Effects of Temporal Distance and Memory on Consumer Judgments

YEUNG-JO KIM
JONGWON PARK
ROBERT S. WYER JR.*

Once a product has been evaluated for use, the circumstances can change and it must be reevaluated for use at a different time. Four experiments investigated processes underlying these reevaluations. Participants received information about a product that had implications for both desirability and the feasibility of using it, while anticipating either its immediate or future use. They were later asked to reevaluate the product for use at either the same or a different point in time. Participants who reevaluated the product for future use based their judgments on desirability considerations regardless of when they had considered using it initially. However, participants who reevaluated the product for immediate use also based their judgments on desirability considerations unless they had initially considered immediate use as well. These results were consistent with a conceptualization of consumer judgment processes that incorporated implications of research on construal level theory and on person memory and judgments.

According to construal level theory (Trope and Liberman 2003), individuals' attraction to a purchase opportunity should depend on whether they plan to take advantage of it immediately or at a later point in time. Once they have made this evaluation, however, the circumstances surrounding their ability to purchase and use the product can change. How do consumers' initial evaluations of a purchase opportunity influence their later evaluations of it, once the conditions surrounding it have been altered?

The present research attempted to answer this question. In doing so, we took into account theory and research on both temporal construal (Trope and Liberman 2003) and the mental representations that people construct of stimuli in the course of forming an impression of them (Wyer and Srull 1989). An application of these conceptualizations to consumer judgment and decision making has unique implications for the nature of the representations constructed of products under different judgment conditions and the processes surrounding their use. Thus, it contributes to the literature in several important ways.

First, previous research (e.g., Liberman and Trope 1998) has shown that consumers weight the feasibility of purchasing and using a product or service more heavily when they consider it for immediate consumption than for future consumption. We demonstrate that this effect can result not only from participants' differential attention to desirability-related versus feasibility-related features of the product but also from the way in which participants interpret individual items of information that have implications for both desirability and feasibility. Second, the effects of consumers' initial evaluations of a product on the criteria they use to reevaluate the product at a later point in time have not previously been considered. In fact, these effects are asymmetric. That is, they depend on whether consumers reevaluate a product for immediate consumption after having previously evaluated it for future consumption or, alternatively, reevaluate the product for future consumption after having previously evaluated it for immediate use.

Finally, although Trope and Liberman (2003) assume that people construct different mental representations of an activity when they consider its occurrence at different points

*Yeung-Jo Kim is research associate (kyjo2001@naver.com) and Jongwon Park is Hyundai Research Fellow Professor of marketing, both at Korea University Business School, 1 Anam-Dong, Sungbuk-Gu, Seoul, Korea (amadeus@korea.ac.kr). Robert S. Wyer Jr. is professor of marketing, University of Illinois at Urbana-Champaign, Champaign, IL 61820 (mkwyer@ust.hk). This article is based in part on the dissertation research conducted by Yeung-Jo Kim under the supervision of Jongwon Park. The authors gratefully acknowledge members of the dissertation committee and members of Korea University B.E.S.T. Marketing Lab for their valuable suggestions pertaining to the theoretical basis for the study and the interpretation of the results. The authors also thank Kyeongheui Kim, L. J. Shrum, and David Silvera for valuable inputs on earlier versions of this article, and the editor, the associate editor, and the *JCR* reviewers for their thoughtful comments and guidance. This research was supported by the Korea University Research Grant to Jongwon Park.

John Deighton served as editor and Geeta Menon served as associate editor for this article.

Electronically published April 21, 2009

in time, they did not explicitly consider the specific features of these representations and how these features are used in making subsequent judgments. We conceptualize more precisely and provide empirical evidence of the content of the representations that individuals construct when they consider a product for consumption at different points in time. Furthermore, these differences in the content of individuals' representations of the product mediate the effect of temporal distance on their reevaluations.

THEORETICAL BACKGROUND

The Impact of Temporal Perspective on Judgments

Individuals' evaluations of an action are driven not only by its intrinsic desirability but also by the feasibility of engaging in it. Construal level theory (Trope and Liberman 2003) predicts that the longer the time between one's contemplation of an activity and its anticipated occurrence, the more likely it is that the activity will be evaluated on the basis of central, context-independent features of the action (e.g., its intrinsic desirability) rather than on peripheral, situation-specific features of only short-term relevance. This tendency has been identified in a wide range of comprehension and judgment situations, including jobs, products, negotiations, and gambling (e.g., Castano et al. 2008; Eyal, Liberman, and Trope 2008; Eyal et al. 2004; Fujita et al. 2008; Henderson, Trope, and Carnevale 2006; Kim, Zhang, and Li 2008; see Trope and Liberman [2003] and Trope, Liberman, and Wakslak [2007] for reviews).

The use of these different criteria has implications for purchasing behavior. A purchase decision is generally based in part on perceptions of the product's quality and the intrinsic desirability of using it. Other considerations can surround the feasibility of acquiring and using the product. These latter considerations, however, may be specific to the situation at hand. When desirability-related and feasibility-related considerations have different implications for the decision to purchase a product, the decision is likely to depend on whether or not the purchase is imminent. Thus, for example, Liberman and Trope (1998, study 2) found that participants who considered purchasing a word processor in the near future attached importance to the feasibility of buying it and learning to use it, whereas those who contemplated purchasing it in the distant future gave greater weight to desirability-related concerns. When the implications of these criteria differ, the shift in the weight attached to these criteria can sometimes result in preference reversals (Fiedler 2007).

