

The Role of Elaboration Moderating the Effects of Temporal Construal on Evaluation^{*}

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Abstract

The Construal Level Theory posits that future events are differentially construed, and thus evaluated, as a function of whether they are to be experienced in the near or distant future. We explore the question of when temporal distance influences evaluation, testing three alternative hypotheses. The results demonstrate that temporal distance only influences evaluation under thoughtful conditions. Although temporal construal effects emerge either for individuals high in need for cognition (study 1) or when individuals carefully think (study 2), they do not emerge for individuals low in need for cognition, nor when individuals do not engage in effortful thinking.

Keywords: Construal Level, Elaboration, Evaluation, Goals, Need for Cognition, Temporal Distance

Many evaluations and choices concerning products, services, and other social issues are made prior to their consumption or experience. One considers and chooses a vacation destination months in advance, at least if one is traveling to a popular destination. One subscribes to a theater series, paying for and committing to attend a number of plays over the course of a year. One falls in love with a

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sporty, albeit back-ordered, convertible not available for months. Indeed, many of the behaviors central to the field of consumer behavior involve varying degrees of temporal distance between evaluation and consumption. Given the frequency of this temporal dissociation between evaluation and consumption, understanding when the effects of temporal distance emerge becomes both theoretically and practically important. To the extent that this temporal distance systematically influences evaluation, it becomes of paramount importance to specify when such an influence is likely to emerge. Such is the goal of this research.

The influence of temporal distance has been the focus of prior research in economics, psychology, and marketing (e.g., Ainslie 1975; Loewenstein and Prelec 1993; Loewenstein, Read, and Baumeister, 2003; Read and Loewenstein 2000). Encompassing many findings of prior research, Trope and Liberman (2003) advanced a theory by which to understand how temporal distance influences the mental representation and evaluation of future events. However, there is still lack of research that addresses boundary conditions to the theory. Herein, we seek to understand the condition in which the effects of temporal distance on evaluation, as predicted by the Construal Level Theory (Trope and Liberman 2003), are more likely to hold. We outline the basic constructs and predictions of this theory and advance three hypotheses concerning a specific condition in which the predicted effects are likely to emerge. Specifically, we examine the moderating influence of elaboration on temporal construal.

THEORETICAL BACKGROUND AND HYPOTHESES

Construal Level Theory

At the heart of the Construal Level Theory lies the prediction that temporal distance to an event influences how that event is mentally construed, and that the mental construal has significant consequences on evaluation and choice made concerning those events. When the event lies in the distant future, individuals represent these distant future events according to abstract, general, superordinate, goal-relevant, and essential features of the event (e.g., desirability of the event). Such construals are decontextualized and focus

on the question of whether the event satisfies one's goals. In contrast, when the event lies in the near future, individuals represent these near future events based on specific, concrete, subordinate, goal-irrelevant, and incidental features (e.g., costs, feasibility, and implementation hurdles associated with the event: Trope and Liberman 2003). Such construals are highly contextualized and focus on the question of how to go about accomplishing the event. The association revealed between distance and construal level is now applied to spatial and social distance as well as temporal distance (Trope, Liberman, and Wakslak 2007)

To illustrate temporal construal, we use an example taken from the research upon which the theory is based (Trope and Liberman 2000: study 2), and which we subsequently use in our study 1 to examine the question of when the predicted effects are likely to emerge. To wit, imagine that an individual is considering a possible work-study position either to begin in the near or distant future. Suppose additionally that the job itself is described as being highly amusing and enjoyable, but several training sessions required for the job are boring and tedious, or instead, that the job itself is described as boring and tedious but the training sessions are amusing and enjoyable.

The Construal Level Theory predicts that when the work-study position is considered as being far off in temporal distance, it will be construed, and consequently evaluated according to its essential features, namely, whether the job itself is appealing. In contrast, when the work-study position is considered as being near in temporal distance, it will be construed and evaluated according to its incidental features, namely, whether the training is enjoyable. That is, contextualized and incidental information concerning the training is incorporated into the representation and evaluation of the possible work-study position when the position is near but not far, whereas decontextualized and essential information concerning the job is used to represent and guide evaluation when the position is far rather than near.

The results obtained by Trope and Liberman (2000) are consistent with these predictions, demonstrating that when considered far off in the distant future, the job's desirability influenced how attractive it was perceived, whereas when considered near in the future, the training as well as the job itself influenced evaluation. As a result, participants preferred the boring training/amusing job to the amus-

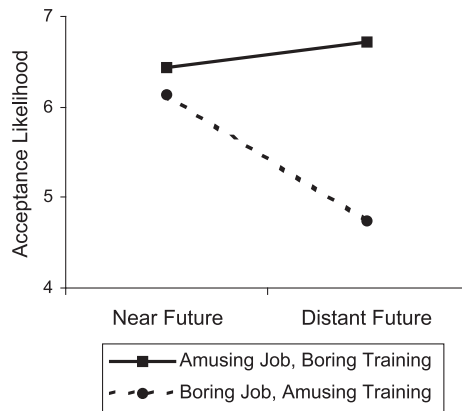


Figure 1. Evaluation as a Function of Work-Study Description and Temporal Distance (Trope and Liberman 2000, Study 2)

ing training/boring job when the position was considered in the far distant future. However, there was no difference in evaluation between the jobs when considered in the near future (Trope and Liberman 2000). This pattern is depicted in figure 1. It is worth noting here that although prediction for the distant future is relatively precise (namely, individuals construe and evaluate mostly based upon general, goal relevant features), prediction for the near future seems less precise. It seems ambiguous whether individuals construe and evaluate based solely upon specific, incidental features, thereby producing a cross-over interaction, or instead consider both general and specific features, thereby producing the observed funneled interaction. This ambiguity is addressed further in the general discussion.

