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A Cross-Cultural Investigation of Metamotivational Knowledge of Construal Level in the United States and Japan

Tina Nguyen
The Ohio State University

Taku Togawa
Chiba University of Commerce

Abigail A. Scholer
University of Waterloo

Kentaro Fujita
The Ohio State University

Metamotivation refers to the beliefs and mechanisms by which people regulate their motivational states to achieve desired ends. Recent metamotivation research demonstrates that Westerners recognize the benefits of engaging in high-level and low-level construal (i.e., motivational orientations toward abstract, essential vs. concrete, idiosyncratic features) for performance on various tasks. We present the first cross-cultural investigation of this knowledge of how to create such construal level task-motivation fit in Eastern and Western cultures. Two studies reveal that American and Japanese participants similarly understand the benefits of high-level versus low-level construal. American and Japanese participants also similarly recognize the various strategies with which to induce high-level versus low-level construal—for example, thinking about why versus how (Study 1) and engaging in global versus local visual processing (Study 2). Study 2 also suggests that this metamotivational knowledge in both cultures may guide people's preferences for these preparatory strategies when anticipating different performance tasks. Taken together, the current research provides preliminary evidence of cross-cultural consistency in metamotivational knowledge of the benefits of high-level and low-level construal and the functional role of this metamotivational knowledge in goal pursuit.

Keywords: metamotivation, construal level, culture, goals, self-regulation

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Self-regulation research traditionally studies the monitoring and modulation of one's own thoughts (e.g., Flavell, 1979), feelings (e.g., Tamir, 2016), and behavior (e.g., Carver & Scheier, 1982) to secure desired ends. Given that motivation influences all three, it is surprising that less attention has been devoted to people's goal-directed regulation of motivational states. Research on metamotivation addresses this oversight by examining the beliefs and mechanisms by which people regulate their motivation (Fujita, Scholer, Miele, & Nguyen, 2019; Miele & Scholer, 2018; Scholer & Miele, 2016; Scholer, Miele, Murayama, & Fujita, 2018). This work generally shows that when people have accurate insight into the nature of motivation, they make decisions that promote motivational states that lead to goal success.

Although these metamotivational processes are theorized to be cross-culturally universal, much of this work has been conducted on Western participants (cf., Murayama, Kitagami, Tanaka, & Raw, 2016). To address this issue more directly, we examine whether Easterners, like Westerners, appreciate the benefits of engaging in high-level and low-level construal—motivational states that tune people to abstract versus concrete features, respectively—for performance on tasks that demand these states; a phenomenon we refer to as construal level task-motivation fit (MacGregor, Carnevale, Dusthimer, & Fujita, 2017; Nguyen, Carnevale, Scholer, Miele, & Fujita, 2019). In doing so, we begin to address whether metamotivational processes are cross-culturally universal.

Metamotivation

Metamotivation research suggests that people not only regulate the quantity of motivation (i.e., how much), but also the quality (i.e., what type). The latter extends research demonstrating that

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Tina Nguyen, Department of Psychology, The Ohio State University; Taku Togawa, Faculty of Commerce and Economics, Chiba University of Commerce; Abigail A. Scholer, Department of Psychology, University of Waterloo; Kentaro Fujita, Department of Psychology, The Ohio State University.

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Correspondence concerning this article should be addressed to Kentaro Fujita, Department of Psychology, The Ohio State University, 1835 Neil Avenue, Columbus, OH 43210. E-mail: fujita.5@osu.edu

self-regulation involves distinct challenges addressed by different motivational states (e.g., Fujita, 2011; Heckhausen & Gollwitzer, 1987; Higgins, 2000; Kashdan & Rottenberg, 2010; Mann, de Ridder, & Fujita, 2013). Research indicates that inducing participants to experience the "right" motivation for the task at-hand—that is, creating task-motivation fit—promotes performance. Metamotivation research examines whether laypeople can independently create task-motivation fit.

Doing so requires first knowing what motivational states best address task demands. For example, for tasks requiring speed over accuracy, one must distinguish eagerness from vigilance, and know that eagerness is more beneficial than vigilance in this context (e.g., Förster, Higgins, & Bianco, 2003; Higgins, 2000). Second, people must identify ways to induce the preferred motivation. For example, people must recognize strategies that promote eagerness versus vigilance, such as thinking about advancement versus security. Lacking either type of knowledge may preclude successful regulation of motivation.

This knowledge may be tacit (e.g., Wagner & Sternberg, 1985). By metaphor, bakers may know when dough is perfectly kneaded, but may struggle to articulate why beyond the fact that it "feels right." Knowing how to regulate motivation does not require that one can express how to it (Nisbett & Wilson, 1977). Adapting methods from tacit knowledge research (Wagner & Sternberg, 1987, 1985), we assess Easterners' and Westerners' knowledge of how to create construal level task-motivation fit by presenting various scenarios and asking participants to select what response feels right.

Construal Level Theory

The term construal refers to people's subjective understanding of events (Griffin & Ross, 1991; Mischel & Shoda, 1995). That people can construe—and thus motivationally orient—to the same event in different ways is central to construal level theory (CLT; Trope & Liberman, 2010). CLT proposes that people can construe tasks in terms of their abstract, global, and essential features (high-level construal), or their concrete, local, and idiosyncratic features (low-level construal). Going on vacation, for example, may be construed as "an escape to paradise" or as "lying on *this* chair by *this* beach." Research indicates that construal level systematically impacts performance on various tasks (e.g., Fujita & Carnevale, 2012; Freund & Hennecke, 2015; Locke & Latham, 2006; Schmeichel, Vohs, & Duke, 2011; Taylor, Pham, Rivkin, & Armor, 1998).

Construal level directly is commonly manipulated via procedural priming (e.g., Fujita & Trope, 2014). For instance, having participants think about why versus how they engage in a behavior (i.e., focusing on abstract ends vs. concrete means) induces the tendency to construe subsequent unrelated events in high-level versus low-level terms (Freitas, Gollwitzer, & Trope, 2004; Fujita, Trope, Liberman, & Levin-Sagi, 2006). Completing tasks that require global versus local visual processing induces similar changes (Smith, Wigboldus, & Dijksterhuis, 2008; Wakslak & Trope, 2009). Critically, these manipulations can impact performance on different tasks. For example, whereas high-level construal promotes performance on tasks requiring self-control—that is, prioritizing global over local motivations (e.g., Fujita & Carnevale, 2012; Stillman, Medvedev, & Ferguson, 2017; Yi, Stuppy-Sullivan, Pickover, & Landes, 2017), low-level construal promotes performance on tasks requiring behavioral precision (Freund & Hennecke, 2015; Locke & Latham, 2006; Schmeichel et al., 2011; Taylor et al., 1998). This suggests that creating construal level task-motivation fit experimentally can enhance performance.

Knowledge of How to Create Construal Level Task-Motivation Fit

Recent metamotivation research suggests that Westerners have the requisite knowledge to create construal level task-motivation fit without researcher intervention (MacGregor et al., 2017; Nguyen et al., 2019). They understand that high-level versus low-level construal, respectively, promotes performance on high-level versus low-level tasks. They recognized, for example, that thinking about why versus how promotes self-control, as required when restraining from eating too many cookies (MacGregor et al., 2017). Conversely, they recognized that engaging in local versus global processing would promote performance on tasks that require behavioral precision, such as shooting basketball free throws (Nguyen et al., 2019). Critically, this knowledge guided their efforts to create construal level task-motivation fit, with participants preferring to engage in high-level versus low-level construal in preparation for high-level versus low-level tasks, respectively.