In summary, these considerations suggest that when consumers expect to purchase a product in the distant future, they are likely to base their evaluations on the product's intrinsic desirability. When they evaluate the product for immediate consumption, however, feasibility considerations come into play as well. As will be seen, this difference in attention to desirability-related and feasibility-related features becomes important in considering the criteria that are applied if the product is reevaluated at a later point in time.

The Role of Memory in Product Evaluations

People are likely to form different mental representations of the activity, depending on when they expect to engage in it (Trope and Liberman 2003). The features that compose these representations are particularly relevant to the judgment being made and, therefore, are thought about extensively (Craik and Lockhart 1972). Thus, a product or service that is considered for future adoption is likely to be represented in memory primarily in terms of features with implications for its intrinsic desirability. If it is considered for use in the near future, however, transitory, situation-specific features (e.g., the feasibility of purchasing and using it) may also be included in the representation. This difference is suggested by evidence that desirability concerns have the predominant influence on decisions that have implications for the future, whereas both desirability and feasibility considerations have an influence on decisions with immediate implications (Liberman and Trope 1998; Trope and Liberman 2000).

The different representations that are formed when consumers evaluate a product for consumption at different points in time become important in light of evidence that only the mental representation that is formed of a stimulus in the course of evaluating it is likely to be retained in long-term memory (Wyer and Srull 1989). Consequently, if individuals are later asked to reevaluate the product and the original information about it is no longer available in working memory, judgment-relevant features of this information that were not retained in this representation will have little effect. Several studies confirm that once individuals form an impression of a stimulus on the basis of information they receive, they use this impression as a basis for their later judgments independently of the original information that gave rise to its formation (Carlston 1980; Higgins and Lurie 1983; Lingle and Ostrom 1979; Park and Hastak 1994; Park et al. 2001; Srull and Wyer 1980). Moreover, the impact of this impression relative to that of the original information increases over time (Carlston 1980; Srull and Wyer 1980).

A theory of memory and impression formation proposed by Srull and Wyer (1989; Wyer and Srull 1989) describes the process underlying these effects (see Park and Wyer [1993] for an application of this model to consumer judgments). When persons receive information about a stimulus with the objective of making an overall impression, the representation they form consists of a central concept of the stimulus that has implications for the judgment along with a set of features that provide the basis for this concept. This representation is stored in memory.

If the individuals are later asked to make a second judgment of the stimulus for which the central concept of the representation has direct implications, they retrieve and use it as a basis for this judgment without consulting the specific features that are associated with it. If the concept is not directly applicable, however, they base their second judgment on (*a*) the evaluative implications of the concept along with (*b*) a partial review of its associated features that have more direct implications for the particular judgment at hand

(Wyer and Budesheim 1987; Wyer, Srull, and Gordon 1984; Wyer and Unverzagt 1985). Thus, the specific features of the representation come into play only if the initial concept they have formed of the stimulus is not a sufficient basis for the judgment at hand (Park and Hastak 1994; Sanbonmatsu and Fazio 1990).

The Present Conceptualization

Initial Product Evaluations. Wyer and Srull's conceptualization, in combination with the effects identified by Liberman and Trope (1998), has clear implications for the issues of concern in this article. Suppose consumers receive information about a product whose features have implications for both its intrinsic desirability and the feasibility of purchasing and using it. If they initially consider the product for consumption in the distant future, they should base their evaluation on desirability-related features and, in the process of doing so, form a representation of the product composed of (*a*) a central concept that conveys the implications of this evaluation and (*b*) the desirability-related features on which the judgment is based. If they consider the product for immediate use, however, they should consider feasibility-related features as well. Consequently, the representation they form should contain features that pertain to both feasibility and desirability. These considerations have implications for both individuals' overall evaluation of the product and the content of the representation they form of it, as inferred from their recall of the product's features:

H1: Consumers will base their evaluation of a product on desirability-related features regardless of when they anticipate purchasing and using the product. When they evaluate a product for immediate consumption, however, they will base their evaluation of it on feasibility-related considerations as well.

H2: Consumers who have evaluated a product for consumption in the distant future will recall more desirability-related features than feasibility-related features. However, consumers who have evaluated the product for immediate consumption will recall both types of features equally well.

Reevaluations of the Product. Now suppose consumers have occasion to reevaluate the product they had considered earlier. They may retrieve and use the representation they have formed of the product to use as a basis for their judgment. If they reevaluate the product for consumption at the same point in time they had considered it initially, they should base their judgment on the central concept of this representation without reviewing the specific features that are associated with it. If they had initially evaluated the product for delayed consumption but are later asked to reconsider it for immediate use, they may again evaluate the product on the basis of the initial concept they have formed of it, as the features of the representation they have formed have no implications for feasibility. If they had considered the product for immediate use initially but are later asked to consider it for future consumption, however, desirability-related features of direct relevance to the judgment are contained in the representation they have formed. In this case, therefore, they should use these features as well as their central concept of the product as a basis for their reevaluations. These considerations suggest two additional hypotheses:

H3: If consumers reevaluate a product for consumption at the same point in time that they had expected to purchase and use it earlier (either immediately or in the future), their judgment of the product will be similar to their initial judgment of it.

