

## Research article

# Viewing time through the lens of the self: The fit effect of self-construal and temporal distance on task perception<sup>†</sup>

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### Abstract

*This paper describes how different self-construals influence people's perception of temporal distance and in turn their task evaluation. We hypothesize that people with a more accessible interdependent (vs. independent) self-construal perceive future events as temporally more proximal, and that people's reaction toward a task is intensified when the temporal distance to the task matches (vs. mismatches) their self-construal. Across four studies, we showed that individuals with a more accessible interdependent self-construal (Study 1) and East Asians (Study 2) perceived future events as more proximal than those with a more accessible independent self-construal and European Americans. Further, when considering a task at a temporal distance that fits their self-construal, individuals perceived a pleasant task as more motivating (Study 3) and an unpleasant task as less motivating (Study 4). Copyright © 2010 John Wiley & Sons, Ltd.*

*The future is something which everyone reaches at the rate of 60 minutes an hour, whatever he does, whoever he is.*

C. S. Lewis

## INTRODUCTION

The concept of time is often considered to be linear and objective. While events may differ on when they are scheduled, and people may differ on how they respond to impending deadlines, the temporal distance to, or the duration of, the event is thought to be invariant. However, our own experience tells us that the same event in the future may be perceived by different people to be temporally proximal or distant, and the way people perceive a future event—whether as temporally proximal or distant—has been shown to affect their task preferences (Trope & Liberman, 2000), their planning and choice of task (Liberman & Trope, 1998), the weights they place on different types of information (Eyal, Liberman, Trope, & Walther, 2004), and the goal-pursuit strategies they adopt (Förster, Friedman, & Liberman, 2004). However, despite the burgeoning interest in temporal perspective, research on the antecedents of a distal versus proximal temporal perspective and their implications is scanty (*cf.*, Liberman, Trope, McCrea, & Sherman, 2007).

The objective of the current research is to better understand how people may perceive a future event as distant or proximal, and the implications of their temporal distance perception for task evaluation. Our view is that the way people look at the self—whether as an autonomous, independent individual or as someone whose life is intertwined and interdependent with that of other people—influences how they perceive upcoming events as happening in the proximal or distant future. We further propose that the temporal distance to a future event interacts with people's self-construal to influence their task evaluation. We present the results of four studies in support of our propositions.

### The Influence of Self-Construal on Temporal Distance

Research examining cultural differences distinguishes between two broad categories of self-construal (Markus & Kitayama, 1991; Schweder & Bourne, 1984; Triandis, 1989). The focus is on whether the self is defined as autonomous and unique or as inextricably embedded within relationships and communities. The independent self-construal, or the view of oneself as comprising unique, distinguishing attributes and characteristics (e.g., “I am tall”), is more common in cultures that promote the values of independence and self-reliance (e.g., United Kingdom and United States). In contrast, the

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<sup>†</sup>This research was presented at the annual conferences of the International Association for Conflict Management in Pittsburgh, PA (June 2004) and the Academy of Management in Anaheim, CA (August 2008).

interdependent self-construal, or the view of oneself as defined by relationships with and duties to others (e.g., “I am the youngest in my family”), is more common in cultures that value fulfilling one’s obligations and responsibilities over personal wishes or desires (e.g., China and Korea; Markus & Kitayama, 1991; Triandis, 1989).

Markus and Kitayama (1991) originally conceptualized self-construals as culturally determined self-schemas. More recent research suggests that self-construal is a fairly malleable construct, and that the two self-schemas co-exist within the individual, regardless of their cultural origin (Gardner, Gabriel, & Lee, 1999; Hong, Morris, Chiu, & Benet-Martinez, 2000; Singelis, 1994; Trafimow, Triandis, & Goto, 1991). Because both independence and interdependence are valued to some degree in all societies, the difference in self-construal that exists between cultures, as well as between members of a given culture, is thought to reflect which of the two self-construals is more accessible in memory. That is, people differ not on whether they have an independent or interdependent self-construal but on how accessible one self-construal is *relative* to the other self-construal; and the self-construal that is less chronically accessible can be made temporarily more accessible through visual primes (Hong et al., 2000), referencing tasks (Lee, Aaker, & Gardner, 2000), or situational contexts (Briley, Morris, & Simonson, 2000). An accessible self-construal, whether chronically accessible or temporarily made salient, can guide the individual’s cognitive and motivational processes to influence their perceptions, attitudes, and behaviors (Aaker & Lee, 2001; Gardner et al., 1999; Iyengar & Lepper, 1999; Lee et al., 2000; Markus & Kitayama, 1991; Singelis, 1994).

Drawing on the regulatory focus and construal level literatures (Higgins, 1997; Liberman & Trope, 1998), we propose that a more accessible independent self-construal is associated with a distant temporal distance, whereas a more accessible interdependent self-construal is associated with a proximal temporal distance. According to regulatory focus theory (Higgins, 1997), promotion-focused individuals regulate their attention, attitudes, and behaviors to fulfill their hopes and aspirations, and strive toward growth and accomplishment. In contrast, prevention-focused individuals regulate their attention, attitudes, and behaviors to fulfill their duties and responsibilities, and strive toward safety and security. These regulatory goals differ from the hedonic goals of approaching pleasures and avoiding pains (Labroo & Lee, 2006; Molden, Lee, & Higgins, 2008). Specifically, it is not that promotion goals relate to approach and prevention goals relate to avoidance; rather, people’s regulatory goals of promotion and prevention provide different contexts under which different approach–avoidance systems operate (Higgins, 1997). That is, promotion-focused people approach gains and avoid nongains in the service of their growth needs, whereas prevention-focused people approach nonlosses and avoid losses to serve their security needs (Idson, Liberman, & Higgins, 2000; Lee & Aaker, 2004).