When Temporal Distance Matters: Alternative Hypotheses

An examination of the hypothesized origins of the influence of temporal distance on mental construal and evaluation suggests three specific possibilities as to when in reference to elaboration temporal distance should influence evaluation. Trope and Liberman (2003) actually speculated as to the origins of the influence of temporal distance on mental representation and evaluation. They reasoned that temporal distance is normally associated with differ-

ing amounts of contextual information, such that events that are distant in the future are typically associated with general information free of contextual information, whereas events that are near in the future are associated with a great deal of specific information, heavily-laden with contextual information. This repeated pairing of amount and type of information with distance from an event tends to become (over)generalized, Trope and Liberman (2003) reasoned, such that individuals come to associate distant events with general, goal relevant information and near events with specific, implemental information, even when the amount and type of information available does not differ. However, a closer examination of their reasoning suggests (at least) three hypotheses about the question of when temporal distance matters.

Default linkage hypothesis. In articulating the origins of temporal construal, Trope and Liberman (2003) most clearly articulated the prediction that temporal distance will influence construal and evaluation as predicted across persons and situations unless specific interventions are implemented that draw attention away from the default construal. That is, the influence of temporal construal is, all else being equal, likely to occur by default. This prediction can be derived from two disparate sources. First, Trope and Liberman (2003) described the predicted effects in terms consistent with the default occurrence. For example, they referred to “the default linkage between temporal distance and level of construal.” Second, they suggested that the predicted relationship of temporal distance with construal and evaluation are likely to emerge unless specific interventions are performed. In enumerating several strategies to overcome focusing overly on general or specific features, Trope and Liberman (2003) suggested that it is only when these interventions are adopted that the default influence of temporal distance on evaluation can be overcome.

Non-thoughtful hypothesis. An alternative hypothesis can emerge when the hypothesized origins are considered from a persuasion perspective. Recall that Trope and Liberman (2003) conceptualized the influence of temporal distance on construal as the result of (over)generalized associations. For example, they wrote, “Temporal construal is a generalized heuristic that evolves as a result of repeated associations between temporal distance and people’s knowledge

about future events.” Similarly they wrote, “Temporal construal may evolve as an overgeneralized heuristic that is applied to situations in which it is neither appropriate nor necessary.” From a persuasion perspective, that conceptualization suggests that the use of an ‘(over)generalized heuristic’ should be more likely to emerge under non-thoughtful conditions. When individuals are thoughtful, their reliance on heuristics is reduced, and instead they are more likely to pay attention to central merits of an attitude object (Cacioppo et al. 1992; Priester, Cacioppo, and Petty 1996). If the influence of temporal distance is an overly generalized heuristic, its influence should be attenuated under thoughtful conditions and accentuated under non-thoughtful conditions.

Thoughtful hypothesis. The third prediction relies upon the connection between thinking and construal. Trope and Liberman (2003) specifically wrote, “One can therefore start *thinking* about a future situation in high-level terms... and only later *think* about the future situation in low-level terms [emphasis added].” This conceptualization allows for the possibility that the influence of temporal distance on construal and evaluation may emerge as a result of thoughtful consideration of temporal distance. That is, it is when one “carefully thinks” that differential construal as a function of temporal distance emerges. In the prior literature, similar influences of thought have been found with decisional influences such as the Background Contrast Effect (Priester, Dholakia, and Fleming 2004). If the influence of temporal distance emerges because of thought, its influence should be accentuated under thoughtful conditions but attenuated under non-thoughtful conditions.

Distinction between Mental Construal and Evaluation

Implicit in the earlier research on temporal construal was that temporal distance influences both mental construal and evaluation in an indiscriminate manner. That prediction is due to the assumption that the influence of temporal distance on construal directly transfers to evaluation. However, it is possible that two serially connected links (i.e., the link from temporal distance to construal and from construal to evaluation) may be characterized by distinct processes. Trope and his colleagues found in their subsequent research that in a context-free situation psychological

distance (including temporal distance) was tightly associated with construal level even at the automatic processing level, as illustrated in the Implicit Association Test (Bar-Anan, Liberman, and Trope 2006). This interesting finding seems more compatible with our non-thoughtful and/or default linkage hypotheses, but inconsistent with the thoughtful hypothesis.

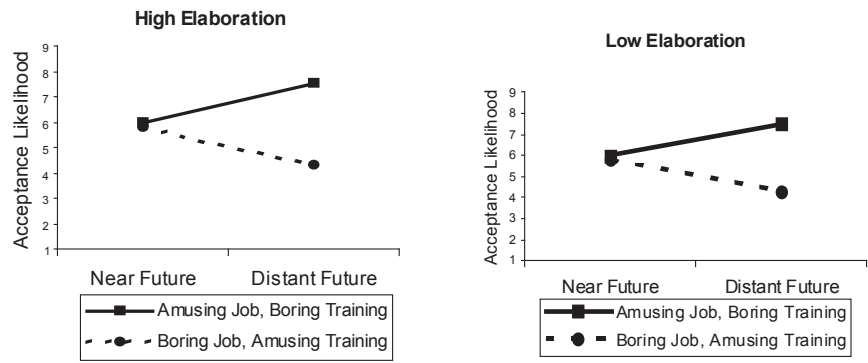
However, it still remains whether a similar unconscious processing predominates in the link from construal to evaluation. As noted by Bar-Anan, Liberman, and Trope (2006), a direct association similar to the one that exists between the concept of distance and construal level may not apply to the relation between construal (temporal distance more originally) and evaluation because evaluation is usually made in a very rich context. Evaluation inherently entails the presence of a target in a contextualized situation in which temporal distance is only one of the useful cues available in the environment. There are many other cues that are integrated into the evaluation process. We focus our interest on testing our hypotheses about “evaluation.” Given the direct association between temporal distance and construal, we test whether the influence of temporal construal on *evaluation* will be revealed via thoughtful or non-thoughtful processing, or regardless of thought.