H4: If consumers reevaluate a product for consumption at a different point in time than they considered it earlier, their reevaluation will be influenced primarily by its intrinsic desirability. This will be true regardless of whether they initially evaluated the product for immediate consumption (and reevaluate it for future consumption) or initially evaluated it for future consumption (and reevaluate it for immediate use).

One qualification on these predictions should be noted. They assume that the original information presented about the product is no longer available in working memory when consumers are asked to reevaluate it, and so they must base their reevaluation on implications of the memory representation of the product that they formed. If features of the original information are still available in working memory, these features can be retrieved and used as a direct basis for judgments independently of this representation (Wyer and Srull 1989). To this extent, the reevaluations should be influenced in much the same way that Trope and Liberman (2003) predict and should not depend on the nature of the judgments they had made earlier.

Four experiments confirmed these hypotheses. Experiment 1 confirmed hypotheses 1 and 2. In doing so, it focused on the use of high-level and low-level features other than those pertaining to desirability and feasibility, thus providing evidence of generalizability of the judgment and representational processes we assume. Experiment 2 confirmed the findings of experiment 1 when product features pertained to desirability and feasibility, and provided support for hypotheses 3 and 4. Experiment 3 showed that the effect of feasibility-related information on reevaluation of a product increases when participants reevaluate it for consumption a short time after making their first judgment, when the original information is still in working memory. Experiment 4 confirmed our hypotheses in a different product domain and showed that reevaluations similar to those observed in earlier experiments can be mediated by differences in participants' interpretation of the individual pieces of attribute in-

formation they receive as well as their selective attention to this information.

EXPERIMENT 1

Our primary concerns in this research pertained to the use of desirability and feasibility criteria in purchasing decisions. According to temporal construal theory, however, desirability-related and feasibility-related features are exemplars of high-level and low-level attributes, respectively. To ensure that our conceptualization is not restricted to the effects of desirability and feasibility information alone, it was desirable to ensure that our assumptions were applicable to other high- and low-level attributes (e.g., central and peripheral features of a product; Trope and Liberman 2000).

Experiment 1 accomplished this. In addition, it confirmed our assumptions concerning the content of the representations that individuals form when they anticipate consumptions at different points in time. That is, consumers presumably consider high-level features of a product regardless of when they anticipate using it. When they anticipate immediate consumption, however, they theoretically consider low-level features as well. Consequently, the representation they construct when they consider a product for future consumption should contain primarily high-level features, whereas the representation they form of the product when they consider the product for immediate consumption should contain both high-level and low-level features.

Method

One hundred thirty-eight undergraduate business students were asked to consider one of two radio sets similar to those employed by Trope and Liberman (2000, experiment 3). One, sound-positive, target had four positive high-level features (i.e., good sound-related attributes) but four negative low-level features (i.e., bad built-in clock-related features) and the other, clock-positive, target had four negative high-level features but four good low-level features. In addition, each target had four neutral items that were unrelated to either sound or clock.

Participants were asked to evaluate the product for use either the next day (near-future condition) or 6 months later (distant-future condition). The ratings were indicated on a scale ranging from 1 (unsatisfactory) to 7 (satisfactory). After this, participants engaged in an activity for about 45 minutes that was unrelated to the present study. Then, they were unexpectedly asked to recall as many features of the radio set that they had examined as possible.

Results

Participants were expected to consider high-level (sound-related) features regardless of whether they planned to use the radio set immediately or in the future, but to consider low-level (clock-related) features to a greater extent in the former condition than the latter. This difference should be reflected both in participants' product evaluations and their recall of the information they received. This was in fact the case.

Target Evaluations. An analysis of target evaluations as a function of target (sound positive vs. clock positive) and temporal distance (near future vs. distant future) yielded a significant interaction of target and temporal distance ($F(1, 134) = 4.41$, $p < .05$). As implied by construal level theory (Trope and Liberman 2003) and consistent with hypothesis 1, participants who considered the product for future use evaluated the sound-positive target more favorably than the clock-positive target (3.83 vs. 3.18; $F(1, 134) = 4.18$, $p < .05$), suggesting that they attached relatively greater weight to high-level (sound-related) features than low-level (clock-related) ones. When they considered the target for immediate use, however, they evaluated the clock-positive target nonsignificantly more favorably than the sound-positive target (3.88 vs. 3.60).

Recall. The items that participants recalled were classified as sound related, clock related, or neither. The numbers of sound-related and clock-related items recalled were then analyzed as a function of item type (sound related vs. clock related) and temporal distance (near future vs. distant future). The interaction of item type and temporal distance was significant ($F(1, 135) = 4.17$, $p < .05$) and of the form implied by hypothesis 2. That is, participants who considered the product for use in the distant future recalled significantly more sound-related than clock-related features (.99 vs. .63; $F(1, 135) = 6.56$, $p < .01$), suggesting that the representation they formed of the target consisted primarily of the former features. In contrast, participants in the immediate future condition tended to recall both sound-related and clock-related features equally well (.81 vs. .86; $F < 1$). This suggests that both sound-related and clock-related features were included in the representations they formed.