The independent goal of being positively distinct, with its emphasis on achievement and autonomy, is consistent with a promotion focus, whereas the interdependent goal of harmoniously fitting in with others, with its emphasis on adhering to social norms and fulfilling duties and responsibilities, is consistent with a prevention focus. Indeed, empirical

evidence that those with a more accessible independent self-construal, whether dispositionally inclined, culturally encouraged, or situationally induced, were more sensitive to gains and nongains, whereas those with a more accessible interdependent self-construal were more sensitive to losses and nonlosses lend credence to the notion that the two self-construals are associated with distinct regulatory focus (Aaker & Lee, 2001; Lee et al., 2000). More recent findings showing that independents evaluated enriched options (which have extremely positive and extremely negative features) more favorably than impoverished options (which have average-quality features) and the reverse for interdependents are also consistent with this view—Independents with their promotion goal place more weight on positive features and hence tend to prefer the enriched options whereas interdependents with their prevention goal pay more attention to negative attributes and hence tend to reject the enriched options (Zhang & Mittal, 2007). Our view is that it is in the service of their promotion or prevention goals that people with a more accessible independent or interdependent self-construal adopt different temporal perspectives when considering future events.

To individuals with a task to complete, time is a scarce resource that may facilitate or hinder the accomplishment of the task. For those with a more accessible independent self-construal, their regulatory goal which emphasizes growth and aspiration takes time to achieve. Hence they are likely to perceive future events as temporally distant (vs. proximal) from the present. Further, their sensitivity to gains and nongains prompts them to focus on positives (vs. negatives), which are more salient in the distant (vs. proximal) future (Eyal et al., 2004). Thus, we predict that independents are inclined to perceive future events at a more distant temporal distance. In contrast, for those with a more accessible interdependent self-construal, their regulatory goal which focuses on safety and responsibilities necessitates their keeping a close watch on their immediate environment and fulfilling their obligations in a timely manner. Further, their sensitivity to losses and nonlosses prompts them to focus on negatives (vs. positives), which are more salient in the proximal (vs. distant) future (Eyal et al., 2004). Thus, we hypothesize that interdependents are inclined to perceive future events as temporally proximal (vs. distant).

To the extent that people with distinct self-construals have different regulatory orientations (Aaker & Lee, 2001; Lee et al., 2000; Zhang & Mittal, 2007), recent regulatory focus research showing a relationship between regulatory focus and temporal distance provides support for our hypotheses. Pennington and Roese (2003) showed that participants had more promotion concerns when they thought about events in the distal future, but they had more prevention concerns when they thought about events in the more proximal future. Further, Freitas, Liberman, Salovey, and Higgins (2002) found that prevention-focused individuals initiated goal-directed actions (e.g., filing a fellowship application) sooner than promotion-focused individuals. These results are consistent with the notion that the more proximal temporal perspective of the prevention-focused participants made them feel they have less time, hence they started working sooner.

Evidence from construal level theory further supports our predictions. Construal level theory posits that concrete, contextualized, low-level construals are associated with a

proximal temporal distance, whereas abstract, decontextualized, high-level construals are associated with a distal temporal distance (Liberman & Trope, 1998; Trope & Liberman, 2000). Interdependents' close attention to the self in relationship with others requires construing the self and others in social contexts that are concrete and specific rather than abstract and general (Kanagawa, Cross, & Markus, 2001; Morris & Peng, 1994). Indeed, interdependents have been found to consider more contextualized information when explaining outcomes and show more context-dependent information processing than independents (Choi, Nisbett, & Norenzayan, 1998; Kühnen & Oyserman, 2002). Thus, it follows that individuals with distinct self-construals who construe information at different levels of abstractness also differ in terms of their perception of temporal distance when construing future events.

Similarly, the global-versus-local processing literature offers evidence in support of our view. A promotion focus has been found to relate to global, abstract processing, and high-level construals because one needs to go beyond the given information to achieve the growth need, whereas a prevention focus is related to local, concrete processing, and low-level construals because fulfilling the security need necessitates careful processing of local details (Förster & Higgins, 2005; Lee, Keller, & Sternthal, 2010). Global (vs. local) processing has been found to influence the perception of distal (vs. proximal) temporal distances (Liberman & Förster, 2009a, 2009b). Thus, independents should perceive future events as temporally further away than interdependents.

### Temporal Distance versus Temporal Consequences

The notion that an interdependent self-construal is associated with a proximal-future perspective seems to be at odds with the commonly held view that members of East Asian cultures who value interdependence and tradition are more long-term oriented than members of most European cultures (Ji, Nisbett, & Su, 2001; Triandis, 1989). In fact, Hofstede and Bond (1988) identify "a dynamic, future-oriented mentality" (p. 16) as the basis of a fifth dimension—long-term orientation—on which East Asian and European American cultures differ. Consistent with this view, Maddux and Yuki (2006) show that East Asians often perceive an event as having more far-reaching consequences than European Americans, presumably because East Asians are aware of a broader and more interrelated spectrum of events.

