Article

A Cross-Cultural Investigation of Metamotivational Beliefs About Regulatory Focus Task-Motivation Fit

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Abstract

Recent metamotivation research revealed that Westerners recognize that promotion versus prevention motivations benefit performance on eager versus vigilant tasks, respectively; that is, they know how to create task-motivation fit with respect to regulatory focus. Westerners also believe that, across tasks, promotion is more beneficial than prevention (i.e., a promotion bias). Adopting a cross-cultural approach, we examined whether beliefs about task-motivation fit generalize across cultures, whether Easterners exhibit a contrasting prevention bias, and the role of independence/interdependence in these beliefs. Results revealed cross-cultural similarities in metamotivational beliefs. Moreover, Easterners and Westerners alike often exhibited a promotion bias, suggesting that this effect may not be shaped by culture. One potential cultural difference did emerge: Easterners appeared to recognize how to create task-motivation fit for both independent and interdependent outcomes, whereas Westerners only recognized how to do so for independent outcomes. We discuss the role of culture in shaping metamotivation.

Keywords

metamotivation, culture, regulatory focus, task-motivation fit

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Self-regulation research examines how people control their thoughts (e.g., Flavell, 1979), feelings (e.g., Tamir, 2016), and behaviors (e.g., Carver & Scheier, 1982) in goal pursuit, with less attention paid to whether and how people regulate their motivation (cf. Sansone et al., 1992; Wolters, 2003). Metamotivation research addresses this gap by examining belief-based mechanisms by which people modulate the quality and quantity of their motivation to enhance performance and attain desired ends (Fujita et al., 2019; Miele et al., 2020; Miele & Scholer, 2018; Scholer et al., 2018). This work demonstrates that people generally have accurate beliefs about how to regulate qualitatively distinct motivational states and that individual differences in these metamotivational beliefs predict consequential outcomes (Hubley et al., 2020; MacGregor et al., 2017; Nguyen et al., 2019; Scholer & Miele, 2016).

Much of the extant metamotivational literature is based on Western samples (cf. Murayama et al., 2016; Nguyen et al., 2020). Whether metamotivational processes are similar across cultures is largely unknown. Given documented cultural differences in regulatory focus (Higgins, 2008; Kung et al., 2016), we examine whether metamotivational beliefs about promotion and prevention motivations are shared or different across cultures. Our aim is to highlight important cross-cultural similarities and differences in motivation regulation.

Regulatory Focus Theory

Regulatory focus theory (Higgins, 1997) distinguishes between two qualitatively distinct motivations—promotion focus and prevention focus. A promotion focus leads people to represent their goals as hopes and aspirations and sensitizes them to the presence of gains versus absence of non-gains. By contrast, a prevention focus leads people to represent their goals as duties and responsibilities and sensitizes them to the presence of losses versus absence of non-losses. Adopting either motivation involves tradeoffs (Scholer & Higgins, 2012). Whereas a promotion focus may lead to overlooking

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potential losses in the pursuit of gains (e.g., splurging on new experiences and leaving no savings for unexpected costs), a prevention focus may lead to missing opportunities for gains when protecting against losses (e.g., saving every penny and missing out on fun occasions). Regulatory fit theory (Higgins, 2000) suggests that these tradeoffs highlight the importance of adopting a promotion or prevention focus at different times. One way in which fit can be experienced is by having the "right" motivation for the "right" task—that is, task-motivation fit (Scholer & Miele, 2016).

Tasks can differ in the extent to which performance requires eagerness (i.e., enthusiastically seeking opportunities for gain) versus vigilance (i.e., zealously protecting against potential losses). Take, for instance, the goal of writing a scientific paper. This may involve eager tasks (e.g., brainstorming future directions) and vigilant tasks (e.g., proofreading the statistics). Whereas a promotion focus motivates individuals to use eager strategies, a prevention focus motivates them to use vigilant strategies. Thus, people should experience task-motivation fit when they complete eager tasks with a promotion focus and vigilant tasks with a prevention focus. Indeed, research supports this prediction and demonstrates that task-motivation fit enhances regulatory outcomes (Latimer et al., 2008; Spiegel et al., 2004).

Past research has manipulated task-motivation fit using various methods. One method involves preparatory strategies—that is, strategies that induce a motivational state prior to a task. Past work demonstrates, for example, that asking participants to think about their aspirations versus duties enhanced enjoyment of subsequent eagerness-related versus vigilance-related tasks, respectively (Freitas & Higgins, 2002). Another method involves task-integral strategies—that is, strategies that instantiate a motivational state during a task. Previous research shows that using incentives to orient people toward the presence or absence of gains and non-gains (vs. losses and non-losses) during a task enhanced performance on components of a task that require eagerness (vs. vigilance; Förster et al., 2003). Thus, manipulating task-motivation fit through preparatory strategies or task-integral strategies can promote task enjoyment and performance. Left unclear from past work, however, is whether people recognize how to create task-motivation fit on their own—a key question derived from the metamotivational approach.

Metamotivation

Metamotivation refers to the mechanisms by which people monitor and modulate their motivational states to achieve desired ends (Fujita et al., 2019; Miele et al., 2020; Miele & Scholer, 2018; Scholer et al., 2018). To regulate one's motivational states, one must have, at minimum, two types of knowledge. First, one must have task knowledge—that is, recognize which motivational state can address task demands. For instance, in an air traffic control task (which requires vigilance over eagerness), one must recognize that a prevention focus is better suited for this task than a promotion focus. Second, one must have strategy knowledge—that is, recognize how to instantiate a desired motivational state. For air traffic control, one must identify ways to instantiate prevention focus through preparatory strategies (e.g., thinking about one's duties) or task-integral strategies (e.g., focusing on losses and non-losses). Gaps in either type of knowledge may hinder motivation regulation.

Importantly, metamotivational knowledge may be tacit (Wagner & Sternberg, 1985). That is, people may have the requisite understanding of how to regulate motivation, but they may be unable to articulate how to do so (Nisbett & Wilson, 1977). Borrowing methods from tacit knowledge research (Wagner & Sternberg, 1985), metamotivation research typically assesses knowledge by presenting participants with different tasks and asking them to evaluate the efficacy of various strategies for bolstering performance.

Metamotivational Knowledge of How to Create Regulatory Focus Task-Motivation Fit

Scholer and Miele (2016) first demonstrated that people understand how to create task-motivation fit through promotion and prevention focus—that is, regulatory focus task-motivation fit.[1] Their key assessment presented participants with pairs of tasks and preparatory strategies. For each pair, participants rated how successful they would be on the task if they completed the preparatory strategy. This work revealed that people recognized that they would be more successful when engaging in promotion-inducing preparatory strategies before eager tasks versus vigilant tasks. By contrast, people believed that they would be more successful when engaging in prevention-inducing preparatory strategies before vigilant tasks versus eager tasks. In a similar assessment that used task-integral strategies, people recognized that they would perform better on vigilant tasks (vs. eager tasks) when the tasks incentivized non-losses (vs. gains).

Scholer and Miele (2016) also found that people held inaccurate metamotivational beliefs: participants overgeneralized the benefits of a promotion focus, such that they rated promotion-inducing strategies as generally more advantageous than prevention-inducing strategies across tasks (i.e., a promotion bias). Although participants tended to recognize that prevention-inducing strategies would be more useful for vigilant tasks than for eager tasks, they also believed that vigilant tasks would be performed better (or at least as well) using promotion-inducing (vs. prevention-inducing) strategies. This promotion bias could be driven by systematic cultural variation in regulatory focus (Higgins, 2008; Kung et al., 2016). However, given that these experiments exclusively recruited North American participants, we cannot evaluate this possibility without cross-cultural data.