The Moderating Role of Elaboration

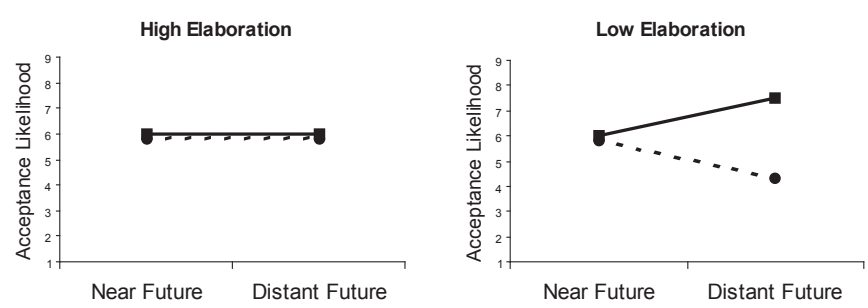
From the three theoretically different hypotheses, it emerges as a theoretically informative boundary condition whether and how elaboration moderates the effects of temporal construal on evaluation. Elaboration is the extent to which one is relatively thoughtful or non-thoughtful in arriving at an evaluation or choice (Petty and Cacioppo 1986; Petty and Wegener 1998; Priester, Dholakia, and Fleming 2004; Priester et al. 2004). When individuals are highly motivated and able to think, they arrive at evaluations by elaborating on available information. The hallmark of elaboration is that evaluations are the result of cognitive responses that an individual engaged generates in response to the information. When individuals lack either the motivation or ability to think, they are still able to arrive at evaluations. However, under these circumstances they tend to use less effortful associative and inference processes (Petty and Wegener 1998).

Elaboration is a particularly interesting potential moderator from

A. Default Linkage Hypothesis



B. Non-Thoughtful Hypothesis



C. Thoughtful Hypothesis

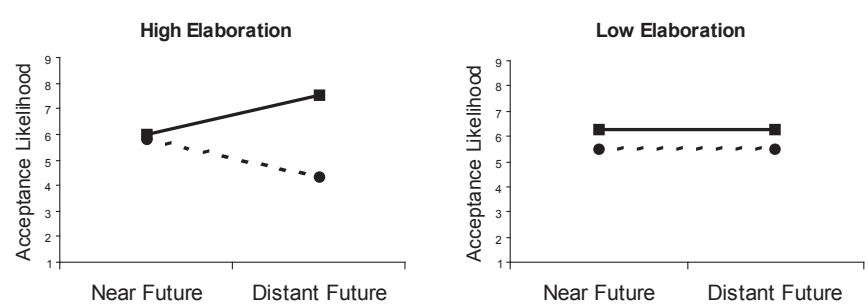


Figure 2. Predictions Associated with Three Alternative Hypotheses

a theoretical perspective because of the predictions that arise from the three hypotheses. Recall that the default linkage hypothesis suggests that elaboration should not moderate the findings predicted by the Construal Level Theory (figure 2, panel A), whereas the non-thoughtful hypothesis suggests that the prediction of the Construal Level Theory should hold for the low rather than high elaboration (figure 2, panel B), and the thoughtful hypothesis suggests that the prediction should hold for the high rather than low elaboration (figure 2, panel C). In the present research we both measured elaboration with the individual difference scale (study 1) and manipulated it by temporarily increasing the motivation to think (study 2).

STUDY 1: WORK-STUDY POSITION

Study 1 was conducted in order to test among the three alternative hypotheses. In study 1, we employed the same work-position materials as used in Trope and Liberman (2000) for direct comparison. These materials manipulated temporal distance and the description of a work-study position. To test among the hypotheses, we additionally introduced elaboration, as measured with the need for cognition scale (Cacioppo and Petty 1982).

Individual difference in need for cognition provides a non-invasive indicator of elaboration. Research has suggested that just as there are situational factors that are associated with increases or decreases in the amount of efforts individuals put into thinking about information, so too are there chronic individual differences in intrinsic motivation to engage in effortful cognitive endeavors (Cacioppo and Petty 1982; Cacioppo, Petty, and Kao 1984). Need for cognition is a measure of the chronic tendency of individuals to thoughtfully consider information, regardless of such factors as involvement and accountability (Cacioppo et al. 1996; Haugtvedt and Petty 1992). Individuals high in need for cognition are likely to elaborate information unless their ability is constrained. Individuals low in need for cognition are unlikely to elaborate information unless they are motivated to do so by situational factors such as personal relevance.

In study 1 we decided to operationalize elaboration with need for cognition for three specific reasons. First, as stated above, research has suggested that the need for cognition scale can be used to measure individual difference in the motivation to think about informa-

tion. For example, Haugtvedt, Petty, and Cacioppo (1992) showed that individuals high in need for cognition are influenced by the quality of product attributes in a typewriter advertisement (i.e., the central merits), whereas those low in need for cognition are instead influenced by the attractiveness of endorsers (i.e., peripheral cues). As such, need for cognition provides insight into differences in elaboration.

Second, need for cognition is a non-invasive means by which to examine the influence of elaboration on temporal construal. Specifically, need for cognition allows us to examine the effects of elaboration without any artificial manipulation that might cause unintended intervention in the natural thoughts and construals individuals have in response to information. Recall that the default linkage hypothesis suggests that the effects predicted by the Construal Level Theory will occur unless intervened by some artificial interventions. To provide the strongest test possible, it is desirable to examine the influence of elaboration free from any manipulations that could be conceptualized as triggering such interventions. Need for cognition is well-suited to that purpose in that individuals can respond to the stimulus information in a manner identical to that of Trope and Liberman (2000) and then subsequently complete the need for cognition scale, thereby allowing for a clean test for the influence of elaboration on temporal construal effects.