EXPERIMENT 2

Experiment 1 provided evidence for our basic assumptions about the effect of temporal distance on initial evaluations of a target and memory representations formed of it. The present experiment confirmed the implications of experiment 1 using desirability-related and feasibility-related features as exemplars of high-level and low-level construals, respectively. In addition, it examined implications of these assumptions for participants' reevaluations of the product, as suggested by hypotheses 3 and 4.

Specifically, participants first considered a target for either immediate or future consumption. Then, 2 days later, they reevaluated the product for consumption at either the same point in time or a different one. We expected that participants who reevaluated the product for use at the same time they had considered it earlier would use their prior judgment as a basis for their later one. In contrast, participants who reevaluated the product for use at a different point in time should base their judgments primarily on desirability-related considerations. Furthermore, this should be true regardless of

TABLE 1

ITEMS USED AS STIMULUS INFORMATION IN EXPERIMENTS 2 AND 3

Target items	Favorableness	Desirability relevance	Feasibility relevance
Desirability-positive items:			
Built-in Internet access	6.68	6.42	1.50
Bed, TV set, and desk provided	6.37	6.17	2.08
Large living space	6.11	6.42	1.58
Individual bathroom facilities	6.63	6.67	2.17
Desirability-negative items:			
Internet access not provided	1.67	6.33	2.08
Bed, TV set, and desk not included	2.33	6.08	1.92
Limited living space	2.14	6.50	2.42
Shared bathroom facilities	1.19	6.58	2.42
Feasibility-positive items:			
Flexible moving-in date	5.00	1.83	6.67
No need for cleaning before moving in	5.63	1.67	6.50
Very close to current place of residence	4.84	2.50	6.50
Low moving expense	6.37	2.50	6.53
Feasibility-negative items:			
Inflexible moving-in date	2.24	2.33	5.92
Need for cleaning before moving in	2.95	2.08	5.42
Far from current place of residence	2.81	2.58	6.25
High moving expense	1.81	1.83	5.75

NOTE.—Higher numbers represent greater positivity in valence and greater relevance to each dimension.

whether they had initially considered the product for future use or for immediate use.

Method

Overview and Design. Participants were given information about the attributes of an off-campus apartment with instructions to evaluate it for occupancy either the next day or 6 months later. The information described the product either (*a*) positively in terms of intrinsic desirability and negatively in terms of transitory feasibility or (*b*) negatively in terms of intrinsic desirability but positively in terms of transitory feasibility. After making their initial judgments, participants returned for a second session of the experiment 48 hours later and were unexpectedly asked to reconsider the apartment they had evaluated in the first session and to reevaluate it for occupancy at either the same point in time or a different time.

One hundred fifty-one undergraduate business students participated in the experiment to fulfill a course requirement. They were randomly assigned to eight combinations of target description (desirability positive vs. feasibility positive), the anticipated time of occupancy in session 1 (next day vs. 6 months later), and the anticipated time of occupancy in session 2 (next day vs. 6 months later).

Stimulus Construction. Off-campus apartments were used as target stimuli. Pretesting was performed to select (*a*) four favorable intrinsic desirability-related features, (*b*) four unfavorable intrinsic desirability-related features, (*c*) four favorable transitory feasibility-related features and (*d*) four unfavorable transitory feasibility-related features. These items are shown in table 1 along with ratings of their favorableness, their intrinsic desirability, and their relevance to the feasibility and convenience of acquiring the apartment. These items were used to construct two target descriptions. One, desirability-positive, description consisted of four positive desirability-related features and four negative feasibility-related features. In the other, feasibility-positive, description, the favorableness of the two types of features was reversed.

Procedure, Session 1. Participants took part in two experimental sessions 48 hours apart. In session 1, each participant was seated in a separate booth and received instructions and stimulus materials on a computer. The instructions indicated that (*a*) the study was a survey on consumer evaluations of various types of products, (*b*) participants would receive a description of an off-campus apartment, (*c*) they should imagine how attractive it would be to move into it, and (*d*) they would later be asked a series of questions about the apartment based on the description they had read. With this preamble, participants were presented one of the two lists of eight features in random order with instructions to imagine that they were planning to move into the apartment either the next day (immediate-occupancy conditions) or not until 6 months later (future-occupancy conditions).

Participants spent as much time as they wished to process the target descriptions (normally about 1 minute). After doing so, they were given a questionnaire and asked to evaluate the target along three scales, ranging from 1 (unsatisfactory/dislikable/unlikely to purchase) to 7 (satisfactory/likable/likely to purchase). Participants' responses to the three items were averaged to construct a composite index of their overall evaluations ($\alpha = .94$). Then, participants were thanked, reminded of the second session of the experiment, and dismissed.

Procedure, Session 2. Upon returning 2 days later, participants were first given a short computer exercise to increase their familiarity with the use of a computer in responding to questions. After completing the exercise, participants were told that a few questions about the apartment they had considered in session 1 would appear on the screen and that they report their answer to each by pressing a number on the keyboard in a manner to be indicated.

At this point, the instructions on the computer screen diverged. When participants were asked to reconsider the apartment for occupancy at the same point in time they had considered earlier, we simply noted that consumers often reconsider their previous evaluations and that we would therefore like them to evaluate the apartment again. Participants who were asked to reconsider occupancy at a different point in time were told that consumers' purchase situations sometimes change and that we would therefore like them to evaluate the apartment for occupancy at a different time (either the next day or 6 months later, depending on the time they had considered renting the apartment in session 1). Participants indicated their evaluations along the same scale used in experiment 1 by pressing an appropriate number on the keyboard. Both participants' ratings and their response latencies were automatically recorded.