Cross-Cultural Investigation of Metamotivational Beliefs

This work is a cross-cultural investigation of metamotivational beliefs about creating regulatory focus task-motivation fit. Given that Westerners are more promotion-focused (and less prevention-focused) than Easterners (Higgins, 2008; Kung et al., 2016), this comparison provides fertile ground for exploring metamotivational similarities and differences across cultures. As posited by Scholer and Miele (2016), people may overgeneralize the benefits of a culturally valued motivational orientation. Specifically, Westerners may exhibit a promotion bias, whereas Easterners may have a prevention bias—consistent with cross-cultural research showing that Easterners and Westerners are particularly motivated by the culturally dominant regulatory focus (Lockwood et al., 2005; Uskul et al., 2009; see also Elliot et al., 2001). It is also possible, however, that metamotivational knowledge may operate similarly across cultures (Nguyen et al., 2020), even if those cultures differ in their predominant regulatory focus. Thus, one aim of this work is to examine the role that culture may (or may not) play in shaping a promotion or prevention bias in each culture.

Another aspect of metamotivation worth examining cross-culturally is the independence versus interdependence of the strategies people use to modulate their motivational states. Past metamotivation research focused on strategies framed solely in terms of the self. Yet cross-cultural research (Markus & Kitayama, 1991) often distinguishes between independent self-construals (i.e., the self as separate from others) versus interdependent self-construals (i.e., the self in relation to others) and demonstrates that independence is more prevalent among Westerners, whereas interdependence is more prevalent among Easterners (Markus et al., 1996). Moreover, Lee and colleagues (2000) found that promotion-focused (vs. prevention-focused) information was valued among those with independent (vs. interdependent) self-construals, those in independent (vs. interdependent) situations, and Westerners (vs. Easterners). Independence versus interdependence may thus shape people's metamotivational beliefs about creating regulatory focus task-motivation fit—a possibility we examine as another aim of this work.

The Present Research

This work addresses three research questions. First, we examine whether Japanese participants (i.e., those in an interdependent culture) exhibit the same metamotivational beliefs observed in prior work with North American participants (i.e., those in an independent culture; Scholer & Miele, 2016). We assess beliefs about preparatory strategies (Experiments 1 and 2) and task-integral strategies (Experiment 3). Second, we examine whether Westerners and Easterners recognize how to create task-motivation fit with independent and interdependent strategies (Experiments 2 and 3). Using multiple types of strategies may reveal what factors are culturally similar or different in motivation regulation. Third, we aim to replicate the promotion bias among North American samples (Experiments 2 and 3) and examine whether a prevention bias emerges among Japanese samples (Experiments 1 to 3). Taken together, this work assesses the extent to which culture shapes beliefs about regulatory focus task-motivation fit.

Analytic Plan, Power, and Exclusions

Analytic Plan

All materials, syntax, and data set codebooks are available on Open Science Framework (OSF; https://osf.io/9nskf/). Given that frequentist analyses cannot provide conclusive evidence for the lack of cultural differences—a possibility we wanted to entertain—we conducted Bayesian analyses (Kruschke & Liddell, 2018). We used the brms R package (Bürkner, 2017) with the recommended four Markov chain Monte Carlo (MCMC) sampling chains and 10,000 iterations (Gelman et al., 2013).[2] To reduce the impact of cultural response bias (Fischer, 2004) and conform with Bayesian experts' advice (Lemoine, 2019), we standardized continuous variables within culture. In the supplemental online materials (SOM), we report parallel results using frequentist analyses (using standardized and unstandardized data). Results generally converged across analyses; we note meaningful divergences in footnotes.

As recommended by experts (Gelman et al., 2013; Lemoine, 2019), 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 (Lemoine, 2019). We used 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 (Student's *t*-distribution, $\nu = 3$, $\mu = 0$ and $\sigma = 2.5$; Kruschke & Liddell, 2018).

Power

We used designs with within-subjects components to enhance statistical power. Based on past research (Scholer & Miele, 2016), we targeted a sample size of $N = 100$. Given the lack of software for conducting sensitivity analyses for our primary analysis (Bayesian mixed-effects model), we report sensitivity analyses based on a statistically similar mixed analysis of variance (ANOVA) using G*Power (Faul et al., 2009). Sensitivity analyses revealed that our target *N* provided 80% power to detect an effect of $\eta_p^2 = .014$ and 90% power to detect an effect of $\eta_p^2 = .018$. For reference, the effect sizes in Scholer and Miele (2016)

Table 1. Bayesian Mixed-Effects Model—Performance Expectancies (Experiment 1).

Fixed effects	Estimate	*SE*	95% HDI
Intercept	0.13	0.08	[−0.02, 0.29]
Prevention recall activity (1 = *prevention*, 0 = *promotion*, *neutral*)	**−0.21**	**0.05**	**[−0.31, −0.12]**
Neutral recall activity (1 = *neutral*, 0 = *promotion*, *prevention*)	**−0.19**	**0.05**	**[−0.29, −0.09]**
Task (−0.5 = *vigilant*, 0.5 = *eager*)	**0.16**	**0.07**	**[0.02, 0.30]**
Task × Prevention recall activity	**−0.51**	**0.10**	**[−0.70, −0.31]**
Task × Neutral recall activity	**−0.22**	**0.10**	**[−0.42, −0.03]**

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

ranged from $\eta_p^2 = .02$ to $\eta_p^2 = .19$. No data were analyzed until all data were collected for a given experiment.

Exclusions

We used similar exclusion criteria as in recent metamotivation research (Nguyen et al., 2020). We excluded participants who reported not paying attention (i.e., reported being "very" or "extremely" distracted, or taking the study "not at all" or "a little" seriously) and those who were not fluent in the language of the study materials. To address MTurk data quality concerns (Moss & Litman, 2018), we limited analyses for MTurk studies to responses with nonrepeating location data within the United States. We know of no comparable data quality concerns reported using Yahoo! Japan.

Experiment 1 (Japan): Preparatory Strategies and Task-Integral Strategies

Experiment 1 examined whether Japanese participants recognize how to create task-motivation fit through preparatory strategies and task-integral strategies, using methods from Scholer and Miele (2016). Experiment 1 also examined whether Japanese participants exhibit a prevention bias. In doing so, we examine how culture may shape metamotivational beliefs.

Method

Participants. We recruited 105 workers from Yahoo! Japan Crowdsourcing ($M_{age} = 45.60$, $SD_{age} = 10.21$; 37 women, 67 men, and one unidentified) who were paid 60 T-points (around 60 yen) to spend on Yahoo! Japan products and services. After exclusions, we had a final $N = 97$.

Materials. All materials for experiments in Japan were professionally translated from English to Japanese. A native Japanese speaker on our team reviewed the materials to ensure that the translations were accurate and culturally appropriate. We presented participants with two knowledge assessments from Scholer and Miele (2016): a preparatory strategy assessment and a task-integral strategy assessment (see Online Appendix A). The preparatory strategy assessment included four tasks (two eager, two vigilant) and 12 preparatory recall activities (four promotion, four prevention, and four neutral), for a total of 48 task-recall activity pairs randomly presented to participants. For example, one task-recall activity pair presented a vigilant task (e.g., "Your goal is to be as accurate as possible by making sure to avoid lurking errors and pitfalls") with a prevention-inducing recall activity (e.g., "Please write about a time in the past when being careful enough avoided getting you into trouble."). For each pair, participants rated how successful they expected to be on the task, given the recall activity (1 = *not at all successful*, 7 = *extremely successful*).