Culture and Construal Level

Whether such metamotivational knowledge generalizes across cultures is unknown. There is some reason to expect cross-cultural differences. For example, Easterners versus Westerners tend to adopt a broader, holistic processing style akin to high-level construal—attending to global wholes rather than local focal objects (Abel & Hsu, 1949; Ji, Peng, & Nisbett, 2000; Masuda & Nisbett, 2001; Nisbett, Peng, Choi, & Norenzayan, 2001). Research similarly suggests that adopting an interdependent versus independent self-construal (i.e., representation of the self in relation to vs. separate from others that is associated with Eastern vs. Western cultures, respectively) promotes global versus local visual processing (Kühnen & Oyserman, 2002; Lin, Lin, & Han, 2008)—another marker of high-level versus low-level construal. These apparent cross-cultural differences in the frequency of engaging in high-level versus low-level construal may lead Easterners relative to Westerners to become more familiar with the former relative to the latter. This might then lead Easterners relative to Westerners to be better able to recognize the benefits of high-level relative to low-level construal.[1]

On the other hand, there may be reasons to expect cross-cultural consistency in such knowledge. The CLT literature suggests that psychological distance—the removal of an event from direct experience—serves as a critical antecedent to construal level. When

[1] We note that research also suggests that Easterners vs. Westerners display greater sensitivity to situational context. Easterners vs. Westerners, for example, are less likely to evidence the correspondence bias (Masuda & Kitayama, 2004; Miyamoto & Kitayama, 2002)—the tendency to infer traits from behavior. Given that the trait attribution is associated with high-level rather than low-level construal (Nussbaum, Trope, & Liberman, 2003; Rim, Uleman, & Trope, 2009), this may suggest that Easterners at times may be more likely than Westerners to engage in low-level relative to high-level construal.

events are psychological distant relative to proximal (e.g., occurring in the distant vs. near future), people tend to construe them in higher level terms (e.g., Trope & Liberman, 2010). Two meta-analyses revealed that there is no evidence thus far for culture moderating the effect of psychological distance on construal level nor on any downstream consequences for judgments, decisions, and behavior (Soderberg, Callahan, Kochersberger, Amit, & Ledgerwood, 2015). The absence of any cross-cultural moderation in past CLT research may suggest similar cross-cultural consistency in the strategic use of construal level to enhance task performance.

The Present Research

We compare to what extent Americans and Japanese share similar or dissimilar knowledge of the regulatory benefits of high-level and low-level construal. Specifically, we examine whether they can identify when task performance benefits from high-level versus low-level construal. We also examine to what extent they recognize the usefulness of various construal level inductions—for example, thinking about why versus how (Study 1) and engaging in global versus local visual processing (Study 2). Moreover, beyond ratings of usefulness, we also measure participants' preferences for engaging in high-level and low-level construal as preparatory exercises for various tasks (Study 2). Doing so allows us to observe whether Easterners' metamotivational knowledge of construal level extends to their preparation for tasks that demand high-level versus low-level construal—a finding that previous research has documented in Westerners (Nguyen et al., 2019).

Sample Size and Exclusionary Criteria

All studies used mixed designs (between: culture; within: Scenario × Construal) to enhance statistical power. Based on past research (Nguyen et al., 2019), we targeted a sample size of $N = 200$. Our primary statistical test was a Bayesian linear mixed effects model—an analysis which allows for clearer interpretation of potential null findings. Given limited availability of software, however, we report sensitivity analyses based on a statistically similar mixed-design ANOVA (1 between-subjects factor, 2 within-subjects factors) with G*Power (Faul, Erdfelder, Buchner, & Lang, 2009). This analysis revealed that our target N would provide 80% power to detect an effect of $\eta_p^2 = .005$ and 90% power to detect an effect of $\eta_p^2 = .006$ for a three-way interaction within a mixed ANOVA. For reference, the estimated median effect size in social psychological research is $\eta_p^2 = .035$ (Lovakov & Agadullina, 2017). Critically, no data were analyzed until all data were collected for a given experiment.

We applied the same exclusion criteria as in previous research (Nguyen et al., 2019) with minor exceptions for experiments conducted in Japan, given differential concerns of online data quality. Specifically, we excluded participants who indicated they were not paying attention (i.e., reported being "very" or "extremely" distracted, or taking the study "not at all" or "a little" seriously on our attention check measures). Similarly, we excluded those who did not report being fluent in the language of the study materials. To address data quality concerns (TurkPrime, 2018), we also limited analyses for MTurk studies to responses with nonrepeating GPS coordinate data that were located in the U.S. We know of no comparable data quality concerns reported using Yahoo! Japan.

Study 1: Why Versus How in the United States and Japan

Method

Participants. Participants in Study 1 were drawn from similar online platforms in the United States and Japan in which adults can complete tasks in exchange for financial compensation. In our American sample, 100 American MTurk workers ($M_{age} = 37.86$, $SD_{age} = 13.51$; 56 women, 42 men, 2 transgender; HIT approval rate >97%) were compensated $0.60. In our Japanese sample, 101 Yahoo! Japan workers ($M_{age} = 40.90$, $SD_{age} = 8.24$; 31 women, 69 men, 1 transgender) were compensated 60 T-points (equivalent to 60 yen) to use on products and services associated with Yahoo! Japan. Study materials were professionally translated from English to Japanese and reviewed for accuracy and cultural appropriateness by a native Japanese speaking member of our research team. Participants only had access to one study reported in this paper to maintain naïveté.

Metamotivational knowledge assessment. Participants first read that people can think about why or how they engage in an action and that these ways of thinking can help or hurt goal pursuit (see Appendix A for instructions). Past research demonstrates that whereas thinking about why induces high-level construal, thinking about how induces low-level construal (Freitas et al., 2004). Participants then filled out a previously validated metamotivational knowledge assessment (Nguyen et al., 2019) that consists of 18 scenarios in randomized order (6 high-level scenarios, 6 low-level scenarios, and 6 control condition scenarios) based on past research demonstrating that task performance benefits from high-level or low-level construal (see Appendix B). Whereas high-level scenarios described tasks that require self-control, low-level scenarios described tasks that require contextual sensitivity and/or behavioral precision. The control condition described tasks for which one might not anticipate differences in performance as a function of construal level.

Usefulness of high-level and low-level preparatory exercises. For each scenario, participants rated how useful it would be for enhancing task performance to think about why versus how they would engage in the task described (1 = *extremely unhelpful*, 7 = *extremely helpful*).

Perceived task difficulty and enjoyment. To control for the potential impact of task difficulty and enjoyment on participants' usefulness ratings, we asked participants to rate the difficulty (1 = *extremely easy*, 7 = *extremely difficult*) and enjoyment (1 = *extremely unenjoyable*, 7 = *extremely enjoyable*) of each task.[2]

Demographics and final questions. Finally, participants reported their demographics and how distracted they were during the study and how seriously they took the study (1 = *not at all*, 2 = *slightly*, 3 = *somewhat*, 4 = *very,* 5 = *extremely*). Participants were then debriefed and paid.

[2] Whereas participants in U.S. provided these ratings *after* the usefulness ratings, participants in Japan provided these ratings *before* the usefulness ratings. Presenting difficulty and enjoyment ratings *before* the usefulness ratings did not impact findings in past metamotivation research with Western samples (Nguyen, Carnevale, Scholer, Miele, & Fujita, 2019).

Results

As our measures required sensitivity to subtle differences in language, we excluded participants who reported they did not pay attention (i.e., reported being "very" or "extremely" distracted or taking the study "not at all" or "a little" seriously) and those who reported they were not fluent in the language of the materials. Given concerns about "bots" on MTurk (TurkPrime, 2018), we also excluded responses with repeating GPS coordinates from our American sample. We had a final $N = 88$ for our American sample and a final $N = 100$ for our Japanese sample. We found no evidence of bot activity in the data in our Japanese samples, nor have there been any other reports of such activity on Yahoo! Japan.