Our view is that time perspective in terms of when a future event is perceived to occur (i.e., temporal distance to the event) is distinct from how long the consequences of an event are perceived to last (i.e., temporal consequences of the event). Construal level theory posits that distance perception is egocentric because the self is the referent point, such that distances are anchored on "the directly experienced reality of me, here and now" (Liberman & Förster, 2009b, p. 1331). That is, temporal distance is conceptualized as the distance between a future event and the here and now (Liberman & Förster, 2009a), whereas long-term orientation is defined by Hofstede (2001, p. 359) as "the fostering of virtues oriented towards future rewards"—a concept that highlights the long-term consequences of a current course of actions. Thus, our view is

that it is the tendency of East Asians and interdependents to pay close attention to the interrelationships between people, objects, and situations that accounts for their contextualized, low-level construal and proximal temporal perspective. It is this very same proclivity to pay close attention to interrelationships that gives rise to East Asians and interdependents' long-term orientation and far-reaching perspective. In contrast, the tendency of European Americans and independents to perceive people, objects, and situations as being discrete rather than intertwined prompts them to think that the consequences of certain actions or events are relatively short-lived.

Thus, we predict that East Asians will perceive a future event to occur in a more proximal timeframe from the present than European Americans, as consistent with regulatory focus and construal level theories. However, we also predict that East Asians will perceive the event as having longer-term and more far-reaching consequences, as consistent with the commonly held view. We tested these predictions in Study 2.

### Fit Between Self-Construal and Temporal Distance

If people's perception of temporal distance is shaped by their more accessible self-construal that is associated with a distinct regulatory focus, then we would expect them to become more engaged and motivated when the occurrence of a task matches the temporal distance associated with their self-construal. According to regulatory fit theory (Higgins, 2000, 2005), people experience regulatory fit (nonfit) when they process information or make trade-off decisions in a manner that matches (mismatches) their regulatory orientation. The regulatory fit effect has been observed predominantly in the context of persuasion (for a review, see Lee & Higgins, 2009). But the effect has also been extended to social interaction: Promotion-focused victims forgive transgressors more when they receive promotion-framed (vs. prevention-framed) apologies, whereas prevention-focused victims forgive transgressors more when they receive prevention-framed (vs. promotion-framed) repentance (Santelli, Struthers, & Eaton, 2009). The experience of regulatory fit serves as a magnifier of reactions, intensifying people's feelings of attraction toward something they like and their feelings of repulsion from something they dislike (Higgins, 2006; Lee & Higgins, 2009). Thus, a positive reaction becomes more positive, and a negative reaction becomes more negative (Cesario, Grant, & Higgins, 2004).

Thus, people with a more accessible independent self-construal will experience regulatory (non)fit when they perceive a task in the distant (proximal) future, and those with a more accessible interdependent self-construal will experience regulatory (non)fit when they perceive a task in the proximal (distant) future. Based on the notion that regulatory fit intensifies people's reactions and impacts their motivation and engagement, we propose that independents will perceive an enjoyable (unpleasant) task as more (less) motivating when the task is temporally distant than proximal, whereas interdependents will perceive the enjoyable (unpleasant) task as more (less) motivating when the task is temporally proximal than distant.

We tested our hypotheses in four studies, using multiple operationalizations of self-construal (personal disposition in Study 1, cultural orientation in Study 2, and a situational prime in Studies 3 and 4). We examined self-construal as an antecedent of temporal distance perception in Studies 1 and 2 and tested our temporal fit hypotheses in Studies 3 and 4.

### STUDY 1: SELF-CONSTRUAL AND TEMPORAL DISTANCE

The primary objective of Study 1 was to test the hypothesis that individuals with a more accessible interdependent (vs. independent) self-construal are likely to perceive a future event as temporally more proximal. In this study, we operationalized self-construal as an individual difference.

#### Method

##### *Participants and Procedure*

Thirty-seven European American graduate students (15 females, mean age = 27.84 years) in business administration at Northwestern University in the United States participated voluntarily in this study. Participants were presented with the following scenario:

Stock prices of the company that you work for have seen some huge fluctuations in the last year. Many external analysts thought that the company had made a good move with a recent acquisition. Internally, Human Resources just announced plans for a company-wide restructuring. At the meeting with the Director of Human Resources, you learn that you will be transferred to another division within the company to facilitate the growth of the business. This new assignment will take effect when other personnel changes are in place.

Participants indicated when they thought the new assignment would take effect using a seven-point scale (1 = *in a week or so*; 7 = *in a year's time*). Participants then responded to an 11-item independence–interdependence scale (adapted from Gabriel & Gardner, 1999; Singelis, 1994) and other miscellaneous measures.

#### Results and Discussion

We first created an independence index ( $\alpha = .61$ ) and an interdependence index ( $\alpha = .82$ ) by averaging the items of the independence and interdependence subscales. A Relative Self-Construal Index was then created for each participant by subtracting their independence score from their interdependence score (e.g., Gardner et al., 1999; Howard, Gardner, & Thompson, 2007), with a positive (negative) score reflecting a more accessible interdependent (independent) self-construal. Overall, participants were more independent than interdependent ( $M = -0.77$ ,  $SD = 1.21$ ;  $Max = 2.00$ ,  $Min = -3.17$ ), and

they perceived the assignment as taking effect in more than a few weeks away ( $M = 3.70$ ,  $SD = 1.37$ ;  $Max = 7.00$ ,  $Min = 2.00$ ).

A regression analysis examining the effect of the Self-Construal Index on temporal distance showed a negative coefficient of self-construal, providing preliminary support for our hypothesis,  $b = -0.41$ ,  $t(35) = -2.31$ ,  $p < .03$ , adjusted  $R^2 = .11$ . That is, the more accessible is their interdependent (vs. independent) self-construal, the more temporally proximal was their perception of the event. We also conducted a separate analysis using the independence and interdependence indices as predictors of temporal distance,  $F(2, 34) = 2.78$ ,  $p = .07$ , adjusted  $R^2 = .09$ . As predicted, the coefficient of the independence subscale is positive and marginally significant,  $b = 0.35$ ,  $t(34) = 1.67$ ,  $p = .10$ ; whereas the coefficient of the interdependence subscale is negative and significant,  $b = -0.52$ ,  $t(34) = -1.98$ ,  $p = .05$ , suggesting that a more accessible interdependent (vs. independent) self-construal is associated with a more proximal future.