The task-integral strategy assessment included two tasks (one eager, one vigilant) and two task-integral incentive structures (one promotion, one prevention). Participants imagined that task performance determined their number of lottery entries for a prize of 2,500 yen (roughly $22–24 USD around the time of the study). For each task, participants chose one of two incentive structures to motivate themselves to perform well: the "Yours to Gain!" incentive structure (begin with 0 points and gain points for correct responses, up to 25 points) and the "Yours to Lose!" incentive structure (begin with 25 points and lose points for incorrect responses, down to 0 points).[3] We randomized the presentation order of the tasks and incentive structures. After completing unrelated measures (see SOM), participants filled out attention checks and demographic information, and were then debriefed and compensated.

Results

Preparatory strategy assessment. To examine participants' knowledge of how to create task-motivation fit through preparatory strategies, we conducted a Bayesian mixed-effects model (see Table 1). To test for a promotion bias, we dummy-coded the recall activities (reference group = promotion recall activity). We regressed performance expectancy ratings on prevention recall activity (1 = *prevention*, 0 = *promotion* or *neutral*), neutral recall activity (1 = *neutral*, 0 = *promotion* or *prevention*), task (−0.5 = *vigilant*, 0.5 = *eager*), the interaction between task and prevention recall activity, and the interaction between task and neutral recall

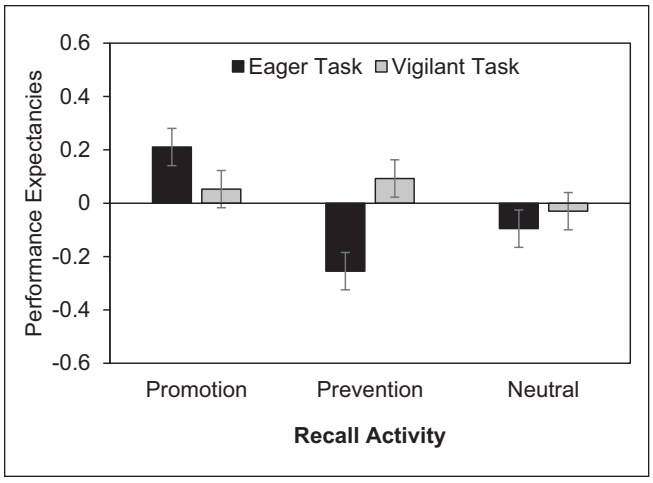

Figure 1. Standardized performance expectancies by recall activity and task (Experiment 1).
Note. Error bars reflect 95% HDIs. HDI = highest density interval.

activity. We modeled participant and task-recall activity pairs as random intercepts. For all experiments, we reported the Bayesian parameter estimates and the 95% highest density interval (HDI). The 95% HDI indicates the 95% most probable values of a parameter, given the observed data (Kruschke & Liddell, 2018). An effect is credible if its 95% HDI does not include 0.

Task-motivation fit. Replicating Scholer and Miele (2016), there was a credible effect of task, $\beta_{est} = 0.16$, $SE = .07$, 95% HDI = [0.02, 0.30], such that following promotion recall activities (the reference group), participants expected to perform better on eager versus vigilant tasks (see Figure 1). Results revealed an interaction between task and prevention recall activity, $\beta_{est} = -0.51$, $SE = .10$, 95% HDI = [−0.70, −0.31], and an interaction between task and neutral recall activity, $\beta_{est} = -0.22$, $SE = .10$, 95% HDI = [−0.42, −0.03], such that the effect of task was credibly different following promotion recall activities compared with that of both prevention and neutral recall activities. Replicating Scholer and Miele (2016), follow-up analyses revealed that participants expected to perform better on vigilant versus eager tasks following prevention recall activities, $\beta_{est} = -0.34$, $SE = .07$, 95% HDI = [−0.48, −0.21]. Following neutral recall activities, however, participants did not expect to perform better on either task, $\beta_{est} = -.07$, $SE = .07$, 95% HDI = [−0.21, 0.07]. These effects indicate that Japanese participants recognize how to create task-motivation fit through preparatory strategies.

Overgeneralization. To test for an overgeneralization effect, we first examined whether there was an effect of recall activity. Results revealed two credible negative effects of prevention recall activity, $\beta_{est} = -0.21$, $SE = .05$, 95% HDI = [−0.31, −0.12], and neutral recall activity, $\beta_{est} = -0.19$, $SE = .05$, 95% HDI = [−0.29, −0.09]. Participants had lower performance expectancies (across tasks) for the prevention and neutral recall activities compared with promotion recall activities. We note that it is possible to observe an effect of promotion focus but also find that participants believe that a prevention focus should enhance performance on vigilant tasks more so than a promotion focus (i.e., evidence against overgeneralization). Thus, we examined participants' ratings within vigilant tasks and found that participants did not have credibly different performance expectancies for prevention versus promotion recall activities, $\beta_{est} = 0.04$, $SE = .07$, 95% HDI = [−0.10, 0.18]. Together, these results reflect a promotion bias among Japanese participants, similar to findings among North American participants (Scholer & Miele, 2016).

Task-integral strategy assessment. To examine participants' knowledge of how to create task-motivation fit through task-integral strategies, we conducted a Bayesian logistic mixed-effects model regressing choice (0 = *yours to lose*, 1 = *yours to gain*) on task (−0.5 = *vigilant*, 0.5 = *eager*). We modeled participant as a random intercept. Results revealed a credible effect of the intercept, $\beta_{est} = 0.80$, $SE = .03$, 95% HDI = [0.73, 0.86], such that participants had a .69 probability of choosing the Yours to Gain over the Yours to Lose incentive structure. In contrast to the preparatory strategy assessment, results did not reveal a credible effect of task, $\beta_{est} = 0.04$, $SE = .05$, 95% HDI = [−0.06, 0.15], indicating that participants' preference for the Yours to Gain incentive structure did not differ as a function of task. Consistent with the choice results from Scholer and Miele (2016), results revealed that Japanese participants exhibited a promotion bias.

Discussion

Experiment 1 provided preliminary evidence that people in Japan may have similar knowledge about how to create regulatory focus task-motivation fit to people in North America (Scholer & Miele, 2016). In the preparatory strategy assessment, Japanese participants recognized that they would perform better on eager (vs. vigilant) tasks following promotion (vs. prevention) recall activities. Compared with the findings from North Americans (Scholer & Miele, 2016), the effect size in this work with a Japanese sample was smaller. Importantly though, the bias was in the same direction, suggesting that this effect is not entirely shaped by culture. This conclusion is bolstered by the results from the task-integral strategy assessment: Japanese participants overwhelmingly chose the promotion incentive structure over the prevention incentive structure across tasks (with an effect size that was comparable with North American participants with the same assessment; Scholer & Miele, 2016). Collectively, these findings largely suggest cross-cultural consistency in North American and Japanese participants' knowledge of how to create task-motivation fit as well as in their promotion bias.