Overview of analyses. Our primary research question examines whether there are cultural similarities or differences among Easterners and Westerners' knowledge of how to create construal level task-motivation fit. Given that traditional frequentist analyses cannot provide conclusive evidence for the lack of cultural differences (Gelman, Carlin, Stern, Dunson, Vehtari, & Rubin, 2013; Kruschke & Liddell, 2018), we conducted Bayesian analyses to allow for the interpretation of null findings. Specifically, we used the brms R package (Bürkner, 2017) with the recommended four MCMC sampling chains and 10,000 iterations (Gelman et al., 2013). For all analyses, we achieved sufficient model convergence (all R-hat values = 1.00) and model fit (all Pareto k values < 0.5). We report additional information on model convergence (trace plots) and model fit (p_loo) in the online supplement (see Tables S1–S3 and Figures S1–S3).

Model specifications. To examine American and Japanese participants' knowledge of how to create construal level task-motivation fit, we conducted two Bayesian mixed effects models: one with culture and one without. Doing so allows us to conduct model comparisons to test if culture plays an explanatory role. For the full model with culture, we regressed usefulness ratings on culture (−0.5 = Japan, 0.5 = United States), high-level task (1 = high-level task, 0 = low-level or neutral task), neutral task (1 = neutral task, 0 = low-level or high-level task), construal (−0.5 = how, 0.5 = why), task enjoyment, and all interactions among culture, high-level task, neutral task, and construal (for additional information about alternative models and Bayes factor tests, see the online supplemental material). We modeled participant and scenario as random intercepts. For the model without culture, we omitted culture and its interactions. To reduce the potential impact of response bias (Fischer, 2004) and to conform with Bayesian experts' advice on data preparation (Stan Development Team, 2014), we standardized ratings of usefulness and enjoyment within culture before analysis.

Selection of prior distributions. As recommended by others (Gelman, Jakulin, Pittau, & Su, 2008; Lemoine, 2019; Simpson, Rue, Riebler, Martins, & Sørbye, 2017), we used weakly informative priors instead of flat priors (i.e., completely uninformative priors). Weakly informative priors provide regularization by keeping inferences within a reasonable range of values given the measurement scales (Simpson et al., 2017). We used the recommended weakly informative priors for regression coefficients (normal distribution with $\mu = 0$ and $\sigma = 1$; Gelman et al., 2013) as well as the intercept, residual error, and standard deviations of random effects (Stan's default Student-t distribution, $\nu = 3$, $\mu = 0$ and $\sigma = 10$; Kruschke, 2014).

Model comparison. To test whether the observed data were more in line with the model with versus without culture, we used Bayesian model comparison via Bayes factor (for context: $1 < BF < 3$ = anecdotal evidence, $3 < BF < 10$ = moderate evidence, $10 < BF < 30$ = strong evidence, $30 < BF < 100$ = very strong evidence, $BF > 100$ = extreme evidence; Jeffreys, 1961). Model comparison revealed that the observed data were more in line with the model with culture, $BF_{10} = 8544.27$. We thus focus on this model for all subsequent analyses.

Knowledge of how to create construal level task-motivation fit. We reproduce the output for the linear mixed model with culture in Table 1. In the following, we report the Bayesian parameter estimates of the theoretically relevant effects along with the 95% highest density interval (HDI). The 95% HDI indicates the 95% most probable values of a parameter given the observed data (Kruschke &

Table 1
Bayesian Mixed Effects Model - Usefulness (Study 1)

Predictor	Estimate	*SE*	95% HDI
Intercept	−0.10	0.09	[−0.28, 0.07]
Culture (−0.5 = Japan, 0.5 = United States)	0.08	0.07	[−0.06, 0.22]
High-Level Task (1 = high-level, 0 = neutral, low-level)	**0.34**	**0.12**	**[0.12, 0.57]**
Neutral Task (1 = neutral, 0 = high-level, low-level)	−0.04	0.12	[−0.27, 0.19]
Construal (−0.5 = how, 0.5 = why)	**−1.00**	**0.03**	**[−1.07, −0.93]**
Task enjoyment (standardized)	**0.09**	**0.01**	**[0.06, 0.12]**
Culture × High-Level Task	−0.07	0.05	[−0.16, 0.03]
Culture × Neutral Task	**−0.18**	**0.05**	**[−0.27, −0.09]**
High-Level Task × Neutral Task	0.00	1.00	[−1.96, 1.97]
Culture × Construal	0.04	0.07	[−0.10, 0.17]
High-Level Task × Construal	**1.56**	**0.05**	**[1.46, 1.65]**
Neutral Task × Construal	**0.90**	**0.05**	**[0.81, 0.99]**
Culture × High-Level Task × Neutral Task	0.00	0.99	[−1.97, 1.95]
Culture × High-Level Task × Construal	**0.32**	**0.10**	**[0.13, 0.50]**
Culture × Neutral Task × Construal	0.18	0.09	[−0.01, 0.36]
High-Level Task × Neutral Task × Construal	0.01	0.98	[−1.91, 1.93]
Culture × High-Level Task × Neutral Task × Construal	−0.01	1.01	[−1.99, 1.97]

Note. HDI = highest density interval. Bolded lines reflect credible effects.

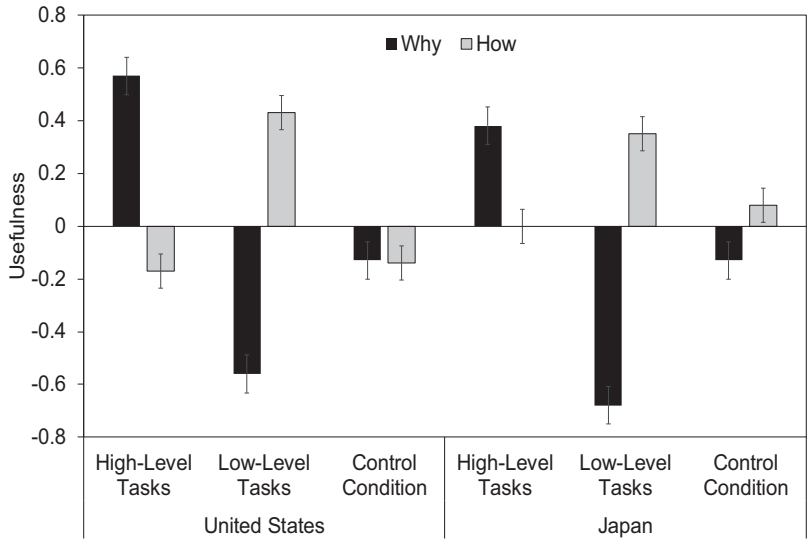

Figure 1. Average culture-centered endorsement of thinking about why versus how for tasks that require high-level construal versus low-level construal versus neither (control condition) in the United States and Japan (Study 1). Error bars reflect standard errors. See Table S10 in the online supplemental material for unstandardized means and standard deviations.

Liddell, 2018). If the 95% HDI does not include 0, the effect can be considered as credible (Kruschke, Aguinis, & Joo, 2012).

Results revealed credible evidence for a negative effect of construal for the reference group (low-level task), $\beta_{est} = -1.00$, $SE = .03$, 95% HDI = [−1.07, −0.93] (see Figure 1). This suggests that participants rated the how mindset as more useful than the why mindset for low-level tasks. This effect was not further moderated by culture, $\beta_{est} = 0.04$, $SE = .07$, 95% HDI = [−0.10, 0.17]. Results also revealed credible evidence for an interaction between high-level task and construal, $\beta_{est} = 1.56$, $SE = .05$, 95% HDI = [1.46, 1.65]. Further analysis of this interaction suggested that participants rated the why mindset as more useful than the how mindset for high-level tasks, $\beta_{est} = 1.11$, $SE = .12$, 95% HDI = [0.87, 1.34]. These results are consistent with the suggestion that there are cross-cultural similarities in people's knowledge of how to create construal level task-motivation fit.