Third, recent research suggests that individuals high and low in need for cognition may not differ in the amount of attention paid to experimental tasks, but rather differ meaningfully in how they use information. For example, Priester, Dholakia, and Fleming (2004) suggested that the Background Contrast Effect (Simonson and Tversky 1992) emerges more under thoughtful than non-thoughtful conditions. The Background Contrast Effect is demonstrated when the trade-off values in the first choice systematically influence the second choice. They found that the second choice of individuals high in need for cognition was influenced by the first choice, whereas the second choice of individuals low in need for cognition was not similarly influenced. Need for cognition did not, however, influence the first choices. Both the high and low need for cognition individuals were equally likely to pay attention to and choose the naturally preferred first choice. These individuals differed, instead, in how they used the information from the first choice. In the present case, individuals both high and low in need for cognition may be aware of the

manipulations of temporal distance and work-study descriptions, but use the information in a different manner.

Method

Participants and design. One hundred and sixty-two undergraduates were randomly assigned to one of four cells in a 2 (temporal distance: near versus far) X 2 (work-study description: boring training with amusing job versus amusing training with boring job) factorial design. Participants completed the 18-item need for cognition scale (Cacioppo and Petty 1982) after completing all the experimental materials. They were classified as high or low in need for cognition based on median split, resulting in 79 high and 83 low need for cognition individuals. Thus, the data were finally entered into a 2 (temporal distance) X 2 (work-study description) X 2 (need for cognition) ANOVA.

Independent variables. As in Trope and Liberman (2000: study 2), temporal distance was manipulated both prior to and after reading a description of a work-study position. Before reading the description, participants in the near future were told to consider that the work-study position was “immediately” available, whereas those in the distant future were told to consider that the position would be available “a year from then.” After reading the description, participants were asked to imagine that they were looking for a work-study position in “the next week” or that they would be looking for a work-study position “a year later.”

We used the same Trope and Liberman’s (200) descriptions on work-study positions (see below). Before conducting a main study, we administered a brief pretest to ensure that our participants should perceive the attractiveness of the jobs and training sessions as manipulated. Each participant was presented either of the two descriptions and asked to rate the attractiveness of the job and training sessions separately on a 9-point scale (1 = very unattractive, 9 = very attractive). The results of paired-samples *t*-tests indicated that the materials successfully manipulated the attractiveness of the jobs and preliminary training sessions as intended (amusing job with boring training: $M_{\text{job}} = 6.66$, $M_{\text{training}} = 5.00$, $t(82) = 5.81$, $p < .0001$; boring job with amusing training: $M_{\text{job}} = 4.20$, $M_{\text{training}} = 6.92$, $t(78) = -9.54$, $p < .0001$).

[Amusing job with boring training] This work-study position is in a lab and requires participation in a study on humor and attitudes towards different types of jokes. The main task will involve judging and measuring people's evaluations of the funniness of cartoons, movies, and jokes. The main task will also require predicting and testing other people's reactions and evaluations of the same materials. The work-study will require preliminary training that involves a few sessions of learning the basics of attitude measurement (e.g., what are the different methods available for measuring attitudes, how scales are constructed and validated, and when each type of measurement should be used).

[Boring job with amusing training] This work-study position is in a lab and requires participation in a study on attitude measurement. The study will measure people's attitudes regarding abstract figures, political issues, or actual products, using different scales. The main task will involve mainly entering the data, and examining whether the attitudes elicited by the different types of measurement are similar or not. The work-study will require preliminary training that involves a few sessions of learning the basics of attitude change through analyzing commercial ads in papers and TV (e.g., what techniques are used by commercial companies to influence people's attitudes? How do these vary according to the type of product being advertised and the type of audience?).

Dependent variables. The key dependent variable was how likely they would be to accept the position. Participants provided their responses to this question on a 9-point scale, anchored with 1 (not at all likely) and 9 (extremely likely). This is the same dependent variable that was used by Trope and Liberman (2000) to provide a measure of the participants' evaluation of the position.

Results

The key dependent measure was entered into a 2 X 2 X 2 analysis of variance. This analysis revealed a significant main effect of work-study description ($F(1, 154) = 4.78, p < .05$). Not surprisingly, this main effect revealed that the amusing job ($M = 6.0$) was preferred to the boring job ($M = 5.2$). Replicating the results uncovered by Trope

Table 1. Evaluation of Work-Study Position: Marginal Means (Study 1)

Work-Study Position	Temporal Distance	
	Near Future	Distant Future
Amusing Job/Boring Training	5.78 (2.38) N = 41	6.16 (2.16) N = 44
Boring Job/Amusing Training	5.92 (1.92) N = 36	4.59 (2.06) N = 41

Note: Standard deviations are in parentheses.

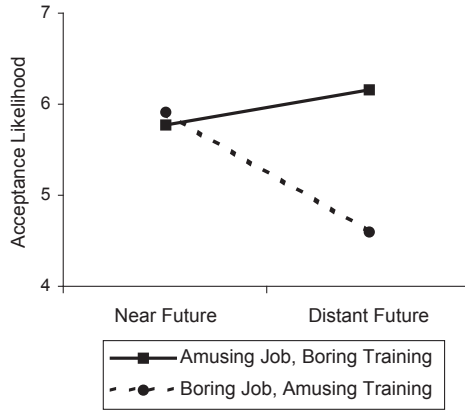


Figure 3. Evaluation as a Function of Work-Study Description and Temporal Distance (Study 1)