One may wonder why we observed a promotion bias among Easterners, given cultural differences in regulatory focus. Regardless of culture, people may prefer experiencing positive, high arousal states (Tamir & Ford, 2012)—a state that perhaps coincides with laypeople's views about motivation. The promotion bias may also arise in situations where task or strategy affordances are conveyed relatively subtly (Gibson, 1977; Semin et al., 2005), as in these materials. Another possibility is that we assessed knowledge in a relatively Westernized context. That is, the assessment described relatively independent materials that involved only the participant—a factor that may explain the relatively smaller promotion bias in the preparatory strategy assessment. Cross-cultural differences might emerge if we contrast independent versus interdependent contexts. Experiments 2 and 3 examined this possibility by manipulating whether participants were presented with independent or interdependent strategies with which to create task-motivation fit.

Experiment 2 (United States and Japan): Independent Versus Interdependent Preparatory Strategies

To examine whether cross-cultural differences in metamotivational knowledge emerge when contrasting independent versus interdependent contexts, Experiment 2 manipulated whether participants were presented with independent versus interdependent preparatory strategies. To have parallel content across contexts, Experiment 2 used different strategies than in Experiment 1. For example, whereas independent preparatory strategies involved thinking about oneself (e.g., "Think about the hopes and aspirations that you had for yourself growing up"), interdependent preparatory strategies involved thinking about others in relation to oneself (e.g., "Think about the hopes and aspirations that your parents or caregivers had for you growing up"). We speculated that Easterners, relative to Westerners, might be more likely to recognize how to create task-motivation fit with interdependent versus independent preparatory strategies. Experiment 2 also used task descriptions that were more specific and evocative (e.g., managing dangerous materials at a factory) than the ones used in Experiment 1, which allowed us to begin exploring whether the clarity of affordances affects participants' beliefs about task-motivation fit.

Method

Participants. We recruited participants from similar online crowdsourcing platforms in the United States and Japan. We recruited 249 American MTurkers (M_{age} = 38.35, SD_{age} = 11.28; 132 women, 117 men), who were compensated $1.00 USD, and 237 Yahoo! Japan workers (M_{age} = 44.22; SD_{age} = 8.27; 80 women, 157 men[4]), who were compensated 100 T-points (equivalent to 100 yen) to spend on Yahoo! Japan products and services. After exclusions (32 American and 10 Japanese participants), Experiment 2 had a final N = 444.

Modified preparatory strategy assessment. We modified the preparatory strategy assessment from Experiment 1 in four ways (see Online Appendix B). First, we manipulated whether participants saw independent preparatory strategies that involved themselves (e.g., "Think about the hopes and aspirations you had for yourself growing up") versus interdependent preparatory strategies that involved others in relation to themselves (e.g., "Think about the hopes and aspirations that your parents or caregivers had for you growing up"). The independent context was a conceptual replication of Experiment 1, whereas the interdependent context allowed us to explore the possibility of cross-cultural differences on the basis of interdependence. Second, we used a more specific and evocative set of tasks (e.g., managing dangerous materials at a factory, developing a completely novel ad campaign). Third, to focus on the key contrasts between promotion versus prevention strategies, we did not include neutral strategies. Finally, instead of assessing performance expectations, we asked participants to rate how useful the recall activity was for the goal of performing well on the task (1 = *extremely unhelpful*, 7 = *extremely helpful*); these ratings were modeled after more recent metamotivational knowledge assessments (Nguyen et al., 2019). As a result of these changes, participants were presented with a total of 24 ratings involving four tasks (two eager, two vigilant) and six recall activities (three promotion, three prevention).

Final measures. Subjective experiences with the recall activities may impact participants' usefulness ratings. To address this concern, we assessed the frequency with which participants would engage in each recall activity (1 = *never use*, 7 = *always use*) and how comfortable they would feel if they engaged in each recall activity (1 = *extremely uncomfortable*, 7 = *extremely comfortable*). We also explored individual differences in interdependence. Participants filled out the relational-interdependent self-construal scale (RISC; Cross et al., 2000; for example, "My close relationships are an important reflection of who I am"; 1 = *strongly disagree*, 7 = *strongly agree*). As these measures did not change the interpretation of our primary findings, we reported those analyses in the SOM. Finally, participants reported their demographics, filled out attention checks, and were debriefed and compensated.

Results

Model comparison. To test whether culture played an explanatory role, we conducted and compared two Bayesian mixed-effects models: one with culture and one without. In the model with culture, we regressed usefulness ratings on

Table 2. Bayesian Mixed-Effects Model—Usefulness (Experiment 2).

Fixed effects	Estimate	*SE*	95% HDI
Intercept	0.00	0.08	[−0.15, 0.15]
Task (−0.5 = *vigilant*, 0.5 = *eager*)	0.11	0.14	[−0.14, 0.40]
Recall Activity (−0.5 = *prevention*, 0.5 = *promotion*)	−0.18	0.14	[−0.46, 0.10]
Context (−0.5 = *independent*, 0.5 = *interdependent*)	−0.04	0.05	[−0.14, 0.06]
Task × Recall activity	**0.99**	**0.28**	**[0.43, 1.52]**
Context × Task	**−0.20**	**0.03**	**[−0.25, −0.14]**
Context × Recall activity	**0.13**	**0.03**	**[0.07, 0.18]**
Context × Task × Recall activity	**−0.59**	**0.06**	**[−0.70, −0.48]**

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

culture (−0.5 = *United States*, 0.5 = *Japan*), context (−0.5 = *independent*, 0.5 = *interdependent*), task (−0.5 = *vigilant*, 0.5 = *eager*), recall activity (−0.5 = *prevention*, 0.5 = *promotion*), and all interactions among culture, context, task, and recall activity. We modeled participant and task-recall activity pair as random intercepts. The model without culture omitted culture and its interactions. We compared models with versus without culture using Bayes factor. The Bayes factor is a ratio of the likelihood of one hypothesis compared with another competing hypothesis, which facilitates hypothesis testing and model selection (for context: $1 < BF < 3$ = anecdotal evidence, $3 < BF < 10$ = moderate evidence, $10 < BF < 30$ = strong evidence, $30 < BF < 100$ = very strong evidence, and $BF > 100$ = extreme evidence; Jeffreys, 1961). Model comparison revealed very strong evidence that the data were more in line with the model without culture, $BF_{10} = 43.82$. We thus focused on this model (see Table 2).

Task-motivation fit. As expected, results revealed a credible interaction between task and recall activity, $\beta_{est} = 0.99$, *SE* = .28, 95% HDI = [0.43, 1.52]. We first examined this interaction as a function of recall activity. Among promotion recall activities, there was a credible effect of task, $\beta_{est} = 0.60$, *SE* = .20, 95% HDI = [0.22, 1.00], such that participants recognized that promotion recall activities would be more useful for eager versus vigilant tasks. Among prevention recall activities, however, there was no credible effect of task, $\beta_{est} = -0.38$, *SE* = .20, 95% HDI = [−0.76, 0.03], suggesting that the differential usefulness of prevention recall activities for different tasks was not as clear as with the promotion recall activities. Next, we examined the same interaction as a function of task. Within eager tasks, there was not a credible effect of recall activity, $\beta_{est} = 0.30$, *SE* = .20, 95% HDI = [−0.08, 0.70]. Within vigilant tasks, there was a credible effect of recall activity, $\beta_{est} = -0.68$, *SE* = .20, 95% HDI = [−1.07, −0.28], such that participants rated prevention recall activities as more useful than promotion recall activities.[5] Taken together, these results suggest that American and Japanese participants recognize how to create task-motivation fit.