The model, however, also revealed evidence for a Culture × High-Level Task × Construal interaction, $\beta_{est} = .32$, $SE = .10$, 95% HDI = [.13, .50]. When decomposing this interaction as a function of construal, we found credible evidence for a culture × high-level task interaction within the how mindset, $\beta_{est} = -.22$, $SE = .07$, 95% HDI = [−.36, −.09], but not why mindset, $\beta_{est} = .09$, $SE = .07$, 95% HDI = [−.04, .23]. Although one might interpret the former as reflecting cross-cultural differences, follow-up analyses revealed similar patterns of data across both samples. Participants in both cultures reported that thinking about how was less useful for high-level relative to low-level tasks; this effect, however, was more prominent among American, $\beta_{est} = -.53$, $SE = .12$, 95% HDI = [−.77, −.28], than for Japanese participants, $\beta_{est} = -.31$, $SE = .12$, 95% HDI = [−.55, −.07]. As we elaborate upon further in the discussion, rather than reflecting cross-cultural differences in knowledge of how to create construal level task-motivation fit, we might speculate that this result may instead be attributed more specifically to the use of "how" as an operationalization of construal level.

Discussion

Study 1 revealed that both American and Japanese participants appeared to recognize how to create construal level task-motivation fit, recognizing that thinking about why would benefit performance on high-level tasks, whereas thinking about how would benefit performance on low-level tasks. Study 1 also revealed some cultural differences in the endorsement of how as a preparatory strategy. Although participants from both cultures generally understood that thinking about how is less beneficial for high-level tasks compared to low-level tasks, this distinction was less pronounced among Japanese participants. We speculate that rather than reflecting some meaningful cross-cultural difference in metamotivational knowledge, this apparent effect may have resulted from the way we chose to operationalize construal level: specifically, why versus how. In Japan, the *way* people carry out actions is regarded as central to the act itself, as reflected in cultural practices such as *chado* or tea ceremony (Kondo, 1985; Sen, 1998) and *ikebana* or flower arrangement (Juniper, 2011; Sato, 2012). This may have led Japanese relative to American participants to generally endorse the benefits of how. To examine whether the cultural difference in endorsement of how found in Study 1 reflect differences in the endorsement of low-level construal more generally or cultural differences in the emphasis on how more specifically, Study 2 implemented a different operationalization of construal level—namely, global versus local processing.

Study 2 also examines the implications of American and Japanese participants' knowledge of how to create construal level task-motivation fit for choice preferences. Following past research (Nguyen et al., 2019), Study 2 not only assessed

participants' ratings of perceived usefulness of high-level and low-level construal, but also their preferences for engaging in these motivational orientations in preparation for high-level and low-level tasks.

Study 2: Global Versus Local Processing in the United States and Japan

Method

Participants. As in Study 1, participants were recruited similar online platforms in the U.S. and Japan in which adults can complete tasks in exchange for financial compensation. In our American sample, 101 American MTurk workers (M_{age} = 39.32, SD_{age} = 11.64; 46 women, 54 men, 1 transgender; HIT approval rate > 97%) completed survey materials in English and were compensated $0.60. In our Japanese sample, 99 Yahoo! Japan workers (M_{age} = 44.08, SD_{age} = 9.65, 34 women, 65 men) completed survey materials in Japanese and were compensated 60 T-points (equivalent to 60 yen) to use on Yahoo! Japan products and services. As in Study 1, the materials were translated from English to Japanese by a professional translator and reviewed by a native Japanese speaking member of our research team.

Introduction to preparatory exercises. Participants were told that people can view images in terms of the overall shape they create (i.e., global processing) or the individual shapes that make up the whole (i.e., local processing; see Appendix A). As in Study 1, participants were told that these mindsets can help or hurt goal pursuit. Past work demonstrates that global and local visual processing is associated with high-level and low-level construal (e.g., Wakslak & Trope, 2009), respectively. Participants were presented with three compound shapes of large elements composed of smaller elements: one shape represented the "standard" while the other two were "comparison shapes" (see Figure 2; Kimchi & Palmer, 1982; Navon, 1977). In the global (vs. local) mindset exercise, participants were asked to identify the option that resembled the standard in terms of its overall shape (vs. individual shapes). Next, participants completed four global mindset practice trials and four local mindset practice trials, with corrective feedback to ensure that participants understood the preparatory exercises. Finally, participants rated how difficult and enjoyable it was to engage in the global and local mindsets.

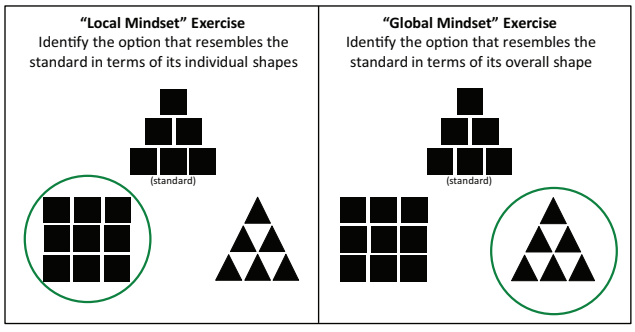

Figure 2. Instructions for the local (left) and global (right) mindset exercises for Study 2. See the online article for the color version of this figure.

Metamotivational knowledge assessment. Participants were presented with the same scenarios from Study 1. Participants first rated the difficulty and enjoyment of each task. Participants then rated the extent to which they preferred engaging in the global versus local mindset to prepare for the task described in each scenario (1 = *strongly prefer LOCAL,* 6 = *strongly prefer GLOBAL*). As in Study 1, we also assessed the perceived usefulness of global and local mindsets for performance in each scenario (1 = *extremely unhelpful*, 7 = *extremely helpful*).

Demographics and final questions. Participants reported their demographics and attention during the study. Given data quality concerns on MTurk (TurkPrime, 2018), we also asked participants to respond to an English proficiency check. Participants were then debriefed and compensated.

Results

We used the same exclusion criteria as Study 1 with the addition of the English proficiency check for the American sample. We had a final N = 87 for our American sample and a final N = 95 our Japanese sample.

Model specifications. To examine whether there are cross-cultural differences or similarities in knowledge of how to create construal level task-motivation fit, we again conducted and compared two Bayesian mixed effects models—one with culture and one without. We used the same model specifications (for additional information about alternative models and Bayes factor tests, see the online supplemental material), weakly informative priors, and data preparation procedures as in Study 1.

Model comparison. To test whether the observed data were more in line with the model with versus without culture, we used Bayesian model comparison via Bayes factor. Distinct from Study 1, model comparison revealed that the observed data were more in line with the model without culture, BF_{01} = 157.06. This finding provides initial evidence that there may be cross-cultural similarities in people's knowledge of how to create construal level task-motivation fit via global and local processing. To be able to draw direct comparisons to the results of Study 1, we nevertheless report the output from the linear mixed model with culture to fully explore what—if any—role culture might play in the results of Study 2. We reproduce the output in Table 2 and report the Bayesian parameter estimates and 95% HDIs of the theoretically relevant effects.