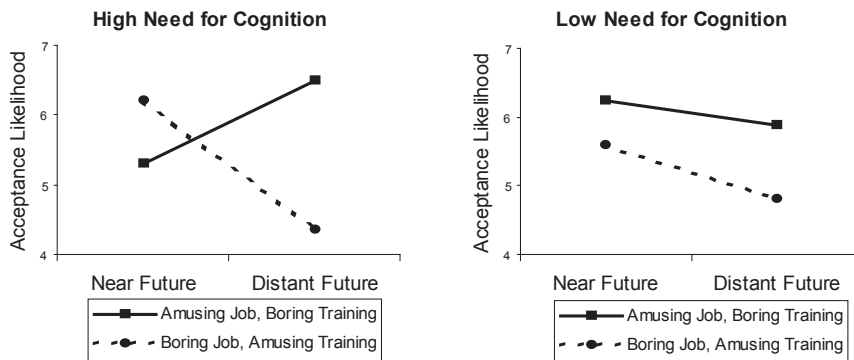
and Liberman (2000), this main effect was qualified by the two-way interaction of work-study description and temporal distance ($F(1, 154) = 6.61, p = .01$). This interaction revealed that, as predicted by the Construal Level Theory, the evaluation of the position as a function of the work-study description was attenuated under the near ($F(1, 73) = .07, p > .7$) but intensified under the distant future ($F(1, 81) = 12.17, p < .001$). This interaction is depicted in table 1 and figure 3.

Most importantly and informatively, this two-way interaction was qualified by a significant three-way interaction. We decomposed this

Table 2. Evaluation of Work-Study Position: Cell Means (Study 1)

Work-Study Position	High Need for Cognition		Low Need for Cognition	
	Near	Distant	Near	Distant
Amusing Job/ Boring Training	5.30 (2.30) N = 20	6.50 (1.93) N = 20	6.24 (2.43) N = 21	5.88 (2.33) N = 24
Boring Job/ Amusing Training	6.21 (1.62) N = 19	4.35 (2.11) N = 20	5.59 (2.21) N = 17	4.81 (2.04) N = 21

Note: Standard deviations are in parentheses.

**Figure 4. Evaluation as Function of Need for Cognition, Work-Study Description, and Temporal Distance (Study 1)**

three-way interaction by examining the two-way interaction of work-study description and temporal distance for the high and low need for cognition individuals separately. As predicted by the thoughtful hypothesis, we found a significant two-way interaction for individuals high in need for cognition ($F(1, 75) = 11.5, p = .01$). Although the amusing job was significantly preferred to the tedious job in the distant future ($F(1, 38) = 11.3, p < .001$), such an effect was not significant in the near future ($F(1, 37) = 2.0, p = .15$). In contrast, we found a marginal main effect of work-study description ($F(1, 79) = 2.9, p < .1$) for individuals low in need for cognition, unmoderated by temporal distance ($F(1, 79) = .2, p > .6$). This three-way interaction is depicted in table 2 and figure 4.

Discussion

Recall that we conducted study 1 in order to test which of the three alternative hypotheses best accounts for the emergence of the findings associated with the Construal Level Theory. The default linkage hypothesis predicted a work-study description X temporal distance interaction unmoderated by elaboration. The non-thoughtful hypothesis predicted a work-study description X temporal distance X elaboration interaction, in which the work-study description X temporal distance interaction emerges for the low but not high need for cognition individuals. Finally, the thoughtful hypothesis predicted a work-study description X temporal distance X elaboration interaction, in which the work-study description X temporal distance interaction emerges for the high but not low need for cognition individuals. The results of the current study supported the thoughtful hypothesis. Specifically, we found the predicted three-way interaction, demonstrating that differential evaluation as a result of temporal distance emerged for the thoughtful individuals but not for the non-thoughtful individuals.

At the most basic, the finding of study 1 provides the first evidence of the role of elaboration as an individual-related moderator to the Construal Level Theory, to the best of our knowledge. The present study both replicates and extends the basic findings of the Construal Level Theory. The results replicate the findings of the Construal Level Theory by finding the work-study description X temporal distance interaction and also extend the findings of the Construal Level Theory by uncovering the differential influence of temporal distance as a function of individual difference in elaboration. Not everyone differentially evaluates as a function of temporal distance. Rather, this differential evaluation seems driven by those individuals who evaluate thoughtfully. Hence, it seems both theoretically as well as practically important to not just ask when, but also for whom when matters. And thoughtful individuals are for whom when matters. In study 2 we adopt a different method to induce elaboration, thereby generalizing our findings and providing converging evidence of elaboration as a moderator to the Construal Level Theory.

STUDY 2: DIGITAL CAMERA

Study 2 was conducted to replicate the findings of study 1 in a marketing context and also to address the limitations raised in study 1. First, we manipulated elaboration instead of utilizing need for cognition as a proxy for elaboration. We varied the motivation to think via perceived personal relevance and decision importance. Second, we varied consumption rather than purchase time to manipulate temporal distance. The Construal Level Theory suggests that evaluation is influenced by temporal distance from “actual engagement” in an activity. Accordingly, consumers’ temporal perceptions and subsequent evaluation can be influenced by when they subjectively experience products, at least as much as by when they purchase products. Third, we explicitly manipulated purchase goals to vary mental construal levels. In most prior research, low-level construals usually concern the ‘how’ aspects of activities (e.g., feasibility of activities), which are considered as subordinate to the ‘why’ aspect of activities (Carver and Scheier 1990; Liberman and Trope 1998). However, it is not a focal point to make comparison between superordinate and subordinate goals. We investigated instead whether product attributes can be potentially considered either high- or low-level construals depending on goals. We defined consumers’ goals as abstract benefits at the level of product class, sought by consumers (Huffman and Houston 1993; Park and Smith 1989). For instance, ease of use is one possible goal for digital cameras, and such attributes as battery life, interface convenience, and uploading convenience are highly relevant to that goal.