While these findings are consistent with our hypothesis, we note that the reliability of the independence subscale is not quite at the conventional level of  $\alpha = .70$ , which might be the result of the relatively small sample size of the study. Study 2 was designed to remedy these limitations. We tested the robustness of this finding in the next study using a different operationalization of self-construal and increasing the sample size and the range of the dependent measures.

### STUDY 2: CULTURAL ORIENTATION AND TIME PERSPECTIVES

The objective of Study 2 was to provide convergent evidence for our hypothesis that individuals with a more accessible interdependent (vs. independent) self-construal perceive future events to be more proximal. To this aim, we recruited participants with different cultural orientations—European Americans whose independent self-construal tends to be more accessible and East Asians whose interdependent self-construal tends to be more accessible (Markus & Kitayama, 1991). Another objective of the study is to examine the difference between temporal distance and temporal consequences to gain insights into the relationship between self-construal and the two distinct time perspectives.

#### Method

##### *Participants and Procedure*

A total of 96 undergraduate students (25 females, mean age = 21.80 years) at Northwestern University in the United States participated voluntarily in the study for a chance to win \$100. The European American sample consisted of 52 students who indicated Caucasian as their ethnicity, and the East Asian sample was 44 students (24 females, mean age = 20.80 years) who identified their ethnic background as Chinese, Korean, or Japanese. All participants completed an online survey in English.

Participants were asked to imagine that they were working at the Chicago Children's Association and were presented with the following scenario:

The mission of the Association is to improve the lives of children by shaping policies and programs to meet their needs, and to keep the well-being of children at the top of the public agenda. The Association has announced plans to organize a Children's Festival, and you are assigned to work on this project. The official assignment will take effect when other staff members are in place. Now please take a moment to imagine the activities at the festival.

Then participants were asked to indicate using a 10-point scale when they thought the festival would take place (1 = *a week from now*; 10 = *one year from now*). Participants also indicated how they felt about the assignment using two seven-point scales (1 = *not at all happy, not at all disappointed*; 7 = *very happy, very disappointed*). After completing these items, they were presented with more information on the event:

Now imagine that all the hard work has paid off and the Children's Festival is a huge success. The different events are very well attended and everybody seems to be having a good time. The business and civic leaders in the local community all vow their support to raise the voices of children.

Participants were asked to indicate using a 10-point scale how long they thought the community's enthusiasm would last (1 = *2 weeks*; 10 = *over 2 years*). Finally, they responded to some demographic measures.

## Results and Discussion

We standardized all dependent variables and used  $z$ -scores to examine cross-cultural differences between the European American and East Asian samples (Leung & Bond, 1989). To examine if participants' cultural orientation influenced their assessment of the assignment, participants' ratings on the happiness and disappointment (reverse-coded) items were averaged to form a Task-Affect Index ( $r = .52$ ,  $p < .001$ ;  $M = 4.50$ ,  $SD = 5.20$ ;  $Max = 7.00$ ,  $Min = 2.50$ ). A  $t$ -test showed that our European American participants ( $Z = -0.12$ ,  $SD = 1.04$ ) and East Asian participants ( $Z = 0.13$ ,  $SD = 0.94$ ) did not differ in their affective assessment of the event,  $t(93) = 1.22$ ,  $p = .20$ . This suggests that any difference in the time perspectives observed between the two groups could not be attributed to a difference in their reception of the assignment.

### Hypothesis Testing

We hypothesized that our East Asian participants would perceive the festival as taking place *sooner* relative to their European American counterparts, but that they would expect the community's enthusiasm to last *longer*. We first examined the relationship between cultural orientation and temporal distance ( $M = 5.54$ ,  $SD = 2.11$ ;  $Max = 10.00$ ,  $Min = 1.00$ ). An analysis of covariance (ANCOVA) with task affect as a

covariate showed that the effect of the covariate was marginally significant such that participants who judged the event to be more positive tended to perceive the festival to be taking place later,  $F(1, 92) = 3.25$ ,  $p = .08$ ,  $\eta_p^2 = 0.03$ . As predicted, the effect of cultural orientation was significant,  $F(1, 92) = 5.21$ ,  $p < .05$ ,  $\eta_p^2 = .05$ . Consistent with our hypothesis, East Asians perceived the festival as happening sooner ( $Z = -0.22$ ,  $SD = 1.03$ ) than European Americans ( $Z = 0.19$ ,  $SD = 0.94$ ).

Next, we examined the relationship between cultural orientation and temporal consequences ( $M = 3.21$ ,  $SD = 1.83$ ;  $Max = 8.00$ ,  $Min = 1.00$ ). The results of an ANCOVA with task affect as a covariate showed that the covariate was significant such that participants who evaluated the assignment more positively thought the community's enthusiasm would last longer,  $F(1, 92) = 4.01$ ,  $p = .05$ ,  $\eta_p^2 = 0.04$ , and as predicted, our East Asian participants believed that the community's post-festival enthusiasm would last longer ( $Z = 0.39$ ,  $SD = 0.95$ ) than did our European American participants ( $Z = -0.34$ ,  $SD = 0.93$ ),  $F(1, 92) = 12.68$ ,  $p = .001$ ,  $\eta_p^2 = 0.12$  (see Figure 1).