Results also revealed that context moderated the interaction between task and recall activity, $\beta_{est} = -0.59$, *SE* = .06, 95% HDI = [−0.70, −0.48].[6] Follow-up analyses revealed that the interaction between task and recall activity was credible in both contexts, but nearly twice as strong in an independent context, $\beta_{est} = 1.25$, *SE* = .28, 95% HDI = [0.69, 1.80], compared with an interdependent context, $\beta_{est} = 0.71$, *SE* = .28, 95% HDI = [0.14, 1.26] (see Figure 2). Results also revealed credible evidence for two theoretically uninterpretable effects—the interaction between context and task, $\beta_{est} = -0.20$, *SE* = .03, 95% HDI = [−0.25, −0.14], and the interaction between context and recall activity, $\beta_{est} = 0.13$, *SE* = .03, 95% HDI = [0.07, 0.19].

Overgeneralization. In contrast to Experiment 1, there was no credible effect of recall activity, $\beta_{est} - 0.18$, *SE* = .14, 95% HDI = [−0.46, 0.11]. This suggests the absence of a promotion or prevention bias. Thus, it appears that this effect may be sensitive to the clarity of the affordances of the assessment materials.

Discussion

Experiment 2 provided further evidence of cross-cultural consistency in American and Japanese participants' knowledge of how to create regulatory focus task-motivation fit. That is, culture did not play an explanatory role in the pattern of this knowledge. Experiment 2 extended previous research by demonstrating that people recognize how to create task-motivation fit in interdependent contexts. Specifically, American and Japanese participants understood how to create task-motivation fit using both independent and interdependent preparatory strategies. Thus, people's repertoire of strategies with which to regulate motivation appears to extend beyond independent strategies. Of note, however, both American and Japanese participants' beliefs were more apparent in the independent versus interdependent context, suggesting that their knowledge spans both contexts but may be specialized for the former. Moreover, in Experiment 2, American and Japanese participants did not exhibit a promotion bias. Experiment 2 used more specific and evocative

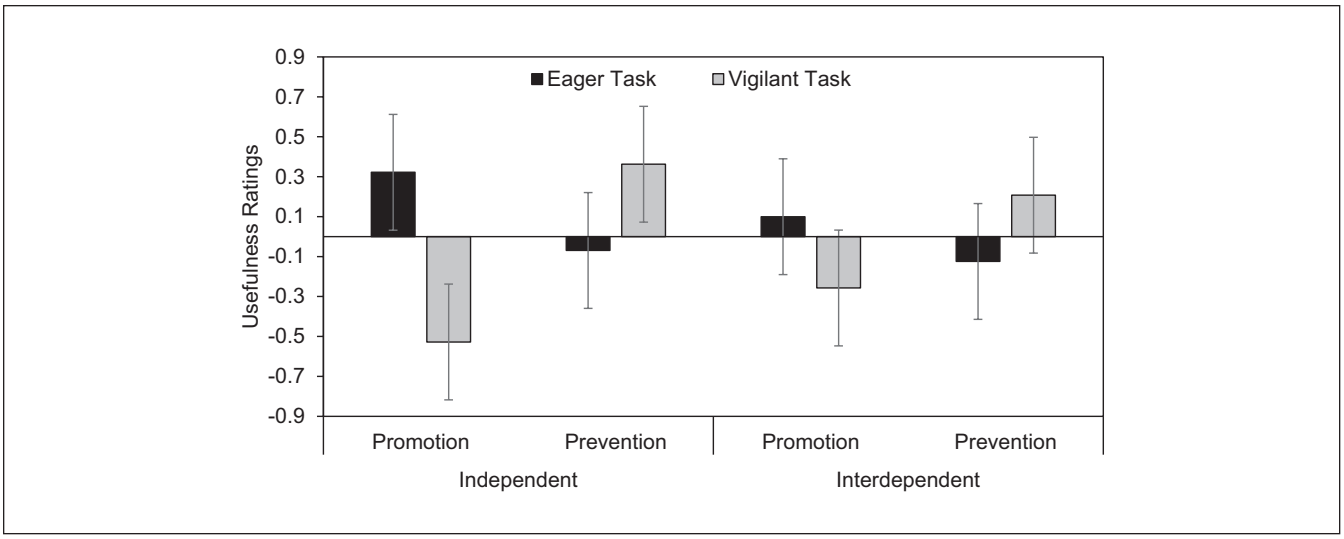

Figure 2. Usefulness ratings (standardized within culture) by context, recall activity, and task (Experiment 2).
Note. Error bars reflect 95% HDIs. HDI = highest density interval.

task descriptions as well as different strategies, both of which may have clarified the task and strategy affordances and helped people—across cultures—recognize the benefits of both promotion and prevention focus (Gibson, 1977). This suggests that this effect appears to emerge as a function of assessment materials, not culture.

One unanswered question from Experiment 2 is why we observed such similar patterns of knowledge across American and Japanese samples in independent versus interdependent contexts. Given established cultural differences (Markus & Kitayama, 1991), one might have anticipated that Japanese versus American participants' beliefs about how to create task-motivation fit would be more apparent in an interdependent versus independent context. Speculatively, our operationalization of independence versus interdependence may have been relatively Westernized. That is, the independent and interdependent preparatory strategies ultimately served one's own task outcomes—a motivational context that may highlight the benefits of independent over interdependent strategies. In Experiment 3, we presented participants with task-integral strategies focused on the social implications of their decisions (i.e., their decisions impacted either themselves vs. others), thereby allowing us to examine whether cross-cultural differences emerge in this context.

Experiment 3 (United States and Japan): Independent Versus Interdependent Task-Integral Strategies

Experiment 3 used task-integral strategies similar to those in Experiment 1. Participants considered two incentive structures—one about gains versus one about losses. Critically, to manipulate independence versus interdependence, we asked participants to imagine that their task performance determined their own monetary rewards versus others' monetary rewards, respectively. In addition to measuring participants' binary choice between promotion-focused versus prevention-focused incentive structures, we also assessed their perceptions of the usefulness of these incentive structures as a more sensitive continuous measure. We speculated that, by manipulating the independence versus interdependence of the task outcomes, we might observe cross-cultural differences in knowledge of how to create task-motivation fit with interdependent strategies.

Method

Participants. We recruited 261 American MTurkers (M_{age} = 37.33, SD_{age} = 10.75; 122 women, 137 men, and two unidentified), who were compensated $0.60 USD, and 212 Yahoo! Japan workers (M_{age} = 43.98, SD_{age} = 10.10; 66 women, 145 men, and one unidentified), who were compensated 60 T-points (equivalent to 60 yen) to spend on Yahoo! Japan products and services. After exclusions (18 American and three Japanese participants), Experiment 3 had a final N = 452.

Modified task-integral strategy assessment. We manipulated whether participants believed their task performance would determine monetary rewards for themselves versus others. In the independent condition, performance would implicate only the self; in the interdependent condition, performance would implicate both the self and others (for a similar manipulation, see Lee et al., 2000; Study 3). We presented participants with the same four tasks used in Experiment 2 (see Online Appendix C for minor edits), two of which were

Table 3. Bayesian Mixed-Effects Model—Usefulness (Experiment 3).