Participants were then asked to indicate the relative extent to which they based their reevaluations on their prior judgments versus the original information they could remember, along two scales ranging from 1 (used my prior judgment/mostly influenced by my prior judgment) to 7 (used the attribute information I recalled/mostly influenced by the attribute information I recalled; $r = .90$). Finally, participants were asked to recall as many features of the apartment that were described during the first session as they could remember.

Results

Evaluations, Session 1. Participants' evaluations of the apartment in session 1 were analyzed as a function of the implications of the target description (desirability positive vs. feasibility positive), the anticipated time of occupancy in session 1 (immediate vs. future), and the anticipated time of occupancy in session 2. (As expected, no effects involving the latter variable were significant.) Participants generally evaluated the desirability-positive target more favorably than the feasibility-positive target (3.91 vs. 1.91; $F(1, 143) = 122.07, p < .001$). (This may have been due to the greater favorableness of desirability-related features than feasibility-related features; see table 1.) However, the relative magnitude of this difference depended on the anticipated time of occupancy in session 1. As expected, participants evaluated the desirability-positive apartment more favorably when they considered renting it in the distant future than when they considered renting it immediately (4.11 vs. 3.71) but evaluated the feasibility-positive apartment less favorably in the former condition than the latter (1.61 vs. 2.16). Thus, the difference in evaluations of the desirability-positive and feasibility-positive apartments (an indication of the impact of desirability-related features relative to feasibility-related features) was significantly greater when the apartment was considered for future occupancy ($M_{diff} = 2.50$) than when it was considered for immediate occupancy ($M_{diff} = 1.55$), as evidenced by an interaction of target description and session 1 occupancy time ($F(1, 143) = 6.66$, $p < .05$). No other effects were significant ($F < 1$).

Evaluations, Session 2. Participants' evaluations of the apartment in session 2 were analyzed as a function of target descriptions (desirability positive vs. feasibility positive), the anticipated time of occupancy in session 1 (immediate vs. future) and the anticipated time of occupancy in session 2 (immediate vs. future). Participants generally evaluated the desirability-positive target more favorably than the feasibility-positive target (4.20 vs. 1.92; $M_{diff} = 2.28$; $F(1, 143) = 153.01$, $p < .001$). As noted in table 1, however, desirability-related features were generally more favorable than feasibility-related features. Thus, the generally greater impact of the former features on judgments may have resulted from this difference independently of the weight attached to them.

Of greater importance is the interaction of the target description and the anticipated time of occupancy in session 2 ($F(1, 143) = 5.74, p < .05$) and a three-way interaction of these variables and the anticipated time of occupancy in session 1 ($F(1, 143) = 5.17, p < .05$). Data pertaining to the latter interaction, summarized in table 2, are consistent with expectations. The relative impact of desirability-related features, as reflected in the difference in evaluations of desirability-positive and feasibility-positive apartments, was substantially less when participants considered the apartment for immediate use in both sessions ($M_{diff} = 1.46$) than under any of the other three combinations of session 1 occupancy time and session 2 occupancy time (pooled over these conditions, $M_{diff} = 2.60$; $F(1, 143) = 6.85, p < .01$). This suggests that feasibility-related features had appreciable influence on judgments in the former condition, whereas desirability-related features had a much more predominant impact in the other three conditions.

Direct comparisons of apartment evaluations in the two sessions provide further support for our hypotheses. The third section of table 2 shows the difference between the relative impact of desirability-related features in session 2 and their relative impact in session 1. When participants who had evaluated the apartment for immediate occupancy in session 1 evaluated it for future occupancy in session 2, they presumably reviewed desirability-related features in the representation they had formed and used them as a basis for judgment. Consequently, the relative impact of desirability-related features significantly increased in this condition, as expected (from 1.79 to 3.15, $M_{diff2-diff1} = 1.36$; $F(1, 143) = 23.66$, $p < .001$). This was due both to an increase in evaluations of the desirability-positive product (from 3.95 to 4.88; $F(1, 143) = 21.18, p < .001$) and a decrease in evaluations of the feasibility-positive target (from 2.16 to 1.73; $F(1, 143) = 5.04, p < .05$). In other conditions, participants

TABLE 2

DEPENDENT MEASURES AS A FUNCTION OF TEMPORAL DISTANCE IN SESSION 1 AND SESSION 2 (EXPERIMENT 2)

	Immediate, session 1		Future, session 1	
Dependent measures/target profile	Immediate, session 2	Future, session 2	Immediate, session 2	Future, sessions 2
Stimulus-based evaluations, session 1:				
Desirability-positive target	3.47	3.95	4.11	4.11
Feasibility-positive target	2.15	2.16	1.59	1.64
$Diff_1$	1.32	1.79	2.52	2.47
Memory-based evaluations, session 2:				
Desirability-positive target	3.53	4.88	4.13	4.24
Feasibility-positive target	2.08	1.73	1.91	1.97
$Diff_2$	1.46	3.15	2.22	2.27
Change in the relative impact of desirability-related features over sessions:				
($Diff_2 - Diff_1$)	$.14_a$	1.36_b	$-.30_a$	$-.20_a$
Response time, session 2 evaluations (seconds)	10.0_a	13.8_b	10.9_a	9.5_a
Influence of attribute information for evaluations, session 2	3.76_a	5.13_b	4.39_a	4.08_a
Recall of target items:				
Desirability-related items	1.90	2.41	2.17	2.11
Feasibility-related items	1.64	1.49	1.33	1.51
Diff	$.26_a$	$.92_b$	$.84_b$	$.60_{ab}$

NOTE.—Cells with uncommon subscripts within a row differ from each other at $p < .05$.

were expected to use the central concept of the representation they had formed in session 1 as a basis for their evaluations. In these conditions, the relative impact of desirability-related and feasibility-related features on evaluations remained virtually unchanged ($p > .10$ in all cases).