These results provided convergent evidence for the hypothesized relationship between self-construal and temporal distance. The findings also helped to reconcile the discrepancy between our view that an interdependent self-construal is associated with a proximal temporal distance and the commonly held belief that members of East Asian cultures are more long-term oriented than members of European cultures. By differentiating between temporal distance and temporal consequences, we present evidence that people with different cultural orientations have distinct time perspectives, both in terms of temporal distance to the event and temporal consequences of the event.

We replicated these findings using a different sample of 104 students from Cornell University in the United States that consisted of 61 European Americans (33 females, mean age = 21.29 years) and 43 Korean nationals (18 females, mean age = 28.15 years) who completed a similar questionnaire except that the name of the Association was changed to reflect a local organization (Tompkins County Children's

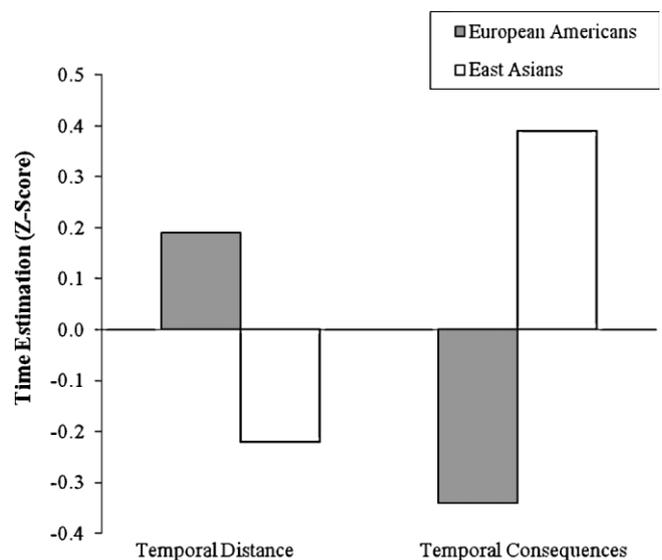


Figure 1. Time estimation ( $z$ -score) as a function of cultural orientation and temporal distance versus consequences (Study 2)

Association) and that the Korean participants completed a Korean version of the same questionnaire. Planned contrasts using one-tailed tests showed that our Korean participants perceived the festival to be temporally more proximal ( $Z = -0.24$ ,  $SD = 0.93$ ) than their American counterparts ( $Z = 0.17$ ,  $SD = 1.02$ ),  $t(101) = 2.05$ ,  $p = .02$ ,  $d = 0.42$ . Our Korean participants also thought that the community's post-festival enthusiasm would last longer ( $Z = 0.37$ ,  $SD = 0.94$ ) relative to the American participants ( $Z = -0.27$ ,  $SD = 0.96$ ),  $t(101) = 3.35$ ,  $p < .001$ ,  $d = 0.67$ . In the next two studies, we extended these findings to examine the effect of a fit between self-construal and temporal distance on task evaluation.

### STUDY 3: FIT BETWEEN SELF-CONSTRUAL AND TEMPORAL DISTANCE

Although the findings of Studies 1 and 2 provided convergent evidence for our self-construal and temporal distance hypothesis, the correlational nature of the data did not allow unambiguous interpretation of the data. Thus, one objective of Study 3 was to gain more confidence in the hypothesized effect of self-construal by systematically varying the accessibility of participants' self-construal using a situational prime. Another important objective of Study 3 was to test the temporal fit hypothesis that people perceive a pleasant task as more motivating when it is scheduled at a temporal distance that fits their self-construal. That is, individuals with a more accessible independent self-construal will perceive an enjoyable task assignment as more motivating when the assignment is in the distant (vs. proximal) future, whereas the reverse will be observed among those with a more accessible interdependent self-construal.

#### Method

##### *Stimulus Development*

We developed and pretested a scenario where participants were asked to imagine they were assigned to work on an important project and were waiting to deliver a presentation to their client. A sample of 27 participants were asked to evaluate the task using a three-item seven-point scale (1 = *very unpleasant, not at all enjoyable, dreading it*; 4 = *neutral*; 7 = *very pleasant, very enjoyable, looking forward to it*). These items were averaged to create a Task-Pleasantness Index ( $\alpha = .92$ ). A one-sample  $t$ -test examining the difference between the sample mean and the neutral midpoint of the scale showed that participants considered the task described in the scenario to be quite pleasant ( $M = 4.64$ ,  $SD = 1.65$ ),  $t(26) = 2.03$ ,  $p = .05$ .

##### *Participants and Procedure*

A total of 92 undergraduate students (42 females, mean age = 21.17 years) from Northwestern University in the United States participated voluntarily in the study. Participants responded to an email invitation to take part in an online survey on decision-making in exchange for an opportunity to

win \$100. A 2 (self-construal: independent vs. interdependent)  $\times$  2 (temporal distance: distant vs. proximal) between-participant design was used.

Participants were told that they would be completing a series of different tasks. The first decision-making task was in fact the self-construal manipulation that has been successfully used in prior research (Gardner et al., 1999; Trafimow et al., 1991; Ybarra & Trafimow, 1998). Specifically, all participants read the following scenario:

Sostoras, a warrior in ancient Sumer, was largely responsible for the success of Sargon I in conquering all of Mesopotamia. As a result, he was rewarded with a small kingdom of his own to rule. About 10 years later, Sargon I was conscripting warriors for a new war. Sostoras was obliged to send a detachment of soldiers to aid Sargon I. Sostoras had to decide who to put in command of the detachment.