Fixed effects	Estimate	*SE*	95% HDI
Intercept	0.00	0.03	[−0.06, 0.06]
Culture (−0.5 = *United States*, 0.5 = *Japan*)	0.00	0.05	[−0.09, 0.09]
Context (−0.5 = *independent*, 0.5 = *interdependent*)	**−0.10**	**0.05**	**[−0.19, −0.01]**
Task (−0.5 = *vigilant*, 0.5 = *eager*)	−0.07	0.05	[−0.17, 0.02]
Incentive structure (−0.5 = *lose*, 0.5 = *gain*)	**0.72**	**0.05**	**[0.63, 0.81]**
Culture × Context	0.07	0.09	[−0.11, 0.25]
Culture × Task	−0.05	0.05	[−0.16, 0.05]
Context × Task	0.01	0.06	[−0.10, 0.12]
Culture × Incentive structure	−0.11	0.05	[−0.21, 0.00]
Context × Incentive structure	**0.27**	**0.06**	**[0.17, 0.38]**
Task × Incentive structure	**0.45**	**0.10**	**[0.26, 0.64]**
Culture × Context × Task	−0.01	0.11	[−0.23, 0.20]
Culture × Context × Incentive structure	**−0.36**	**0.11**	**[−0.58, −0.15]**
Culture × Task × Incentive structure	**0.55**	**0.11**	**[0.34, 0.77]**
Context × Task × Incentive structure	−0.10	0.11	[−0.31, 0.12]
Culture × Context × Task × Incentive structure	0.27	0.21	[−0.15, 0.68]

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

used in the task-integral assessment in Experiment 1. For each task, participants chose which of two incentive structures ("Yours to Gain!" vs. "Yours to Lose!") would be most motivating for the task at hand. To emphasize the manipulation before participants made their choice, we reminded them that their performance would determine the amount of their own rewards versus others' rewards. After the choice, participants rated how useful each incentive structure would be for their goal of performing well on the task at hand (1 = *extremely unhelpful*, 7 = *extremely helpful*). We randomized the presentation order of the tasks and incentive structures. Finally, participants filled out the RISC scale, attention checks, demographic information, and were then debriefed and compensated.

Results

Model comparison. To test whether culture played an explanatory role, we conducted and compared two Bayesian mixed-effects models: one with culture and one without. In the model with culture, we regressed usefulness ratings[7] on culture (−0.5 = *United States*, 0.5 = *Japan*), context (−0.5 = *independent*, 0.5 = *interdependent*), task (−0.5 = *vigilant*, 0.5 = *eager*), incentive structure (−0.5 = *yours to lose*, 0.5 = *yours to gain*), and all interactions among culture, context, task, and incentive structure. We modeled participant and task-incentive structure pair as random intercepts. The model without culture omitted culture and its interactions. We compared models with versus without culture, using 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, and $BF > 100$ = extreme evidence; Jeffreys, 1961). Model comparison revealed moderate evidence that data were more in line with the model with culture, $BF_{01} = 5.84$. We thus focused on this model (see Table 3).

Task-motivation fit. As expected, results revealed a credible interaction between task and incentive structure, $\beta_{est} = 0.45$, $SE = .10$, 95% HDI = [0.26, 0.64]. We examined this interaction as a function of incentive structure. There was a credible effect of task for the Yours to Gain incentive structure, $\beta_{est} = 0.15$, $SE = .07$, 95% HDI = [0.02, 0.27], such that participants recognized that it would be more useful for eager versus vigilant tasks. There was also a credible effect of task for the Yours to Lose incentive structure, $\beta_{est} = -0.30$, $SE = .07$, 95% HDI = [−0.43, −0.16], such that participants recognized that it would be more useful for vigilant versus eager tasks.

Results also revealed that culture moderated the interaction between task and incentive structure, $\beta_{est} = 0.55$, $SE = .11$, 95% HDI = [0.34, 0.77], such that the interaction between task and incentive structure was only credible among the Japanese sample, $\beta_{est} = 0.72$, $SE = .11$, 95% HDI = [0.50, 0.94], and not the American sample, $\beta_{est} = 0.18$, $SE = .11$, 95% HDI = [−0.04, 0.39]. The latter result is inconsistent with previous findings among North Americans, using a paradigm similar to the independent condition (Scholer & Miele, 2016).[8] To examine whether we replicate previous findings (Scholer & Miele, 2016), we conducted a more focused analysis and examined the interaction between task and incentive structure within each type of context among American and Japanese participants (see Figure 3).

Among Americans, results revealed a credible interaction between task and incentive structure in the independent context, $\beta_{est} = 0.29$, $SE = .13$, 95% HDI = [0.04, 0.54], but not the interdependent context, $\beta_{est} = 0.07$, $SE = .13$, 95% HDI = [−0.19, 0.32]—although the three-way interaction between task, incentive structure, and context

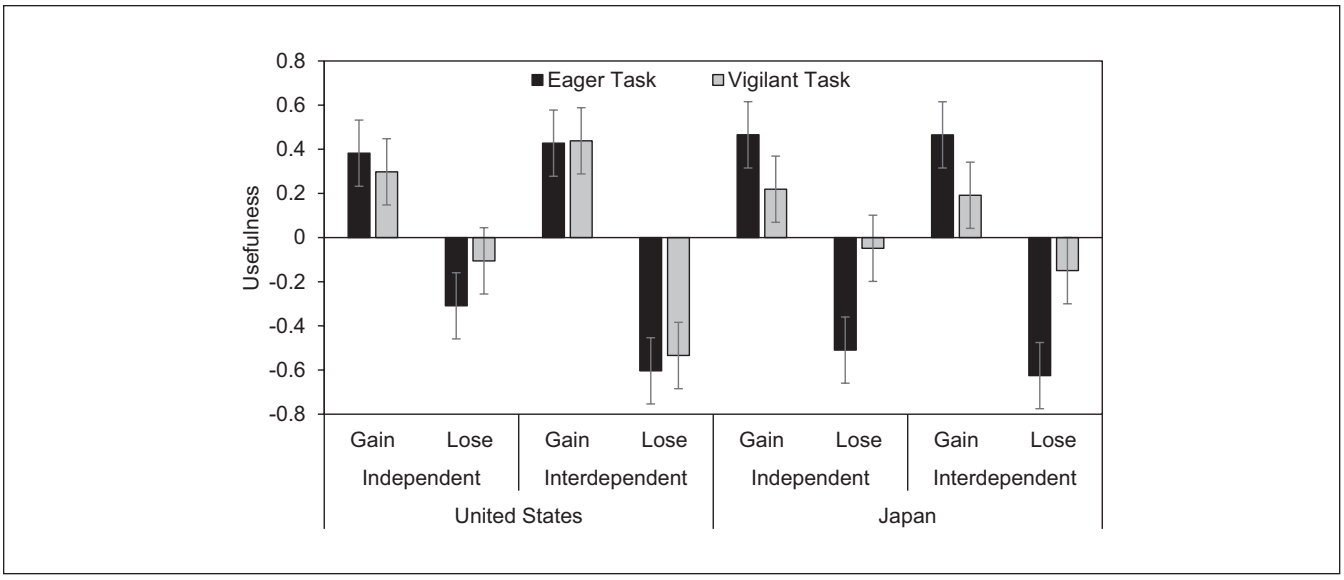

Figure 3. Usefulness ratings (standardized within culture) by incentive structure and task across independent and interdependent outcomes among American and Japanese participants (Experiment 3).
Note. Error bars reflect 95% HDIs. HDI = highest density interval.

was not credible, $\beta_{est} = -0.23$, SE = .15, 95% HDI = [−0.52, 0.06]. Among Japanese participants, by contrast, results revealed a credible interaction between task and incentive structure across both the independent context, $\beta_{est} = 0.70$, SE = .14, 95% HDI = [0.43, 0.96], and interdependent context, $\beta_{est} = 0.73$, SE = .14, 95% HDI = [0.47, 0.99]; the three-way interaction between task, incentive structure, and context was not credible, $\beta_{est} = 0.04$, SE = .16, 95% HDI = [−0.26, 0.35]. Despite the lack of a credible four-way interaction between culture, context, task, and incentive structure, these findings appear to suggest that Japanese participants recognize how to create task-motivation fit when the outcomes of their motivation regulation strategies pertain to themselves or others, whereas American participants may only recognize how to do so when these outcomes concern themselves.