Response Latencies, Session 2. According to our conceptualization, participants who considered the apartment for occupancy at the same time in both experimental sessions should retrieve and use their judgment in the earlier session as a basis for their later one. When participants considered the apartment for use at a different time, however, they were expected to review the content of the representation they had formed. This should increase the time required to make a judgment, particularly if the relevant features are found in the representation and thus actually retrieved and integrated to form the judgment.

Analyses of response latencies, summarized in the fourth section of table 2, supported this hypothesis. The interaction of session 1 occupancy time and session 2 occupancy time was significant ($F(1, 143) = 7.56$, $p < .01$) and is attributable to the fact that participants took longer to report their evaluations when they reconsidered using the apartment at a different point in time than they had considered using it initially ($M = 12.4$ seconds) than when they reconsidered using it for occupancy at the same point in time ($M = 9.7$ seconds). This difference was largely due to the longer time that participants took to reevaluate the apartment for future occupancy after having previously evaluated it for immediate use earlier ($M = 13.8$ seconds). The time required to make evaluations when participants reevaluated the apartment for immediate use after having evaluated it for future occupancy initially was fairly short ($M = 10.9$ seconds), however. This suggests that when feasibility-related features were not contained in the representation and an integration of their implications with desirability-related features was unnecessary, little additional time was required to make a judgment.

Perceived Use of Attribute Information. Participants' reports of their use of the attribute information (vs. their prior judgments) as a basis for evaluations in session 2 confirmed the conclusions drawn from response time data. Analyses of these responses yielded a significant interaction of session 1 occupancy time and session 2 occupancy time ($F(1, 143) = 9.18$, $p < .005$). These judgments, summarized in the fifth section of table 2, indicate that participants reported basing their judgments on attribute information to a greater extent when they reevaluated the apartment for future occupancy after having initially considered it for immediate occupancy ($M = 5.13$) than in the other three conditions combined ($M = 4.08$; $F(1, 143) = 11.44$, $p < .001$), whereas the information they reported using in the latter conditions did not differ ($p > .10$ in all cases). Although conclusions based on self-report data should be treated with caution, the consistency of these data with implications of our conceptualization is worth noting.

Recall of Target Information. Participants' recall protocols were scored by two independent judges according to a gist criterion. That is, items were scored as correct if they generally conveyed the same idea as the original item regardless of specific wording. Interjudge agreement was

89.5% for this coding. Disagreements were resolved through discussion.

The mean numbers of desirability-related and feasibility-related features recalled in each condition are shown in the last section of table 2 as a function of item type (desirability related vs. feasibility related), session 1 occupancy time, and session 2 occupancy time. Participants were generally more likely to recall desirability-related items than feasibility-related items (2.15 vs. 1.50; $M_{diff} = .65$; $F(1, 143) = 35.0$, $p < .001$). However, this difference was qualified by a significant three-way interaction of item type, session 1 occupancy time, and session 2 occupancy time ($F(1, 143) = 4.16$, $p < .05$), as implied by hypotheses 2–4.

Participants recalled more desirability-related features than feasibility-related features if they had considered the apartment for future occupancy either initially (2.14 vs. 1.42, respectively, $M_{diff} = .72$; $F(1, 143) = 20.50$, $p < .001$), or later (2.41 vs. 1.49, respectively, $M_{diff} = .92$; $F(1, 143) = 18.04$, $p < .001$). When participants considered renting the apartment for immediate occupancy at both points in time, however, this difference was small ($M_{diff} = .26$) and was significantly less than the difference observed in any of the other three conditions combined ($M_{diff} = .79$; $F(1, 143) = 4.44$, $p < .05$).

EXPERIMENT 3

Experiment 2 confirmed the hypothesized effects of temporal distance on participants' product reevaluations and the processes we assumed to underlie them. As we noted earlier, however, our hypotheses assume that participants base their reevaluations on a mental representation they form of the product in the course of making their initial judgments. If participants reconsider their initial evaluations when this information is still in working memory, they should be able to consult this information directly for use in making their reevaluation. Then, their initial evaluations of the apartment should have little effect. Experiment 3 examined this possibility.

Method

One hundred twenty-seven male and female undergraduate business students participated in the experiment as a part of course requirements. The design of the study, stimulus materials, and procedure were identical to those employed in experiment 2 with two exceptions. First, the experiment was run in a single session and the delay between the initial judgment and the second judgment was only 3 minutes, during which time participants performed an unrelated brand name recognition test. Second, instead of asking participants after making their second judgments to recall the product information they had received, we gave them 1 minute to write down the thoughts or feelings that came to mind while they were making their evaluations. Each listed thought was later classified by two independent judges as desirability related, feasibility related, or other. The interjudge reliability was 87%, and disagreements were resolved through discussion.

