-with-data-collection-on-mturk-and-how-to-stop-it/

Nguyen, T., Carnevale, J. J., Scholer, A. A., Miele, D. B., & Fujita, K. (2019). Metamotivational knowledge of the role of high-level and low-level construal in goal-relevant task performance. *Journal of Personality and Social Psychology*, *117*(5), 876–899. https://doi.org/10.1037/pspa0000166

Nguyen, T., & Fujita, K. (2024). On psychological distance and construal level: A regulatory perspective. In D. E. Carlston, K. Johnson, & K. Hugenberg (Eds.), *Oxford handbook of social cognition* (2nd ed., pp. 354–375). Oxford University Press.

Nguyen, T., Scholer, A. A., Miele, D. B., Edwards, M. C., & Fujita, K. (2023). Predicting academic performance with an assessment of students' knowledge of the benefits of high-level and low-level construal. *Social Psychological and Personality Science*, *14*(2), 195–206. https://doi.org/10.1177/19485506221090051

Nguyen, T., Togawa, T., Scholer, A. A., & Fujita, K. (2020). A cross-cultural investigation of metamotivational knowledge of construal level in the United States and Japan. *Motivation Science*, *6*(4), 386–400. https://doi.org/10.1037/mot0000178

Nguyen, T., Togawa, T., Scholer, A. A., Miele, D. B., & Fujita, K. (2022). A cross-cultural investigation of metamotivational beliefs about regulatory focus task-motivation fit. *Personality and Social Psychology Bulletin*, *48*(5), 807–820. https://doi.org/10.1177/01461672211025423

Nisbett, R. E., & Wilson, T. D. (1977). Telling more than we can know: Verbal reports on mental processes. *Psychological Review*, *84*(3), 231–259. https://doi.org/10.1037/0033-295X.84.3.231

Packer, D. J., Fujita, K., & Herman, S. (2013). Rebels with a cause: A goal conflict approach to understanding when conscientious people dissent. *Journal of Experimental Social Psychology*, *49*(5), 927–932. https://doi.org/10.1016/j.jesp.2013.05.001

Scholer, A. A., & Miele, D. B. (2016). The role of metamotivation in creating task-motivation fit. *Motivation Science*, *2*(3), 171–197. https://doi.org/10.1037/mot0000043

Scholer, A. A., Miele, D. B., Murayama, K., & Fujita, K. (2018). New directions in self-regulation: The role of metamotivational beliefs. *Current Directions in Psychological Science*, *27*(6), 437–442. https://doi.org/10.1177/0963721418790549

Smith, P. K., Wigboldus, D. H. J., & Dijksterhuis, A. (2008). Abstract thinking increases one's sense of power. *Journal of Experimental Social Psychology*, *44*(2), 378–385. https://doi.org/10.1016/j.jesp.2006.12.005

Soderberg, C. K., Amit, E., Callahan, S. P., Kochersberger, A. O., & Ledgerwood, A. (2015). The effects of psychological distance on abstraction: Two meta-analyses. *Psychological Bulletin*, *141*(3), 525–548. https://doi.org/10.1037/bul0000005

Trope, Y., Ledgerwood, A., Liberman, N., & Fujita, K. (2021). Regulatory scope and its mental and social supports. *Perspectives on Psychological Science*, *16*(2), 204–224. https://doi.org/10.1177/1745691620950691

Trope, Y., & Liberman, N. (2010). Construal-level theory of psychological distance. *Psychological Review*, *117*(2), Article 2. https://doi.org/10.1037/a0018963

Vallacher, R. R., & Wegner, D. M. (1987). What do people think they are doing? Action identification and human behavior. *Psychological Review*, *94*(1), Article 1. https://doi.org/10.1037/0033-295X.94.1.3

Wagner, R. K., & Sternberg, R. J. (1985). Practical intelligence in real-world pursuits: The role of tacit knowledge. *Journal of Personality and Social Psychology*, *49*(2), 436–458. https://doi.org/10.1037/0022-3514.49.2.436

Wakslak, C. J., & Trope, Y. (2009). The effect of construal level on subjective probability estimates. *Psychological Science*, *20*(1), 52–58. https://doi.org/10.1111/j.1467-9280.2008.02250.x

Wakslak, C. J., Trope, Y., Liberman, N., & Alony, R. (2006). Seeing the forest when entry is unlikely: Probability and the mental representation of events. *Journal of Experimental Psychology: General*, *135*(4), 641–653. https://doi.org/10.1037/0096-3445.135.4.641

Zimmerman, B. J., & Kitsantas, A. (1996). Self-regulated learning of a motoric skill: The role of goal setting and self-monitoring. *Journal of Applied Sport Psychology*, *8*(1), 60–75. https://doi.org/10.1080/10413209608406308

## Appendix: Scenarios in Beliefs Assessment in Experiments 2 and 3

Note: Words in brackets indicate psychological distance vs. proximity.

### *Temporal Distance*

- Imagine that you are an event coordinator. One of your most important events is scheduled to take place one [year/week] from today. Your task is to work on coordinating the event.
- Imagine that you are in charge of an important work presentation that will take place one [year/week] from today. You must anticipate issues that your audience may bring up and prepare potential solutions. Your task is to work on the presentation.
- Imagine that you are training for a race that will take place one [year/week] from today. Your task is to prepare for the race.
- Imagine that you are starting a business. Your business is set to open in one [year/week] from today. Your task is to prepare for the debut of your business.

### *Spatial Distance*

- Imagine that you are in a client acquisition role. You need to learn about business opportunities [across the country/in a neighboring city] and identify new potential clients. Your task is to learn about opportunities at this location.
- Imagine that you are leading a team on a construction project. You must evaluate progress and oversee operations [at a site in your city/at a site several states away]. Your task is to ensure the project is on track.
- Imagine that you are launching a new product line. You must promote this new product [at a local trade fair/a trade fair happening across the country]. Your task is to prepare for this event.
- Imagine that you are in charge of your company's marketing campaign in [a nearby city/a city across the country]. Your task is to launch this campaign.

### *Social Distance*

- Imagine that you are a college student. Your professor has randomly assigned students to work in groups on a presentation. You [do not know/know] the other students in your group. Your task is to prepare for the presentation with your group.
- Imagine that you are a volunteer for a charity, and you have been asked to reach out to people you [do not know/know] to join your cause. Your task is to generate interest for your charity.
- Imagine that you are in charge of a team project at work. You are asked to lead a team of coworkers that you [do not know/know]. Your task is to work on the project with this team.
- Imagine that you are working for a non-profit, and you have been asked to recruit people you [do not know/know] to volunteer with the organization. Your task is to get people to sign up.

### *Hypothetical Distance*

- Imagine that you are thinking about going on a vacation. Given your schedule, it is [highly unlikely/almost certain] that you will be able to take the trip. Your task is to plan for this vacation.
- Imagine that you are working on a project to submit to a contest. It is [highly unlikely/almost certain] that you would advance to the final round of the contest. Your task is to prepare your submission for the contest.
- Imagine that you are entering your name in a lottery. All things considered, it is [highly unlikely/almost certain] that you will win. Your task is to prepare for the possibility of winning the lottery.
- Imagine that you are betting on several sporting events. Given the stats, it is [highly unlikely/almost certain] that you will win most of your bets. Your task is to prepare for the possibility of winning most of your bets.