Method

Participants and design. One hundred and twenty-six undergraduates participated and were randomly assigned to conditions in a 2 (elaboration: high versus low) X 2 (purchase goal: ease of use versus picture quality) X 2 (temporal distance: near versus distant future) between-subjects design. Eight participants were dropped due to the failure to understand the instruction about the purchase goal they were asked to imagine in the scenario. Participants were told on a cover page that they would see information about a new digital camera. Next, they received the elaboration manipulation

on the same cover page. Then on a separate page they received temporal distance and goal manipulations in a scenario, followed by product attribute information. Finally, they responded to several sets of dependent measures.

Manipulations of independent variables. The cover page of the questionnaire manipulated elaboration by varying personal relevance and decision importance (Haugtvedt and Wegener 1994; Maheswaran and Chaiken 1991; Maheswaran and Sternthal 1990). Specifically, participants read either of the following paragraphs respectively.

[High elaboration] In order to assess consumers' reactions to a new digital camera, a major local retailer and the manufacturer are surveying a small and very select group of consumers in our area. You are among the select group of consumers in our area. Your individual opinions are highly relevant and extremely important and will be weighted heavily in the decision to market the product. As such, the eventual fate of the product would depend upon your inputs a lot. The product will immediately be available in our area.

[Low elaboration] In order to assess consumers' reactions to the new digital camera, a retailer in another area and the manufacturer are surveying a large national sample of consumers across different geographical locations. You are among the national samples of consumers. Your individual opinions will be pooled and averaged with all of the other responses from all of the other respondents who participate in this survey. Therefore, your individual opinions will not make much of a difference and are not very important. We are only interested in understanding how all consumers, as a group, feel about the product. As such, your individual opinions will remain completely anonymous. The product will immediately be available in another area.

Two different goals associated with purchasing a digital camera were identified and manipulated. Participants under the ease of use goal were asked to imagine that they were going to start a research project and they were searching for a digital camera that they could easily and conveniently use on their field trip. On the

other hand, participants under the picture quality goal were asked to imagine that they were going to join a photography club and they were searching for a digital camera that could produce high-quality pictures for their amateur photo-work.

Along with the purchase goals, temporal distance was manipulated within a scenario presented to participants. Participants were first asked to imagine that they were about to purchase a digital camera soon. Then, each scenario manipulated temporal distance by varying the perception of when they would start using the camera they were about to buy. Participants under the near future were asked to imagine that they would use the camera “next week,” whereas those under the distant future were asked to imagine that they would use the camera “several months later.”

After reading one of the scenarios that combined the manipulations of temporal distance and purchase goals, each participant was presented with product attribute information on a new digital camera. Based upon a pretest among the same undergraduate population as recruited for the main experiment, we selected two sets of attributes highly relevant to either the ease of use or picture quality goal. All of these attributes were perceived to be important in evaluating digital cameras. One set of attributes (i.e., battery life, interface convenience, and uploading convenience) was considered to be more relevant to the ease of use than to the picture quality goal. The other set of attributes (i.e., exposure accuracy, lens quality, and resolution) was considered to be more relevant to the picture quality than to the ease of use goal. The attribute information was presented in a tabular format and described as being excerpted from the Consumer Report magazine. The first set of attributes was described as all positive and the second set of attributes was as all negative. In order to reinforce the valence manipulation, each attribute description was accompanied by a numerical rating anchored with 1 (very bad) and 9 (very good) (Sengupta and Johar 2002). The product attribute information is presented in the appendix. The evaluative implication of this attribute manipulation was that high-level construals were positive and low-level construals were negative under the ease of use goal. The opposite was true under the picture quality goal.

Dependent variables. Participants evaluated the digital camera on three 9-point scales ranging from -4 (very bad, very negative, and very unfavorable) to +4 (very good, very positive, and very

favorable). These items were averaged to form an evaluation index ($\alpha = .96$). Manipulation check measures for elaboration were assessed by two scales asking about the extent of processing attribute information. These scales were anchored at 1 (not at all thoughtfully, low attention paid) and 9 (extremely thoughtfully, high attention paid). These items were averaged to form an elaboration index ($\alpha = .84$). To assess the possibility that temporal distance might have been differentially perceived by thoughtful versus non-thoughtful participants, participants responded to a manipulation check for temporal perception asking about temporal distance to the use of the camera. This scale was anchored at 1 (very near in the future) and 9 (very far in the future). In addition, participants rated their subjective knowledge about, direct experience with, and familiarity with the digital camera category. Finally, they were asked to write briefly the most important purchase goal elicited by the scenario they read. All the dependent measures were analyzed using a 2 (elaboration) X 2 (purchase goal) X 2 (temporal distance) ANOVA. Three covariates (subjective knowledge, direct experience, and familiarity) were entered into analyses, but did not produce any significant effects. So the results on the covariates are not reported.

Results

Manipulation checks. An ANOVA on the elaboration index revealed only a main effect of elaboration ($F(1, 117) = 5.06, p < .05$). Participants reported more thoughtful processing of the material under high versus low elaboration conditions ($M = 7.04$ versus 6.43). An ANOVA on temporal perception yielded only a main effect of temporal distance ($F(1, 117) = 7.34, p < .01$). Participants under the distant (versus near) condition perceived that they would use the camera more distant in the future ($M = 4.89$ versus 3.70).