Knowledge of how to create construal level task-motivation fit. As in Study 1, results revealed credible evidence for a negative effect of construal, β_{est} = −0.57, SE = .03, 95% HDI = [−0.64, −0.50], suggesting that participants rated the local mindset as more useful than the global mindset for low-level tasks (see Figure 3). Replicating Study 1, this effect was not moderated by culture, β_{est} = −0.13, SE = .07, 95% HDI = [−0.26, 0.00]. Also, similar to Study 1, there was a credible interaction between high-level task and construal, β_{est} = 1.18, SE = .05, 95% HDI = [1.08, 1.27], such that participants rated the global mindset as more useful than the local mindset for high-level tasks, β_{est} = 0.57, SE = .04, 95% HDI = [0.48, 0.66]. Critically, and in contrast to Study 1, results revealed no credible effects or interactions involving culture. These results support the suggestion that there are

Table 2
Bayesian Mixed Effects Model - Usefulness (Study 2)

Predictor	Estimate	*SE*	95% HDI
Intercept	0.02	0.05	[−0.07, 0.11]
Culture (−0.5 = Japan, 0.5 = United States)	−0.04	0.09	[−0.21, 0.13]
High-Level Task (1 = high-level, 0 = neutral, low-level)	−0.02	0.04	[−0.09, 0.06]
Neutral Task (1 = neutral, 0 = high-level, low-level)	−0.05	0.04	[−0.13, 0.02]
Construal (−0.5 = local, 0.5 = global)	**-0.57**	**0.03**	**[−0.64, −0.50]**
Task enjoyment (standardized)	**0.05**	**0.01**	**[0.02, 0.07]**
Culture × High-Level Task	0.04	0.05	[−0.05, 0.14]
Culture × Neutral Task	0.08	0.05	[−0.02, 0.17]
High-Level Task × Neutral Task	0.01	0.99	[−1.92, 1.94]
Culture × Construal	−0.13	0.07	[−0.26, 0.00]
High-Level Task × Construal	**1.18**	**0.05**	**[1.08, 1.27]**
Neutral Task × Construal	**0.52**	**0.05**	**[0.43, 0.62]**
Culture × High-Level Task × Neutral Task	0.00	1.00	[−1.94, 1.97]
Culture × High-Level Task × Construal	−0.14	0.10	[−0.33, 0.05]
Culture × Neutral Task × Construal	0.04	0.10	[−0.15, 0.23]
High-Level Task × Neutral Task × Construal	0.01	1.00	[−1.94, 1.96]
Culture × High-Level Task × Neutral Task × Construal	−0.01	0.99	[−1.93, 1.94]

Note. HDI = highest density interval. Bolded lines reflect credible effects.

cross-cultural similarities in people's knowledge of how to create construal level task-motivation fit.

Preferences for high-level versus low-level preparatory exercises. Recall that we also measured participants' preferences for global versus local mindsets in anticipation of high-level and low-level tasks. To examine whether there were cultural differences or similarities in American and Japanese participants' preferences, we conducted and compared Bayesian linear mixed models with and without culture. For the model with culture, we regressed preferences on culture (−0.5 = Japan, 0.5 = United States), high-level task (1 = high-level task, 0 = low-level or neutral task), neutral task (1 = neutral task, 0 = low-level or high-level task), task enjoyment, and all interactions among culture, high-level task, and neutral task (for additional information about alternative models and Bayes factor tests, see the online supplemental material). We modeled participant and scenario as random intercepts and standardized preferences ratings within culture before analysis. Model comparison analyses revealed a very strong preference for the model without culture, BF_{01} = 584.37, suggesting cross-cultural similarities in participants' choice preferences. As with the ratings of perceived usefulness, however, we reproduce the output of the model with culture in Table 3 and report the Bayesian parameter estimates and 95% HDIs of the theoretically relevant effects.

Results revealed a credible negative effect of the intercept—that is, effect of low-level tasks (the reference group) on preferences,

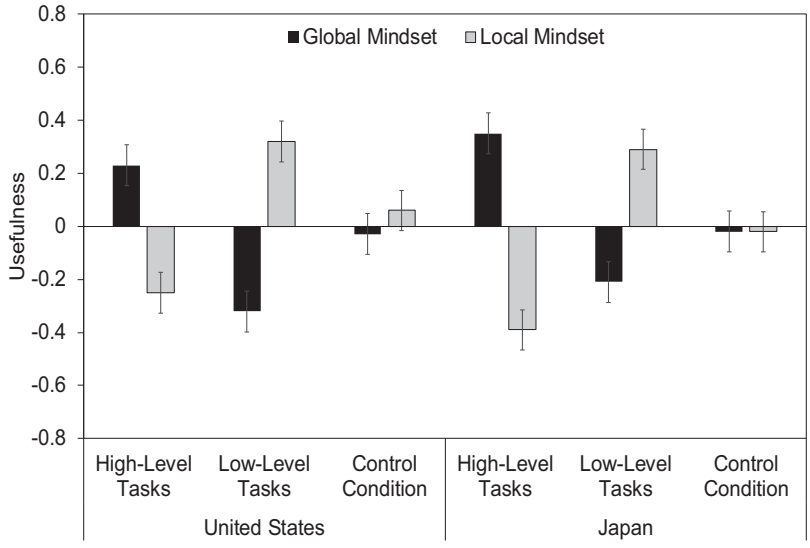

Figure 3. Average culture-centered endorsement of global versus local mindset for tasks that require high-level construal versus low-level construal versus neither (control condition) in the United States and Japan (Study 2). Error bars reflect standard errors. See Table S10 in the online supplemental material for unstandardized means and standard deviations.

Table 3
Bayesian Mixed Effects Model - Preferences (Study 2)

Predictor	Estimate	*SE*	95% HDI
Intercept	**−0.35**	**0.07**	**[−0.49, −0.21]**
Culture (−0.5 = Japan, 0.5 = United States)	0.05	0.08	[−0.11, 0.21]
High-Level Task (1 = high-level, 0 = neutral, low-level)	**0.71**	**0.09**	**[0.52, 0.89]**
Neutral Task (1 = neutral, 0 = high-level, low-level)	**0.34**	**0.09**	**[0.16, 0.53]**
Task enjoyment (standardized)	0.02	0.02	[−0.01, 0.06]
Culture × High-Level Task	−0.13	0.07	[−0.27, 0.01]
Culture × Neutral Task	−0.02	0.07	[−0.16, 0.12]
High-Level Task × Neutral Task	0.01	1.00	[−1.95, 1.95]
Culture × High-Level Task × Neutral Task	0.00	1.00	[−1.95, 1.97]

Note. HDI = highest density interval. Bolded lines reflect credible effects.

β_{est} = −0.35, *SE* = .07, 95% HDI = [−0.50, −0.21]. Stated otherwise, participants preferred the local mindset more than the global mindset for low-level tasks. Results also revealed credible evidence for an effect of high-level tasks on preferences, β_{est} = 0.70, *SE* = .10, 95% HDI = [0.51, 0.89], such that participants preferred the global mindset more than the local mindset. There was also a credible effect of neutral tasks on preferences, β_{est} = 0.36, *SE* = .09, 95% HDI = [0.17, 0.54]. No culture effects were credible. Thus, as with the usefulness ratings, the choice preference data suggests that there may be cross-cultural similarities in people's knowledge of how to create construal level task-motivation fit.

Discussion

Study 2 provided more compelling evidence that knowledge of how to create construal level task-motivation fit may be shared cross-culturally between Western and Eastern samples. In contrast to Study 1, Study 2 revealed no cultural differences in ratings of perceived usefulness of high-level and low-level construal. This suggests that the cultural differences found in Study 1 may reflect cultural differences in the endorsement of how specifically, rather than differences in knowledge more generally.