Half of the participants who were randomly assigned to the independent self-construal condition continued reading more about Sostoras' decision to enhance his own standing and to promote his personal power and prestige:

After thinking about it for a long time, Sostoras eventually decided on Tiglath who was a talented general. This appointment had several advantages. Sostoras was able to make an excellent general indebted to him. This would solidify Sostoras' hold on his own dominion. In addition, the very fact of having a general such as Tiglath as his personal representative would greatly increase Sostoras' prestige. Finally, sending his best general would be likely to make Sargon I grateful. Consequently, there was the possibility of getting rewarded by Sargon I.

The other half who were randomly assigned to the interdependent self-construal condition read about Sostoras' decision to show loyalty to his community and to promote his community's power and prestige:

After thinking about it for a long time, Sostoras eventually decided on Tiglath who, while not an intimate of Sostoras, was an important member of his community. This appointment had several advantages. Sostoras was able to show loyalty to the community. Tiglath was able to cement his loyalty to the community. In addition, having Tiglath as the commander increased the power and prestige of the community as a whole. Finally, if Tiglath performed well, Sargon I would be indebted to the whole community.

After reading the scenario, participants indicated their assessment of Sostoras' decision using a seven-point scale (1 = *not at all strategic*; 7 = *very strategic*). On the next screen, all participants were presented with a seemingly unrelated task which contained the temporal distance manipulation. Participants were asked to imagine that they were assigned to work on an important project. Participants in the temporally distant (proximal) condition read the following:

At an initial meeting, the allocation of task responsibility and work protocol are discussed. The project has now been completed, and the last step is for you to make a presentation to the client on the key findings and

recommendations. Final touches to the presentation have been made and you are waiting for the important occasion which is scheduled to take place in 2 months (2 days).

Participants were then asked to indicate how they felt about the upcoming presentation using a two-item seven-point scale (1 = *very unrewarding, not at all eager*; 7 = *very rewarding, very eager*) (e.g., Freitas & Higgins, 2002; Hong & Lee, 2008; Idson, Liberman, & Higgins, 2004).

## Results and Discussion

A Task-Perception Index was created by averaging participants' ratings on the two items ( $r = .57$ ,  $p < .001$ ). A 2 (self-construal)  $\times$  2 (temporal distance) analysis of variance (ANOVA) on the Task-Perception Index showed that neither the main effect of self-construal nor the main effect of temporal distance was significant,  $F_s < 1$ . However, the predicted interaction was significant,  $F(1, 88) = 5.89$ ,  $p < .05$ ,  $\eta_p^2 = 0.06$ . Subsequent planned contrasts using one-tailed tests showed that participants whose independent self-construal was made momentarily more accessible perceived the presentation as more motivating when it was scheduled in 2 months ( $M = 5.47$ ,  $SD = 0.94$ ) than in 2 days ( $M = 4.85$ ,  $SD = 1.26$ ),  $t(88) = 1.76$ ,  $p < .05$ ,  $d = 0.56$ . In contrast, participants whose interdependent self-construal was made momentarily more accessible perceived the presentation as more motivating when it was happening in 2 days ( $M = 5.34$ ,  $SD = 0.71$ ) than in 2 months ( $M = 4.83$ ,  $SD = 1.32$ ),  $t(88) = 1.68$ ,  $p < .05$ ,  $d = 0.48$  (see Figure 2).

These results supported our hypothesis regarding the effect of a fit between self-construal and temporal distance such that people perceive a positive task as more motivating when the task is scheduled at a temporal distance that matches their self-construal. Notably, we did not find a main effect of self-construal or temporal distance, which suggests that the more motivated task-perception could not be explained by differences in self-construal or in temporal distance. Rather, it is the match or mismatch between self-construal and temporal distance that generates the results.

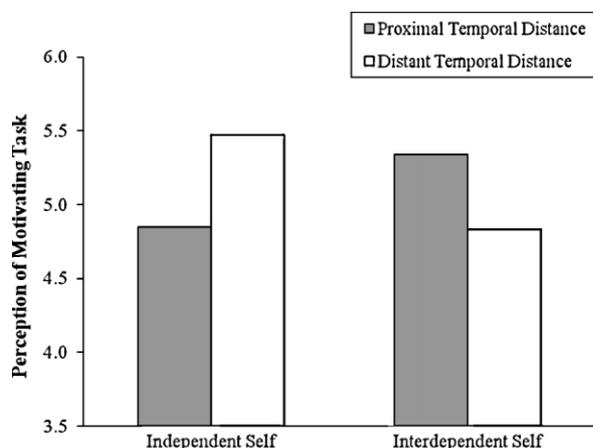


Figure 2. Perception of motivating task (pleasant task) as a function of self-construal and temporal distance (Study 3)

## STUDY 4: THE EFFECT OF FIT ON NEGATIVE TASKS

The objective of Study 4 was to examine the effect of fit between self-construal and temporal distance on people's perception of an unpleasant task. Regulatory fit theory (Higgins, 2006) posits that a fit experience intensifies reactions such that a positive reaction becomes more positive and a negative reaction becomes more negative. Thus, an unpleasant task scheduled at a temporal distance that matches the individual's self-construal should be perceived as more negative than the same task scheduled at a mismatched temporal distance. That is, independents will perceive an unpleasant task assignment as less motivating when it is scheduled in the distant (vs. proximal) future, whereas the reverse will be observed among interdependents.

## Method

### Stimulus Development

We developed and pretested a scenario where participants were asked to imagine a situation where they would be making cold calls as part of a volunteer assignment. Fifty-five participants in a pretest were asked to evaluate the task using a three-item seven-point scale (1 = *very unpleasant, not at all enjoyable, dreading it*; 4 = *neutral*; 7 = *very pleasant, very enjoyable, looking forward to it*). These items were averaged to create a Task-Pleasantness Index ( $\alpha = .96$ ). A one-sample  $t$ -test examining the difference between the sample mean and the neutral midpoint of the scale confirmed that participants indeed found the task to be quite unpleasant ( $M = 3.53$ ,  $SD = 1.58$ ),  $t(54) = -2.22$ ,  $p < .05$ .