Product evaluation. An ANOVA on the evaluation index revealed two main effects of elaboration ($F(1, 117) = 6.28, p < .05$) and purchase goal ($F(1, 117) = 49.04, p < .0001$), and a two-way interaction between purchase goal and temporal distance ($F(1, 117) = 7.06, p < .01$). The main effect of purchase goal indicated that evaluations under the ease of use goal ($M = 1.17$) were more favorable than those under the picture quality goal ($M = -.98$). Not surprisingly, this discrepancy was due to our specific manipulations

Table 3. valuation of Digital Camera: Cell Means (Study 2)

Purchase Goal	High Elaboration		Low Elaboration	
	Near	Distant	Near	Distant
Ease of Use	0.87 (1.77) N = 15	2.19 (0.76) N = 14	0.87 (1.47) N = 15	0.86 (1.52) N = 17
Picture Quality	0.28 (1.52) N = 12	-1.25 (1.96) N = 12	-1.16 (1.66) N = 15	-1.50 (1.91) N = 18

Note: Standard deviations are in parentheses.

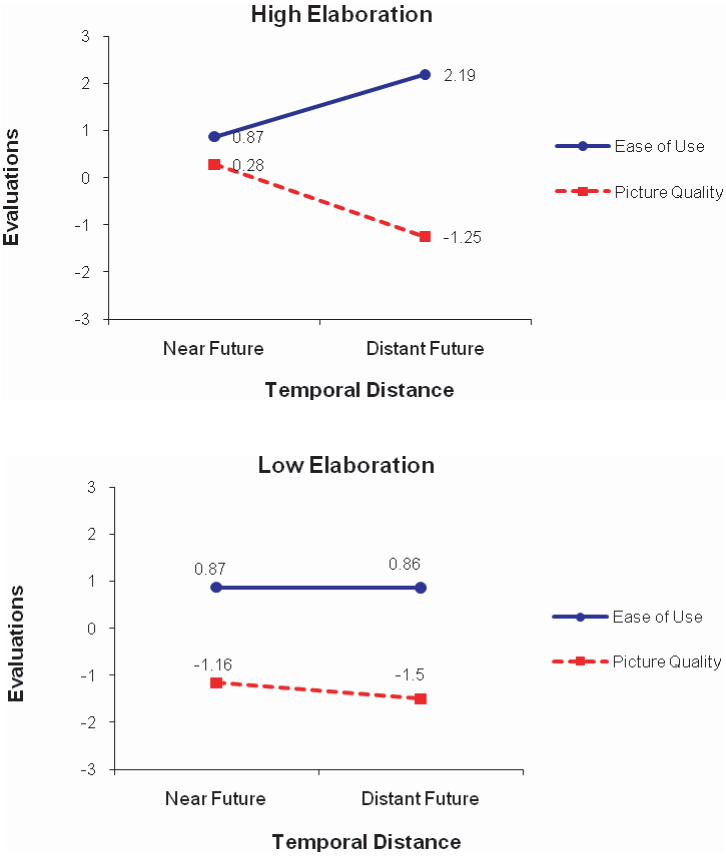


Figure 5. Evaluations of Digital Camera as a Function of Elaboration, Purchase Goal, and Temporal Distance (Study 2)

of the purchase goal and attribute information, namely, the valence of high- and low-level construals in the two goal conditions. The two-way interaction between purchase goal and temporal distance indicated that, as predicted by the Construal Level Theory, temporal distance increased evaluations under the ease of use goal ($M = 0.87$ versus 1.46), whereas it decreased evaluations under the picture quality goal ($M = -.52$ versus -1.40).

Most informatively and importantly, all the significant main effects and two-way interaction were qualified by a significant three-way interaction between elaboration, purchase goal, and temporal distance ($F(1, 117) = 4.37, p < .05$). Again, consistent with the thoughtfulness hypothesis, decomposition of the three-way interaction revealed that the interaction between purchase goal and temporal distance was significant under the high elaboration condition ($F(1, 117) = 10.21, p < .01$), but not under the low elaboration condition ($F < 1$).

The simple effects showed that participants under the ease of use goal evaluated the camera more favorably in the distant than in the near future ($M = 2.19$ versus $0.87, F(1, 117) = 4.86, p < .05$), but participants under the picture quality goal evaluated less favorably in the distant than in the near future ($M = -1.25$ versus $.28, F(1, 117) = 5.36, p < .05$). On the other hand, under the low elaboration condition, evaluation of the camera as a function of temporal distance was not significant for both conditions of purchase goal (ease of use: $M = .86$ versus $.87, F < 1$; picture quality: $M = -1.50$ versus $-1.16, F < 1$).

Discussion

The findings of study 2 confirm the thoughtfulness hypothesis again. Together with the findings of study 1, the results suggest that temporal distance matters only under thoughtful conditions. The present study also addresses the limitations and problems raised by study 1. First, we explicitly manipulate elaboration and corroborate the moderating role of elaboration as a boundary condition to the Construal Level Theory. Second, we show the importance of consumption as a benchmark to determine temporal distance. When the consumption of products is temporally separated from its purchase, consumption itself can influence consumers' temporal perception and subsequent evaluations. Third, we show that purchase goals can serve as a factor to determine

the mental construal levels of product attributes. In this case, low-level construals are not necessarily composed of the 'how' aspects of attitude objects but instead goal-distant product attributes can represent low-level construals.

GENERAL DISCUSSION

In conclusion, the findings of the two studies in the present research provide converging evidence of elaboration moderating the effects of temporal construal on evaluation. The current research uncovers the role of elaboration that determines the differential influence of temporal distance. That is, it is for those thoughtful individuals or when individuals thoughtfully think that temporal distance influences evaluations. As such, the current research presents a theoretically important boundary condition to the Construal Level Theory, ever under-researched. Unlike the automatic way it impacts on mental construal, temporal distance exerts its influence on evaluation via thoughtful processing. If the accommodation of temporal construal is performed through thoughtful processing, it is also possible to find out variables that may increase or decrease the degree of such consideration. It will be a fruitful avenue to investigate the factors that facilitate or inhibit the integration of temporal information with other valid cues for evaluation.