Study 2 also revealed cross-cultural similarities in people's preferences for high-level versus low-level preparatory exercises, suggesting that this knowledge may have important implications for their decision-making. One might reasonably ask whether participants' ratings of perceived usefulness mediated the relationship between performance task type (high-level vs. low-level) and preferences for high-level versus low-level preparatory exercises. For the sake of brevity, we report the results of a within-subjects mediation analysis in the online supplemental material (see Figure S9), which suggested participants' preferences for preparatory exercises were indeed guided by the perceived usefulness of these exercises. Thus, we believe it is reasonable to suggest that these data highlight cross-cultural consistency in how metamotivational knowledge impacts people's decisions.

General Discussion

Across two studies, we found cross-cultural similarities in metamotivational knowledge of how to create construal level task-motivation fit. Not only do these studies replicate the results of past research (e.g., MacGregor et al., 2017; Nguyen et al., 2019), demonstrating that Western participants have the necessary knowledge to regulate their motivation, these findings show for the first time that so too do Eastern participants. Results also suggest that people in both cultures have the necessary knowledge to identify different means with which to instantiate high-level and low-level construal—for example, thinking about why versus how (Study 1) and engaging in global versus local visual processing (Study 2). Moreover, Study 2 suggests that Easterners' and Westerners' knowledge of how to create construal level task-motivation fit extends to their preferences for how to prepare to perform high-level versus low-level tasks, indicating that this knowledge may influence decision making. In sum, the present work provides some preliminary evidence that both Westerners and Easterners have a similar understanding of how to create construal level task-motivation fit.

Despite the cross-cultural consistency in knowledge of how to create construal level task-motivation fit, there were notable cultural differences. In Study 1, although participants across both cultures recognized that thinking about how is less beneficial for high-level relative to low-level tasks, this understanding was less pronounced among Japanese participants. As noted earlier, this may reflect cultural practices in Japan that stress the importance of the way in which actions are carried out (vs. the outcome; Juniper, 2011; Kondo, 1985; Sato, 2012; Sen, 1998). As Study 2 did not replicate this cultural difference, this effect appears to be highly specific to the endorsement of how, rather than reflective of the endorsement of low-level construal more generally. This cultural difference highlights an important insight—although different operationalizations of construal level are related, they are not always isomorphic.

Limitations

Although these studies generally reveal cross-cultural similarities in people's knowledge of how to create construal level task-motivation fit, there are a few limitations. One limitation of these studies is that both studies gave participants the opportunity to read and/or practice the construal level exercises. This educational portion of the introduction of the study may introduce the possibility of demand. We think this is unlikely for two reasons. First, previous work suggests that omitting these detailed instructions produces largely similar results (Nguyen et al., 2019), suggesting that these details are not a necessary condition for the effect. Second, past research using alternative methodology (e.g., thought-listing task) to assess knowledge of construal level task-motivation fit (MacGregor et

al., 2017) reveal similar results, further suggesting that these findings are not reducible to demand. Nevertheless, future work might reevaluate the current findings using alternative assessments of metamotivational knowledge.

A second limitation is that although we documented cultural similarities in metamotivational knowledge, we did not explore the implications of this knowledge beyond people's preferences in response to hypothetical scenarios. Future work might assess this knowledge in more consequential contexts with behavioral measures that extend beyond task preparation. Doing so would allow one to confirm whether these cultural similarities are evident using alternative methodologies and extend them to other important outcomes.

Future Directions

Future research might examine whether there are cultural differences or similarities in other types of metamotivational knowledge beyond construal level. Although the present findings provide some initial evidence of cross-cultural consistency with respect to construal level, research by Scholer and Miele (2016) raises the possibility of cross-cultural differences in people's metamotivational knowledge of regulatory focus (Higgins, 1998). In general, Scholer and Miele (2016) have found that North Americans understand the functional roles of promotion-focus (i.e., a motivational orientation toward gains) versus prevention-focus (i.e., a motivational orientation toward losses) in enhancing performance for tasks that respectively require eagerness versus vigilance. However, consistent throughout their studies is a general tendency for North Americans to endorse promotion-focus—evidence of a promotion bias. Given that past research has found cultural variation in promotion-focus versus prevention-focus (Higgins, 2008; Ouschan, Boldero, Kashima, Wakimoto, & Kashima, 2007), it is possible that future cross-cultural research may reveal a prevention bias in prevention-dominant cultures. Moreover, cross-cultural differences in such biases may lead to potential cross-cultural differences in people's preferences for engaging in promotion or prevention focus in response to different tasks, thus suggesting cultural factors that may impact when and why people succeed or fail at self-regulation.

Although the current work focused on whether people have accurate metamotivational knowledge, examining inaccuracies in people's motivational beliefs may be equally illuminating and worthy of cross-cultural investigation. For example, initial cross-cultural research has revealed cross-cultural similarities in people's inaccurate beliefs about intrinsic versus extrinsic incentives. People in both the U.S. and Japan fail to recognize that external rewards can undermine one's intrinsic motivation to complete a task (Murayama et al., 2016). Future research may extend this work by examining whether there may be other inaccuracies in people's motivational beliefs and the consequences of these misbeliefs.

Beyond the U.S. and Japan, future research should examine whether people in other countries have differing beliefs on how to regulate motivation, and whether these beliefs lead them to pursue different strategies. Although people in every culture may evidence goal pursuit success, they may do so via different routes. Differing beliefs may also lead people to pursue different types of goals. Conducting cross-cultural metamotivation research may illuminate such differences and provide new insight into self-regulation. Moreover, such work may also form the basis of future research aimed at developing culture-specific interventions for goal pursuit.

Advancing Cross-Cultural Motivation Research

The study of metamotivation pushes researchers to examine whether and to what extent people understand the basic functions of motivation. As metamotivation research develops, it is important to examine whether metamotivational knowledge of various motivational states is shared or unique across cultures. Most self-regulation research assumes universality—but this assumption requires empirical testing and research may highlight important differences in how people pursue their self-regulatory efforts. Such work may advance cross-cultural motivation science by providing insight into the factors that promote or hinder goal pursuit in different cultural contexts.

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Appendix A

Instructions

Note: We counterbalanced the presentation order of high-level and low-level construal across both studies.

Study 1 (Why/How): English

People often spend time thinking about upcoming events, and they can think about the same event in many different ways. For example, every activity can be thought of in terms of the reasons WHY people engage in it or in terms of the process of HOW people engage in it.

When people consider WHY they perform an action, they think about the purpose or meaning of the behavior. When people consider HOW they perform a behavior, they think about the steps involved in the action and the specific means used to complete it.

Consider the activity of "reading a novel". It is equally possible to consider the reasons WHY one reads a novel (e.g. to relax after a stressful day) or the process of HOW one reads a novel (e.g. by moving one's eyes over lines of text).

Some of these ways of thinking help us reach our goals, whereas other ways of thinking can prevent us from reaching our goals.

Study 1 (Why/How): Japanese

人はしばしば今後の予定について考えます. その際, 1つの予定をさまざまな見方で考えることができます. 例えば, なぜその活動に取り組むのかという観点から考えることもできる一方, どのように取り組むのかという観点から考えることもできます.

人がなぜ行動を起こすのか考える時, その行動のより広範な目的や意味について考えます. 人がどのように行動するのか考える時,その行動に取り組むためのステップや,その行動を完了するために利用する具体的な手段について考えます.

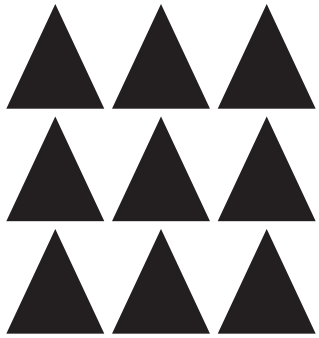
「小説を読む」という行動を考えてみましょう. 人がなぜ小説を読むのか(例えば, ストレ スの多い1日の終わりにリラックスするため)考えることも,どのような手順で小説を読むのか(例えば, 行を目で追いながら)考えることも同様に可能です.