### Participants and Procedure

A total of 104 undergraduate students (65 females, mean age = 20.43 years) from Northwestern University in the United States participated voluntarily in an online survey in exchange for a chance to win \$100. A 2 (self-construal: independent vs. interdependent)  $\times$  2 (temporal distance: distant vs. proximal) between-participant design was used.

As in Study 3, participants first read a story about Sostoras (Gardner et al., 1999; Trafimow et al., 1991; Ybarra & Trafimow, 1998) and then indicated how strategic they thought Sostoras was (1 = *not at all strategic*; 7 = *very strategic*). Then participants were presented with a seemingly unrelated decision-making scenario that contained the temporal distance manipulation. Participants in the temporally distant (proximal) condition read the following scenario:

Imagine that you are a volunteer at the Summer Jobs for Youths Bureau. Every year the Bureau makes telephone calls to local companies listed in the Yellow Pages to explain to management the mission of the Bureau and to solicit their support by hiring summer interns. Every volunteer takes turns being the 'ambassador on duty' for a day to make these calls. Although you are committed to advancing the cause of the Bureau, you have never made

cold calls before. Some experienced callers have said that it is often difficult to get through to the right person and that some people can be very rude. You have been assigned to be the ‘ambassador on duty’ in three weeks (two days). Now please imagine what it is like in three weeks (two days), when you are about to make your first call.

Participants were then asked to indicate their reaction to being the ambassador on duty using a two-item seven-point scale (1 = *very unrewarding, not at all motivated*; 7 = *very rewarding, very motivated*).

## Results and Discussion

The two items were averaged to create a Task-Perception Index ( $r = .68$ ,  $p < .001$ ). The results of a 2 (self-construal)  $\times$  2 (temporal distance) ANOVA on the Task-Perception Index showed that neither main effect was significant,  $F_s < 1$ . Central to this research, the predicted interaction was significant,  $F(1, 100) = 5.84$ ,  $p < .05$ ,  $\eta_p^2 = 0.06$ . Subsequent planned contrasts using one-tailed tests showed that participants primed with an independent self-construal perceived the unpleasant task as less motivating when it was in the more distant future ( $M = 3.88$ ,  $SD = 1.50$ ) than in the proximal future ( $M = 4.50$ ,  $SD = 1.31$ ),  $t(100) = 1.65$ ,  $p = .05$ ,  $d = 0.44$ , whereas those primed with an interdependent self-construal perceived the task as less motivating when it was in the proximal future ( $M = 3.78$ ,  $SD = 1.31$ ) than in the distant future ( $M = 4.50$ ,  $SD = 1.55$ ),  $t(100) = 1.76$ ,  $p < .05$ ,  $d = 0.50$  (see Figure 3). Consistent with regulatory fit theory (Higgins, 2006), these results provide support for our hypothesis that individuals perceive an unpleasant task to be less motivating when it is scheduled at a temporal distance that fits their self-construal.

## GENERAL DISCUSSION

The current research makes important contributions to several literatures—self and cross-cultural research, regulatory fit, and construal level theories. First, these results add to the self and cross-cultural literature by demonstrating how the two

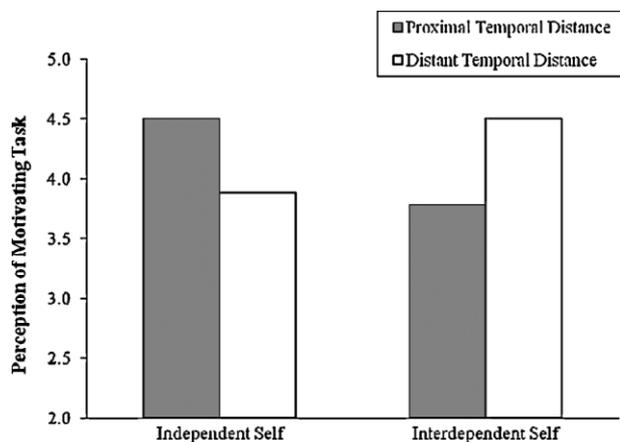


Figure 3. Perception of motivating task (unpleasant task) as a function of self-construal and temporal distance (Study 4)

distinct self-construals differ in terms of temporal distance and temporal consequences. In Study 2, we showed that East Asians were more likely to perceive a future event at a more proximal temporal distance than European Americans; but East Asians also thought that the event has longer-term consequences. Thus, interdependents may be more long-term oriented relative to independents in terms of temporal consequences, but they have a more proximal time perspective than independents in terms of temporal distance to events. These findings were replicated using a different sample. Further research is warranted to more systematically examine the distinction between temporal distance and temporal consequences and to reconcile East Asians’ proximal temporal-distance perception and long-term orientation.

The current research expands the boundaries of the regulatory fit effect by demonstrating that temporal distance can lead to regulatory fit or nonfit, depending on the way that individuals view the self. In particular, construing a task at a temporal distance that corresponds with the individual’s more accessible self-construal intensifies their reaction toward the task such that they perceive a positive task as more motivating (Study 3) but a negative task as less motivating (Study 4). Recently, Förster and Higgins (2005) show that global (local) processing creates a fit with promotion (prevention) focus; while Liberman and Förster (2009a) demonstrate that temporal, spatial, and social distance (proximity) enhances global (local) perceptual processing. Thus, we conjecture that an independent self-construal with its attendant promotion goal may fit with global processing whereas an interdependent self-construal with its attendant prevention goal may fit with local processing. Moreover, an independent (interdependent) self-construal may enact a fit with not only temporal but also spatial and social distance (proximity) to influence task engagement and motivation. Viewed from these perspectives, our results implicate multiple antecedents of regulatory fit and nonfit experiences.