Overgeneralization. Results revealed a credible effect of incentive structure, $\beta_{est} = 0.72$, SE = .05, 95% HDI = [0.63, 0.81], such that participants gave higher usefulness ratings for the Yours to Gain versus Yours to Lose incentive structure. This promotion bias was present among both American participants, $\beta_{est} = 0.77$, SE = .05, 95% HDI = [0.67, 0.88], and Japanese participants, $\beta_{est} = 0.67$, SE = .06, 95% HDI = [0.56, 0.78].[9] Results also revealed two theoretically uninterpretable findings. First, context moderated the effect of incentive structure, $\beta_{est} = 0.27$, SE = .06, 95% HDI = [0.17, 0.38], such that the promotion bias was stronger in the interdependent context, $\beta_{est} = 0.86$, SE = .05, 95% HDI = [0.75, 0.96], than in the independent context, $\beta_{est} = 0.58$, SE = .05, 95% HDI = [0.47, 0.69]. Second, the interaction between context and incentive structure was further moderated by culture, $\beta_{est} = -0.36$, SE = .11, 95% HDI = [−0.58, −0.15], such that it was credible among American participants, $\beta_{est} = 0.45$, SE = .07, 95% HDI = [0.30, 0.60], but not Japanese participants, $\beta_{est} = 0.09$, SE = .08, 95% HDI = [−0.06, 0.25].

Discussion

Experiment 3 demonstrated that participants across cultures recognized how to create regulatory focus task-motivation fit in an independent context—when performance determined their own rewards. Specifically, in this context, participants rated the "Yours to Gain!" incentive structure as more useful than the "Yours to Lose!" incentive structure for eager versus vigilant tasks. Critically, however, cultural differences emerged in an interdependent context—when performance determined others' rewards. Under this condition, Japanese participants, but not American participants, appeared to recognize how to create task-motivation fit. These findings suggest that there may be cross-cultural differences in knowledge of how to create task-motivation fit when it comes to outcomes that differ in independence versus interdependence.

Recall that materials in Experiment 2 eliminated promotion bias across cultures, whereas materials in Experiment 3 produced a promotion bias across cultures. It may be that the tendency to prefer positive states is even more apparent with the task-integral strategies (e.g., "Yours to Gain!" vs. "Yours to Lose!") than with preparatory strategies (e.g., thinking about hopes vs. duties). That is, the "Yours to Lose!" incentive structure may induce much higher anxiety and unpleasantness relative to the "Yours to Gain!" incentive structure or other strategies, potentially reducing the

likelihood for people to view the "Yours to Lose!" incentive structure as a generally useful strategy.

General Discussion

Three experiments demonstrated that both Japanese and American participants understand that promotion versus prevention focus can enhance performance on eager versus vigilant tasks, respectively. These experiments also revealed that both cultures appreciated several strategies for inducing differences in regulatory focus—for example, preparatory strategies (Experiments 1 and 2) and task-integral strategies (Experiment 3). Taken together, this research suggests considerable cross-cultural similarity in Easterners' and Westerners' knowledge of how to create regulatory focus task-motivation fit.

By assessing knowledge in independent versus interdependent contexts, Experiments 2 and 3 revealed notable cross-cultural similarities and differences. Experiment 2 revealed cross-cultural similarities when the preparatory strategies focused on either oneself (independent) or others (interdependent). Across cultures, participants understood how to create task-motivation fit, and this recognition appeared to be stronger for independent (vs. interdependent) preparatory strategies. By contrast, Experiment 3 suggested that there may be cross-cultural differences when the task-integral strategies had implications for one's own outcomes (independent) versus others' outcomes (interdependent). Whereas American and Japanese participants appeared to recognize how to create task-motivation fit when performance determined their own rewards, only Japanese participants appeared to demonstrate this recognition when other people's rewards were at stake. These findings may suggest that, whereas Japanese people appreciate how to regulate motivation under various conditions, Americans' understanding of motivation regulation may be more specialized.

This work also clarified the promotion bias observed with North American participants in previous research (Scholer & Miele, 2016). Experiment 1 revealed a promotion bias among Japanese participants—suggesting that this effect may not be primarily shaped by culture, but rather a desire to experience positive, high arousal states (Tamir & Ford, 2012) or the clarity in task and strategy affordances in the assessment materials (Gibson, 1977). Experiment 2 did not reveal a promotion bias in either culture, perhaps due to the use of more evocative and specific assessment materials that may have clarified the affordances of both strategies and tasks. By contrast, Experiment 3 revealed a promotion bias across cultures, speculatively due to the potential anxiety and unpleasantness evoked by the "Yours to Lose!" incentive structure compared with other strategies. Overall, results suggest that the promotion bias may not be shaped by culture. Rather, motivational affordances and preferences for positivity may determine whether some motivations shape participants' judgments and decisions.

In sum, Experiments 1 to 3 generally revealed cross-cultural similarities in knowledge of how to create regulatory focus task-motivation fit. On the surface, these findings may appear to conflict with other cross-cultural research on regulatory focus (Higgins, 2008; Lockwood et al., 2005; Uskul et al., 2009). We suggest, however, that there are at least two reasons why it may be plausible to observe cross-cultural similarities in metamotivational knowledge, despite cultural differences in regulatory focus.

First, it is important to distinguish motivational preferences (past cross-cultural work) from motivational knowledge (this work). As an analogy, although an avid baseball fan may know the stats and information about various teams, this knowledge is separate from their devotion to a particular team. This reasoning is consistent with an institutional approach to understanding cross-cultural similarities and differences (Yamagishi et al., 2008). This approach suggests that people's behavior may not necessarily reflect personal preferences, but rather strategic responses that fit situational expectations and incentives. Cultures may encourage the use of certain "default" strategies in ambiguous situations, leading to the emergence of cross-cultural differences. When the demands of a situation are clearly defined, however, people across cultures are likely to use the same strategy, leading to cross-cultural similarities (see Yamagishi et al., 2008). From this perspective, situational ambiguity (or lack thereof)[10] may therefore help explain when to expect cultural differences or similarities in perceived strategy effectiveness.