By using the construct of elaboration as a moderator, the current research elucidates a more accurate representation of how evaluations change across different temporal frames. Recall that the predictions of the Construal Level Theory are rather ambiguous for the near future events. At times, the theory seems to hypothesize that the near future will be construed mostly according to the specific, contextual information. For example, Trope and Liberman (2003) write, "Decisions about distant future activities were made according to desirability information, whereas the decisions about near future activities were made according to feasibility information." Such a prediction would seem to be most consistent with a cross-over interaction, in which the preferences for attitude objects would be reversed depending upon temporal distance.

When we strictly follow that logic of temporal construal, we should find the pattern in study 1 for example that the undesirable train-

ing/desirable job would be preferred to the desirable training/undesirable job when considered in the distant future, but the desirable training/undesirable job would be preferred to the undesirable training/desirable job when considered in the near future. Their findings, however, typically reveal a funneled interaction (refer to figures 1), revealing what appears to be a consideration of both general and specific information in the near future conditions. The results of the present research suggest that the funneled interaction may be the result of heterogeneity of variance (Hutchinson, Kamakura, and Lynch 2000). When the findings for the non-thoughtful and thoughtful individuals are examined individually, we find a cross-over interaction, albeit only for the thoughtful individuals. The thoughtful individuals reveal the reversal that is suggested but not typically found by the Construal Level Theory. As such, the understanding of when the influence of temporal distance on evaluation emerges provides a better understanding of the influence itself.

Although the present research provides guidance as to when the effects of temporal construal on evaluation are likely to emerge, and this understanding helps to rule out two of the three alternative explanations, it raises the issue of exactly why the thoughtful individuals' evaluations are differentially influenced as a function of temporal distance. There exist several possible explanations. As suggested by Trope and Liberman (2003), it may be that temporal distance influences the focus on the information that is elaborated, such that the near future encourages elaboration of the contextual information, whereas the far future encourages elaboration of the goal-relevant information. Of course, this differential elaboration seems to occur dominantly for the thoughtful individuals. Alternatively, it may instead be the case that temporal distance influences the confidence that thoughtful, but not non-thoughtful individuals have in their cognitive responses to attitude objects (Brinöl, Petty, and Tormala 2004). That is, it may be that individuals have less confidence in their cognitive responses when considering near future events. If so, it is possible that individuals have similar cognitive responses to the near and far events, but that the differential confidence in those thoughts leads to the observed differences in evaluation. Future research should investigate why the effects of temporal construal on evaluation emerge.

Temporal construal effects have been corroborated in a variety of contexts ranging from probabilistic judgments (Wakslak and Trope

2009), to creative thinking (Förster, Friedman, and Liberman 2004), to self-control (Fujita et al. 2006), and to social distance (Liviatan, Trope, and Liberman 2008). Despite its usefulness for understanding of many fundamental issues in human psychology, the Construal Level Theory has very sparse applications in marketing. One potential area in marketing is brand extension. One of the important factors in evaluating brand extension is perceived fit. It was found that construal level can be a moderator to the extent to which perceived fit can determine the evaluation of brand extension (Kim and John 2008). However, there are several bases that determine fit perception and thus, it is very interesting to investigate the effect of temporal construal on the relative importance of the bases of fit in brand extension. Another area that is well suited for the application of the Construal Level Theory is pricing or communication strategy for advance selling (Xie and Shugan 2001). Advance selling refers to a marketing practice in which marketers offer opportunities for consumers to make purchase commitments ahead of the time of consumption. In this case, temporal distance to “purchase” is very relevant to the investigation of temporal construal effects. As noted earlier, temporal distance is inherent in many consumer behaviors. The current research explores a rather theoretical issue but at the same time offers substantial implications for the replication or extension in a variety of marketing contexts. When segmenting markets (based on involvement for example), designing marketing communications, or predicting the effectiveness of pricing strategy, marketers can benefit from considering for whom and how to do in time-embedded decision contexts.

In the present research, we identify elaboration that tends to facilitate or limit the occurrence of the effects predicted by the Construal Level Theory. This is the first research ever that highlights the role of an individual-related variable as a moderator. However, there may be other individual-level variables that are potentially important to temporal construal. One intriguing topic derived from the Construal Level Theory is within-individual preference inconsistency that occurs when a decision taken from a distant perspective is reevaluated from a proximal perspective (Lynch and Zauberman 2007). Then preference for consistency (Cialdini, Trost, and Newsom 1995) comes in handy in the investigation of intra-individual preference inconsistency in reference to the Construal Level Theory. Future research is encouraged to conduct a com-

prehensive investigation of individual-related variables as well as specific marketing contexts that will enrich our understanding of temporal construal effects.

APPENDIX
Product Attribute Information in Study 2

TEST RESULTS

Note: Ratings provided are measured compared to other leading brands, on a 9-point scale ranging from 1 (very bad) to 9 (very good).

PROS

- Uploading: One-touch uploading function. Fastest upload software with carrying accurate picture data and extensive header data (Rating: 8)
- Interface: Simple interface with easy-to-use menu. LCD screen wide and bright enough to review picture quite well as you shoot (Rating: 7)
- Battery: Long battery life, allowing for approximately 1000 high-resolution shots taken on the included lithium battery pack. Can also run on commercial NiMH (nickel-metal hydride) AAs or alkaline AAs (Rating: 9)

CONS

- Resolution: 2-megapixel (1600×1200) CCD censor; other leading brands are mostly of 3- to 5-megapixels (Rating: 2)
- Lens Quality: Lens quality below average particularly at long focal lengths. Cannot accept special adapters to accommodate traditional photographic filters and accessory lenses (Rating: 1)
- Exposure Accuracy: Low accuracy for certain types of scene such as sports-action, moving target. Contrast and white balance acceptable but not very high (Rating: 2)

OTHERS

- Rated almost equally favorable in other important dimensions.
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