This research builds on and extends construal level theory. Much of the research on construal level theory focuses on the effects of temporal distance in terms of how it alters people’s mental representations of future events and their preferences. For instance, Förster et al. (2004) find that the greater the temporal distance, the more likely events are being represented in abstract, general, and decontextualized terms as opposed to concrete, contextual, and incidental details. The current research takes on a different approach to understanding temporal distance by examining its antecedents rather than its consequences (e.g., Liberman et al., 2007). Our results present evidence that temporal distance is influenced by the way people view the self.

Our work extends the current literature of self-construal and consumer choice by explicating a temporal moderator of existing findings. Zhang and Mittal (2007) show that independent consumers evaluate an option that has extremely positive and extremely negative attributes more favorably whereas interdependent consumers evaluate the same option less favorably, presumably because independents focus more on positive than negative attributes and the reverse is true for interdependents. Our results suggest that these effects might be stronger under a temporal fit condition. That is, independent consumers may feel even more positive about the enriched option when the purchase timing is in the distant future (as in Study 3) whereas interdependent consumers may feel even

more negative about the enriched choice when the purchase timing is in the proximal future (as in Study 4).

This research provides new insights into the contexts under which the basic approach and avoidance motivations operate (Higgins, 1997; Molden et al., 2008). According to the basic hedonic principles of pleasures and pains, people approach pleasures and avoid pains (Brown, 1948; Miller, 1944; Miller & Murray, 1952). Thus, it would seem that approach motivation may relate to a proximal distance whereas avoidance motivation may relate to a distal distance. Indeed, approach-trained participants were found to sit closer to a Black confederate than avoidance-trained participants, demonstrating differences in their desired spatial distance from a racial minority (Kawakami, Phillips, Steele, & Dovidio, 2007). However, as consistent with regulatory focus theory that there are separate approach and avoidance systems for promotion versus prevention focus, our Studies 3 and 4 results demonstrated that independents are more sensitive to both positive (approach) and negative (avoidance) events that are in the more distant future, whereas interdependents are more sensitive to both positive and negative events taking place in the more proximal future.

### Future Research

In the current research, our unit of analysis was the individual—the self. Our hypotheses were based on the notion that the independent self pursues personal autonomy and aspiration (promotion focus) whereas the interdependent self pursues the fulfillment of duties assigned in social relationships (prevention focus). However, if the unit of analysis is the group, the regulatory focus of the distinct self might change. To illustrate, cultures differ in the conception of individual versus group autonomy and situational constraint: North Americans view individuals as agentic and autonomous and groups as being constrained by situations, whereas East Asians view groups as agentic and autonomous and individuals as being constrained by situations such as groups (Chiu, Morris, Hong, & Menon, 2000; Menon, Morris, Chiu, & Hong, 1999). Thus, just as independents are promotion-focused in pursuing their personal autonomy and aspiration, interdependents may also be promotion-focused when pursuing their group's autonomy and aspiration. Similarly, just as interdependents are prevention-focused and predisposed to seek the fulfillment of their duties and obligations, independents may become prevention-focused when fulfilling their group's duties and obligations. Future research should examine the relationship between self-construal, temporal distance and agency to further elucidate the condition under which East Asians may adopt a proximal or distal temporal perspective.

Another potential moderator that may be worth investigating is self-relevance. Recent developments of construal level theory have demonstrated that global-versus-local processing influences temporal, spatial, social distance and hypotheticality when people estimate temporal distance from now, spatial distance from here, social distance from the self, and hypotheticality from experienced reality. Our investigations showing the temporal fit effect conform to these findings: Participants focused on a task that involved the self, and at a temporal distance measured from now. A different pattern emerged when people estimated nonegocentric

distances (e.g., temporal distance not from now, spatial distance from there, social distance from others, and hypotheticality from inexperienced scenario; Liberman & Förster, 2009a, 2009b). Thus, investigations of how independents and interdependents react to self versus other-focused events situated at different temporal distances from a time in the future or in the past might be fruitful avenues for future research.

### Practical Implications

This research has important implications for time management and subjective well-being. People's perception of time and their ability to cope with time pressure have been shown to influence task performance, productivity, collaboration, and job satisfaction (Bartel & Milliken, 2004; Bingham & Hailey, 1989). As the need to work in teams and interact with people across cultural boundaries increases, the potential for conflicts also increases. In this regard, our findings have implications for conflict reduction in the workplace. For example, people with different self-construals working on the same project may use different criteria to allocate time to a given task. Understanding the differences in cultural orientations and self-construals may help to minimize or defuse potential conflicts arising from people perceiving different temporal distances. How people with different self-construals and different temporal-distance perceptions may interact with each other to achieve more productive collaborations and greater subjective well-being awaits future research.

### ACKNOWLEDGEMENTS

The authors thank the associate editor Kerry Kawakami and three anonymous reviewers for their insightful feedback and guidance, and Youngjun Choe, Mark Chong, Adam Galinsky, Sachin Gupta, Seol Han, Julie Hennessy, Leanne Ling, Sara Melendy, Alfredo Mendiola, Therese O'Connor, Pedro Perez, Robert Spitzer, Roderick Swaab, Melissa Thomas-Hunt, Heather Tookes, and Avihu Zakai for their generous help with various stages of this research.

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