Second, we caution against assuming that knowledge necessarily leads to superior outcomes in a given cultural context. For example, a culture might value performance on one task (e.g., proofreading) over another (e.g., brainstorming), leading those embedded (vs. not embedded) in that cultural context to invest more effort. In these cases, cultural differences in how tasks are valued as a function of regulatory focus may underlie performance differences across cultures, despite cross-cultural similarities in metamotivational knowledge. Rather than contradicting past work on culture and regulatory focus, we suggest that this work highlights paths for future research that address when and how cultural differences shape motivational and metamotivational processes.

Limitations

This research has a few limitations. First, this work assessed knowledge using hypothetical scenarios. Future work examining knowledge in more consequential, non-hypothetical contexts with behavioral measures may reveal cultural differences in how such knowledge affects important outcomes. Second, the current findings speak to cultural differences in Japan versus the United States. Although these countries can reflect general cultural differences between the East versus West, future research is needed before drawing strong conclusions about Easterners' versus

Westerners' metamotivational knowledge. Examining what people in other countries appreciate about creating regulatory focus task-motivation fit may provide a deeper understanding of cross-cultural metamotivational processes.

Future Directions

Future research should examine the extent to which culture shapes the development of metamotivational knowledge. Although this work largely revealed cultural similarities among adults, when and how people acquire this knowledge might differ across cultures. If parents teach children this knowledge, cultural differences in regulatory focus may guide whether children learn about promotion versus prevention focus first. Prevention-focused parents in Eastern countries might first emphasize the benefits of prevention focus, whereas promotion-focused parents in Western countries may first teach the benefits of promotion focus. Thus, there may be cross-cultural differences in children's understanding of how to create task-motivation fit around the age that they are able to learn about the culturally dominant motivational orientation. Understanding the timing and means by which Easterners versus Westerners develop metamotivational knowledge may provide insight for interventions aiming to cultivate this knowledge among those who struggle with self-regulation.

Future work should delve deeper into the methodological considerations of administering metamotivational knowledge assessments. This work identified some of the conditions that appear to moderate an overgeneralization effect (e.g., absence of clear affordances, pleasantness of regulatory strategies). Importantly though, these conditions did not appear to impact people's knowledge of task-motivation fit. Understanding additional conditions in which assessment materials may lead to a promotion or prevention bias is an important research question. For example, future work might examine whether individual differences in regulatory focus may inform whether participants exhibit a promotion or prevention bias. Careful investigation of this issue may sharpen the methodological tools to assess people's knowledge.

Beyond regulatory focus, future cross-cultural research should examine people's beliefs regarding other motivational states. For example, recent research demonstrated that people in the United States and Japan recognize how to create construal-level task-motivation fit (Nguyen et al., 2020). Recent research also found that American and Japanese participants similarly did not recognize that extrinsic incentives can undermine their intrinsic motivation for a task (Murayama et al., 2016), thereby providing insight into people's misbeliefs. Future research should cross-culturally examine people's beliefs about additional motivational constructs, such as positive and negative feedback (Heine et al., 2001), the malleability of personality (Norenzayan et al., 2002), and self-affirmation (Hoshino-Browne et al., 2005).

Finally, future research should investigate whether there are cross-cultural differences in how people implement their knowledge to promote outcomes. In addition to task and strategy knowledge, self-knowledge—having accurate insight into one's motivational states and proclivities—may be another necessary condition for creating task-motivation fit (Scholer & Miele, 2016). One's current motivational state can indicate whether one needs to switch to a different motivational state to fit the current task (Miele & Scholer, 2018). It is possible that a heightened sensitivity to situational cues may render Easterners more sensitive to their current motivational state (Masuda & Kitayama, 2004), potentially making them more effective at creating task-motivation fit in vivo.

Concluding Thoughts

This article advances cross-cultural metamotivation research by exploring Easterners' and Westerners' beliefs about the benefits of promotion and prevention motivations. This work also suggests that there are many second-generation research questions to pursue beyond examining the accuracy or inaccuracy of people's metamotivational beliefs. Overall, this research demonstrates the generativity of the metamotivational approach (Miele et al., 2020; Scholer et al., 2018). We look forward to future cross-cultural investigations of metamotivation that deepen our understanding of the motivational processes that underlie effective goal pursuit.

Authors' Note

Data sharing is essential for transparency, replicability, and future meta-analysis. Local institutional review board (IRB) policies have restricted the public posting of the data reported herein, thus requiring an exception to Transparency and Openness Promotion (TOP) Level-2 Guidelines. All deidentified data, however, are available upon request and by IRB approval. All materials, syntax, and data set codebooks are available on Open Science Framework (OSF; https://osf.io/9nskf/).

Declaration of Conflicting Interests

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Supplemental Material

Supplemental material is available online with this article.

Notes

1. As described in Scholer and Miele (2016), task-motivation fit can be applied to other theories beyond regulatory focus theory. We use the term "regulatory focus task-motivation fit" to distinguish it from other forms of task-motivation fit.
2. For all analyses, we achieved sufficient model convergence (all R-hat = 1.00) and model fit (all Pareto $k < 0.5$). We report information on model convergence (trace plots) and model fit (p_loo) in the supplemental online materials (SOM).
3. Different from Scholer and Miele (2016), the task manipulation was within-participants, such that participants responded to both tasks, rather than either the eager or vigilant task. Moreover, we did not assess participants' performance expectations. We did, however, assess these performance expectations in Experiment 3.
4. We note that gender proportions differed across cultures in Experiments 2 and 3. Controlling for gender, however, did not change the primary findings. Thus, we reported simpler models (without gender) in the main text.
5. The simple effects were even more consistent with hypotheses when applying a frequentist approach (see SOM).
6. In the model with culture, the three-way interaction between context, task, and recall activity was moderated by culture, *Bayesian*: $\beta_{est} = -0.29$, $SE = .11$, 95% HDI = [−0.51, −0.07]; *frequentist*: $\gamma = -.29$, $SE = .11$, $t(10172.06) = -2.57$, $p = .01$. Both cultures, however, revealed the same pattern of results (see Figure 2). As reported in the SOM, follow-up analyses revealed that the pattern was stronger among Japanese versus American participants.
7. Results from models with choice as a dependent variable were consistent with results from models with usefulness ratings as a dependent variable. For concision, we report models with choice as a dependent variable in the SOM.
8. Frequentist analyses (see SOM) revealed that the interaction between task and incentive structure was significant among both Japanese participants, $\gamma = 0.74$, $SE = .08$, $t(3151.06) = 7.78$, $p < .001$, and American participants, $\gamma = 0.18$, $SE = .08$, $t(3150.85) = 2.35$, $p < .001$.
9. There were differences across analysis approaches regarding the interaction between culture and incentive structure. Bayesian analyses revealed that this interaction was not credible, $\beta_{est} = -.11$, $SE = .05$, 95% HDI = [−0.21, 0.00]. Frequentist analyses using standardized data revealed a marginally significant interaction, $\gamma = -.11$, $SE = .06$, $t(3150.96) = 1.92$, $p = .055$. By contrast, frequentist analyses using unstandardized data revealed a significant interaction, $\gamma = -.32$, $SE = .08$, $t(3151.00) = 3.84$, $p < .001$, such that the incentive structure effect was stronger among American versus Japanese participants (see the SOM for details).
10. Ambiguity should not be conflated with vagueness. We suggested that the materials in Study 1 were relatively vague with respect to motivational affordances. However, this does not mean they were ambiguous—that is, presenting two or more potentially conflicting interpretations that might be influenced by culture. Future research should examine the role of task ambiguity in assessing metamotivational knowledge.

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