Results

Initial Evaluations. Participants' initial evaluations of the target product were analyzed as a function of target description (desirability positive vs. feasibility positive) and the time of occupancy that participants were initially told to assume. These data confirmed results of the first experiment. As in experiment 2, participants evaluated the desirability-positive target more favorably than the feasibility-positive target (4.46 vs. 2.48; $F(1, 123) = 54.85$, $p < .001$). As shown in table 3, however, this difference was more pronounced when participants anticipated renting the apartment 6 months later (4.84 vs. 2.31; $M_{diff} = 2.53$) than when they anticipated renting it immediately (4.00 vs. 2.71; $M_{diff} = 1.29$; $F(1, 123) = 5.77$, $p < .05$), as expected. Thus, feasibility information had a relatively greater impact in the latter condition than the former.

Second Evaluations. In this study, unlike experiment 2, both desirability-related and feasibility-related features of the original information were likely to remain in working memory at the time participants were asked to reevaluate the apartment. To this extent, participants should use the features they consider to be relevant to their reevaluation as a basis for their judgment, and their initial evaluation should have little effect.

This was the case. Participants' second evaluations of the apartment are summarized in the second section of table 3 as a function of target description and the two occupancy time manipulations. Participants evaluated the desirability-positive target more favorably than the feasibility-positive target (4.27 vs. 2.41, $M_{diff} = 1.86$; $F(1, 119) = 51.51$, $p < .001$). However, this difference was significantly greater when they considered future occupancy at the time of reevaluations (4.82 vs. 2.06; $M_{diff} = 2.76$) than when they considered immediate occupancy (3.67 vs. 2.69; $M_{diff} = .98$; $F(1, 119) = 11.68$, $p < .001$). More important, this interaction was not contingent upon the time that participants had considered occupancy earlier ($F(1, 119) = 1.88$, $p > .10$). Thus, in contrast to experiment 2, the relative impact of desirability-related features on product reevaluations depended on when they anticipated occupying the apartment at the time they reevaluated it regardless of when they had anticipated occupying the apartment earlier.

Changes in Evaluations over Time. Direct comparisons of participants' target evaluations at the two points in time provide further support for our assumptions. As shown in the third section of table 3, when participants had initially anticipated immediate occupancy at time 1, their anticipation of future occupancy at time 2 significantly increased the relative impact of desirability-related features, as reflected by an increase in the difference between evaluations of the desirability-positive and the feasibility-positive targets (from 1.55 to 2.40, $M_{diff2-diff1} = .85$; $F(1, 119) = 6.31$, $p < .05$).

TABLE 3

EVALUATIONS AND THOUGHT PROTOCOLS IN SESSION 2 AS A FUNCTION OF TEMPORAL DISTANCE AT TIME 1 AND TIME 2 (EXPERIMENT 3)

	Immediate, time 1		Future, time 1	
Dependent measures/target profile	Immediate, time 2	Future, time 2	Immediate, time 2	Future, time 2
Stimulus-based judgments (time 1):				
Desirability-positive target	3.93	4.07	4.40	5.25
Feasibility-positive target	2.92	2.52	2.53	2.07
$Diff_1$	1.01	1.55	1.87	3.18
Memory-based judgments (time 2):				
Desirability-positive target	3.68	4.47	3.65	5.17
Feasibility-positive target	2.35	2.07	3.03	2.06
$Diff_2$	1.33	2.40	.62	3.11
Change in the relative impact of desirability-related features over two points in time:				
($Diff_2 - Diff_1$)	$.32_a$	$.85_b$	-1.25_b	$-.07_a$
Number of thought protocols, time 2:				
Desirability-related items	.88	1.07	.94	1.35
Feasibility-related items	.96	.37	.83	.55
Diff	$-.08_a$	$.70_b$	$.11_a$	$.80_b$

NOTE.—Cells with uncommon subscripts within a row differ from each other at $p < .05$.

Correspondingly, when participants had first considered the apartment for future occupancy, their subsequent consideration of it for immediate occupancy decreased this difference (from 1.87 to 0.62, $M_{diff2-diff1} = -1.25$; $F(1, 119) = 17.06$, $p < .001$). On the other hand, when participants contemplated occupying the apartment at the same time they had considered it earlier, the effect of target descriptions hardly changed at all ($F < 1$ in all cases).

Thought Protocols. The number of desirability-related and feasibility-related thoughts that participants generated are summarized in the last section of table 3. Participants' thoughts were more often related to desirability than to feasibility (1.06 vs. .68; $F(1, 116) = 9.37$, $p < .005$). However, this difference was significantly less when participants expected to occupy the apartment immediately at time 2 (0.91 vs. 0.89) than when they expected to occupy it in the distant future at time 2 (1.21 vs. 0.46), as evidenced by a significant interaction of thought type and occupancy time at time 2 ($F(1, 116) = 8.56$, $p < .005$). As expected, however, this interaction did not depend on the time participants had initially anticipated occupying the apartment at time 1 ($F < 1$).

Discussion

Participants in this experiment reconsidered their initial evaluations shortly after they initially evaluated the apartment. In this case, the original target information was still in working memory and so participants could use it as a basis for their reevaluation regardless of when they had initially anticipated occupying the apartment. Consequently, in contrast to experiment 2, their initial evaluations of the apartment had little effect on their reevaluations.