ある目標を達成するうえで, ある考え方が役に立つこともあれば, 逆に目標達成を妨げる可能性のある場合もあります.

Study 2 (Global/Local): English

People often spend time looking at images, and they can see the same image in many different ways. For example, an image can be represented in terms of the overall shape it creates or in terms of the individual shapes of which it consists.

Consider the following example. It is equally possible to see the overall shape (e.g., a square) or the individual shapes of which it consists (e.g., triangles).

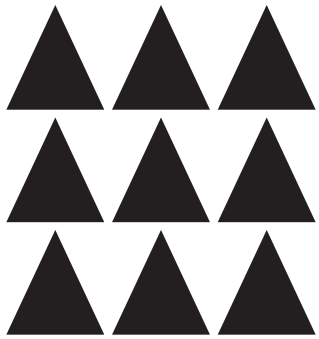


Different ways of looking at images can be thought of as different "mindsets." Some mindsets can prepare our thinking to help us reach our goals, whereas other mindsets can prevent us from reaching our goals.

Study 2 (Global/Local): Japanese

人は日常的に画像を目にすることがあります. その際, 1つの画像をさまざまな見方で見ることができます. 例えば, 個々の要素によって形成された全体的な形という観点から画像を捉えることもできる一方, 全体的な形を構成する個々の形という観点から画像を表すことができます.

次の例を考えてみてください.全体的な形を見ること(例えば,四角形)も,それを構成する個々の形を見ること(例えば,複数の三角形)も同様に可能です.



「個別要素」の形状に注目するのか, 「全体」の形状に注目するのかによって, 人の「マ インドセット」(=物事の見方)は変わってきます. ある目標を達成しようとする際, それに役立つマ インドセットがある一方で, 目標達成を妨げるマ インドセットもあります.

(*Appendices continue*)

Appendix B

Scenarios

Type	Scenario in English and Japanese
Low-Level: Proofreading	Please begin by imagining that you are taking part in a task designed to test your writing ability. The test requires that you read a long written passage that contains various misspellings. Your task will be to identify and correct these typos. Imagine that you want to perform as well as you can on the writing test, but you know it will require a lot of attention to find and fix the misspellings. 文章力を測定するための課題に取り組んでいる状況を想像してください。このテストでは、さまざまな誤字が含まれた長文を読みます。あなたはこれらの誤字を見つけ出し、修正しなければなりません。このテストではできる限り良い結果を出したいと思っていますが、誤字を見つけ修正するにはかなりの注意力が必要です。
Low-Level: Basketball	Please begin by imagining that you are taking part in a task designed to test your hand-eye coordination. The test requires that you shoot basketball free throws. The goal is to get as many of the basketballs as possible to go through the hoop in a set amount of time. Imagine that you want to perform as well as you can on the test of hand-eye coordination, but you know you really need to get in the zone to avoid making mistakes. 反射神経を測定するために作られた課題に取り組んでいる状況を想像してください。この課題では、バスケットボールのフリースローをします。目標は決められた時間内にできるだけ多くのボールをゴールに投げ入れることです。この課題ではできる限り良い結果を出したいと思っていますが、ミスを避けるにはかなりの集中力が求められます。
Low-Level: Stroop	Please begin by imagining that you are taking part in an experiment during which you will be shown a number of words. For each word, your task is to identify what color font the word is written in. In some cases, the word and the color will match (ex: BLUE). In other cases, the word and the color will not match (ex: BLUE), which will require you to ignore the meaning of the word and focus only on font color. Imagine your task is to identify the font color as quickly and as accurately as possible, but you know it will take effort to direct your attention away from the meaning of the word. 多くの単語が提示される実験に参加している状況を想像してください。この実験では、各単語が何色の文字で書かれているかを識別し回答しなければなりません。単語と文字色が一致している場合もありますが(例:青)、単語と文字色が一致していない場合もあります(例:青)。単語の意味は無視して文字の色だけに集中しなければなりません。ここでの課題は、文字の色をできるだけ早く正確に識別することですが、単語の意味に惑わされず文字色だけに注意を向けるためには、相当な努力を要します。
Low-Level: Vigilance	Please begin by imagining that you are taking part in a task designed to test your vigilance, or your ability to pay careful attention to details. The vigilance test requires that you read a long written passage and cross out any instances of the letters “z” or “q”. Imagine you want to perform well on the vigilance test, but you know it will require full concentration to identify these rarely used letters within the long passage. あるテストに取り組んでいる状況を想像してください。このテストは、あなたがどれくらい高い注意力を有しているか、またどれくらい細部にまで細心の注意を払うことができるかを分析するものです。このテストでは、長文を読み、そこに出てくる平仮名の「ぬ」と「ね」をすべて線で消していくという作業を行わなければなりません。あなたはこのテストで結果を出したいと考えていますが、長い文章の中でほとんど使われていないこれらの文字を見つけていくには高い集中力が求められます。
Low-Level: Darts	Please begin by imagining that you are taking part in a task designed to test your accuracy and precision. The test requires that you throw darts at a dartboard located 20 feet away. The goal is to get as many of the darts as possible as close to the center of the dartboard as possible. Imagine that you want to perform as well as you can on this test of accuracy and precision, but you know you will need to fully focus to get it just right. ある課題に取り組んでいる状況を想像してください。この課題は、人がどれくらいの正確さや緻密さを持っているかについて明らかにするためのものです。この課題では、6メートル離れた的にダーツを投げます。あなたは、できるだけ多くの矢を的の中心付近に当てなければなりません。この課題ではできる限り良い結果を出したいと思っていますが、正確に的に当てるにはかなり集中する必要です。
Low-Level: Mini golf	Please begin by imagining that you are taking part in a task designed to test your motor skills. The test requires that you play a round of miniature golf. The goal is to putt as many of the golf balls as possible into the hole with as few swings as possible. Imagine that you want to perform as well as you can on this motor skills test, but you know you will have to monitor your strokes to not make any unnecessary mistakes. 運動神経を測定するための課題に取り組んでいる状況を想像してください。この課題では、ミニゴルフを1ラウンドします。あなたが達成すべき目標は、できるだけ少ないスイングでできるだけ多くのボールを穴に入れることです。この運動神経テストではできる限り良い結果を出したいと思っていますが、不必要なミスを防ぐためには、一打一打を注意深く行っていく必要があります。

(*Appendices continue*)

Appendix B (*continued*)

Type	Scenario in English and Japanese
High-Level: Inconvenient recycling	Please begin by imagining that you must make a choice between recycling a bottle of water or throwing it away. While you value recycling and believe that it is important, there is no recycling bin nearby, only a trashcan, so you will have to carry the water bottle around with you until you can recycle it. Imagine that you want to recycle the bottle to improve the environment, but you know it will be inconvenient since there is no recycling bin nearby. ペットボトルをリサイクルするか捨てるか選択しなければならない状況を想像してください。あなたご自身は、リサイクルの考え方を高く評価し、重要なことだと思っています。しかし、周辺にリサイクル用のゴミ箱はなく、普通のゴミ箱しかないため、リサイクル用ゴミ箱までそのペットボトルを持ち歩かなければなりません。自然環境を保護するためにペットボトルをリサイクルしたいと考えていますが、周辺にリサイクル用のゴミ箱がないため、遠くにあるリサイクル用ゴミ箱までペットボトルを持ち歩くのは面倒だとも感じています。
High-Level: Delay discounting	Please begin by imagining that you're about to choose between two money options. If you choose Option 1, you will immediately receive $30. If you choose Option 2, you will receive $60 in three months. Though it would be nice to get $30 right now, you know that you would receive more money in the long run if you choose Option 2 ($60). Imagine that your goal is to convince yourself to choose Option 2 ($60), but this is challenging because you're tempted to receive $30 immediately. お金に関する2つの選択肢のどちらかを選ぼうとしている状況を想像してください。選択肢1を選べば、3,500円すぐに受け取れます。選択肢2を選べば、3か月後に7,000円受け取れます。今すぐ3,500円もらえるのはいいのですが、選択肢2(7,000円)を選べば、長い目で見てより多くもらえることも分かっています。選択肢2(7,000円)を選ぶよう自分自身を説得しようと試みますが、ついすぐに3,500円受け取りたくなるため、2つのなかから選ぶのが難しいと感じています。
High-Level: Getting Negative feedback	Please begin by imagining that you are about to be evaluated by your boss. Your boss has written two letters, one describing your strengths and one describing your weaknesses, and then asks you to choose which letter you will read. You believe that hearing about your strengths will make you feel good, but you know that hearing about your weaknesses will help you improve and get better at your job. Imagine you really want to choose the information about your weaknesses to get better at your job, but you know that hearing about your strengths will make you feel good. 上司があなたを評価しようとしている状況を想像してください。あなたの評価に関する2つの書類を作成した上司は、どちらを読んでみたいか、あなたに尋ねてきました。片方にはあなたの長所が書かれており、もう片方にはあなたの短所が書かれています。自分の長所を聞くのは気持ちのいいものですが、短所を聞けば、自身の仕事を改善¢上達させるのに役立つと思っています。自身の仕事をより良いものにするために短所に関する意見を選びたいと考えているものの、一方で、長所を聞くと気持ちがいいとも思っています。
High-Level: Studying vs. procrastination	Please begin by imagining that you are a college student taking an important class in your major and you have a midterm in that class tomorrow morning. However, your friends have invited you to hang out tonight and watch a movie that you've been waiting to see. Imagine that doing well on the midterm is an important goal to you, but you're tempted to procrastinate and hang out with your friends instead of studying for your midterm. あなたは大学生で、自身が所属する専攻の重要なクラスを取っているとします。明日の朝、そのクラスの中間試験があるという状況を想像してください。しかし、友人たちが今夜一緒に出かけ、あなたがずっと観たかった映画を観ようと誘ってきました。中間試験でよい成績を取ることは重要な目標ですが、試験勉強を後回しにして友人たちと遊びたいという気持ちもあります。
High-Level: Emotion regulation	Please begin by imagining that you have gotten into a disagreement with a friend. The situation has made you very angry, but you still value your friendship. Imagine you want to control your emotions to avoid escalating the argument, but this is challenging because of your level of anger. 友人といざこざになった場面を想像してください。あなたは非常に強い怒りを覚えましたが、それでも友情は大切にしたいとも思っています。言い争いがエスカレートするのを避けるため、自分の感情をコントロールしたいと考えていますが、あなたの怒りのレベルからして、それは難しい状況です。
High-Level: Listening to criticism	Please begin by imagining that you are very involved in a community organization that is very important to you. At a recent meeting, a group member spoke out against the group and suggested that to achieve its goals, the group would have to change. You know that improving the organization involves taking criticism seriously, even though hearing the criticism is unpleasant. Imagine you really want to listen to criticism about your organization because you want it to be better, but you love the organization and don't enjoy hearing it criticized. あるコミュニティ組織に所属している状況を想像してください。このコミュニティは、あなた自身にとって非常に大切なものです。最近の会議でメンバーの一人がグループを批判し、目標を達成するにはグループが変わらなければならないと提案しました。批判を耳にすることは不快ではありますが、組織を改善するには真剣に批判を受け止める必要があることもわかっています。組織をより良くするために組織に対する批判を聞きたいと考えていますが、あなたはそのグループが好きなので批判されるのを聞くのは気持ちが良いことではありません。

(*Appendices continue*)

Appendix B (*continued*)

Type	Scenario in English and Japanese
Control: Daydreaming	Please begin by imagining that you are about to take a bus across town to meet a friend at a coffee shop. You are looking forward to meeting up with your friend and have some time to daydream as the bus makes its way across town. Imagine that you really want to daydream during the bus ride. カフェで友人と会うため、隣街へ行くバスに乗ろうとしている場面を想像してください。あなたは友人との待ち合わせを楽しみにしており、行先に向けて走るバスの車内で、友人との楽しい時間を想像し、わくわくしながら現地に向かいたいと思っています。バス乗車中に、このような楽しい想像に浸りたいと思っている場面を想像してください。
Control: Meditation	Please begin by imagining that you are about to meditate. You have had a busy week and you are eager to spend some time in quiet contemplation. You really want to quiet your thoughts and come out of this meditation session with a calmed mind. Imagine that your goal is to relax during this meditation session. 瞑想を行おうとしている場面を想像してください。忙しい1週間を終え、静寂な瞑想の時間を過ごしたいと思っています。考えを落ち着かせ、穏やかな気持ちで瞑想の時間を終えたいと心から思っています。 瞑想中にリラックスすることを目標としている状況を想像してみてください。
Control: Choosing movie	Please begin by imagining that you are about to unwind after a long week. You are looking forward to relaxing on your couch and watching a movie. You recently got a free trial for an online movie database that features hundreds of top-rated movies from every genre. You are eager to look through all your options. Imagine your goal is to choose a movie. 長い1週間を終えてリラックスしようとしている場面を想像してください。あなたはソファでリラックスして映画を観るのを楽しみにしています。最近、あらゆるジャンルの大人気映画を何百本も観ることができるオンライン映画データベースの無料試用版を手に入れました。あなたは全ての選択肢に目を通したいと思っています。映画を選ぶことが目標という状況を想像してみてください。
Control: Free dessert	Please begin by imagining that you have received a coupon from your favorite restaurant for a free dessert. On your birthday, you have dinner at that restaurant and then you start to look over the dessert menu. You are looking forward to getting a free dessert and you are eager to indulge on your special day. Imagine that your goal is to savor and enjoy the free dessert. お気に入りのレストランからデザートの無料クーポンを受け取ったことを想像してください。ご自身の誕生日にそのレストランで食事をし、デザートのメニューに目を通しています。無料デザートを食べるのを楽しみにしており、特別な日に自分へのご褒美をしたいと思っています。無料デザートを味わい、楽しみたいと思っている場面を想像してください。
Control: Mailing holiday cards (US), Mailing Nengajo (Japan)	Please begin by imagining that you are addressing envelopes to mail for the holidays. You enjoy sending out holiday cards and thinking about your friends and family all around the country. You really want to get the cards in the mail tomorrow so your loved ones can receive them soon. Imagine your goal is to address every envelope by the end of the evening. 年賀状の宛名書きをしている場面を想像して下さい。年賀状を送ることや、各地にいる友人¢家族を思い浮かべることを楽しんでいます。大切に思う人たちに年賀状を早く届けられるよう、年賀はがきを明日郵送で手に入れたいと強く思っています。夜が明けるまでに全てのはがきに宛名を書き終えることが目標です。
Control: Enjoying evening with friends	Please begin by imagining that you are going out to dinner with friends for the evening. You are looking forward to trying a new restaurant and spending time with friends. Imagine your goal is to have a pleasant and enjoyable evening. 友人たちと夕食を食べに出かけようとしている場面を想像して下さい。あなたは新しいレストランへ行き、友人たちと一緒の時間を過ごすことを楽しみにしています。楽しく心地のよい夜を過ごすことが目標という状況を想像してみてください。

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