EXPERIMENT 4

The effect of temporal distance on the impact of desirability-related and feasibility-related information in the first three experiments was due largely to its effect on participants' perceptions of the relevance of the two types of information and, therefore, the attention that they paid to the information at the time of judgment. In these studies, the information items had clear implications for either desirability or feasibility but not both. In many instances, however, the same piece of information may have implications for both desirability and feasibility. In such cases, participants are likely to interpret the information in a manner that is most relevant to their objectives at the time. Thus, for example, they may consider its implications for intrinsic desirability alone if they are considering the product for use in the distant future but may construe its implications for feasibility as well if they are considering it for use in the near future. Such interpretive differences are reflected in the mental representation that participants form, however, and so they should produce results similar to those observed in experiment 2. Experiment 4 confirmed this possibility.

Method

Participants in this experiment evaluated an online banking service plan on the basis of an attribute, "Increased security checking levels for online banking transactions to verify the authentic user," that had implications both for desirability (safety) and feasibility (inconvenience). To verify our assumptions about the implications of this attribute, 43 students were asked to describe either the broad implications of this feature (high-level construal conditions) or its concrete implications (low-level construal conditions; see Trope and Liberman [2000] for a similar procedure), and

then to evaluate the favorableness of the description they provided along a scale from 1 (unfavorable) to 9 (favorable). Participants' descriptions concerned safety more frequently than inconvenience in the high-level construal condition (.90 vs. .24) but concerned safety and inconvenience equally frequently in the low-level construal condition (.77 vs. .68), as evidenced by a significant interaction of response type and construal level ($F(1, 41) = 24.11$, $p < .01$). Consequently, the description was more favorable in the former condition than in the latter (7.25 vs. 4.05; $F(1, 41) = 57.31$, $p < .001$).

Eighty students participated in the main study in two sessions 48 hours apart. They were initially asked to consider the banking service plan for adoption either next day or 6 months later. After 48 hours, participants returned for session 2 and reevaluated the service plan for adoption either at the same point in time or a different time along scales similar to those employed in earlier experiments. Finally, they wrote down the thoughts they had while making their evaluations.

Results

Evaluations, Session 1. We expected that participants in session 1 would interpret the service plan primarily in terms of safety if they considered it for future adoption but would focus on its implications for inconvenience as well if they considered the plan for immediate adoption. Thus, we expected that participants would evaluate the plan more favorably in the first condition than the second. This was in fact the case. Participants evaluated the service plan more favorably when they anticipated adopting it in the future than when they anticipated doing so immediately (5.44 vs. 4.68; $F(1, 78) = 8.61$, $p < .005$), suggesting that participants in the latter case were likely to interpret the target information in terms of inconvenience as well as safety.

Evaluations, Session 2. Participants' evaluations of the service plan in session 2 were also consistent with expectations. That is, the interaction of session 1 adoption time and session 2 adoption time was significant ($F(1, 76) = 4.75$, $p < .05$) and of a form similar to that observed in experiment 2 under analogous conditions. That is, participants who had initially considered the service plan for immediate adoption evaluated it less favorably when they reconsidered it for immediate adoption than when they reconsidered it for future adoption (3.96 vs. 5.09; $F(1, 76) = 9.54$, $p < .005$). However, participants who had initially considered the plan for future adoption reevaluated it favorably regardless of whether they reevaluated it for immediate adoption or future adoption (5.10 vs. 5.15; $F < 1$). Thus, the reevaluations reported by participants who anticipated adopting the service immediately in both sessions were less favorable ($M = 3.96$) than the reevaluations reported by participants in the other three conditions combined ($M = 5.11$; $F(1, 78) = 15.20$, $p < .001$), which did not appreciably differ from one another ($F < 1$).

Thought Protocols. Participants' protocols were classified by independent judges as desirability related, feasibility related, or other (the interjudge reliability was 85%). An analysis of the number of desirability-related (safety) and feasibility-related (inconvenience) thoughts that participants generated were analyzed as a function of the experimental variables yielded a significant three-way interaction of thought type, session 1 adoption time, and session 2 adoption time ($F(1, 70) = 4.76$, $p < .05$). Consistent with expectations, the number of safety-related thoughts did not differ over conditions ($p > .10$). However, inconvenience-related thoughts were more common when participants had considered the service for immediate use in both sessions ($M = 1.43$) than in the other three conditions combined ($M = .40$; $F(1, 70) = 19.16$, $p < .001$), whereas the number of such thoughts generated in the latter three conditions did not differ ($F < 1$).

Mediation Analysis. To determine whether the impact of adoption time on participants' target evaluations was mediated by its effect on the type of thoughts they had about the target, the difference between the number of safety-related thoughts and inconvenience-related thoughts was computed and used as a covariate in an analysis of target evaluations as a function of the two adoption times. The effect of the covariate was significant ($F(1, 69) = 3.95$, $p < .05$) and including it reduced the interaction of session 1 adoption time and session 2 adoption time to nonsignificance ($F(1, 69) = 2.28$, $p > .10$). This suggests that the effect of our manipulations on target evaluations in session 2 was mediated by its influence on thought processes in the manner we assumed.

GENERAL DISCUSSION

Consumers weight the feasibility of purchasing and using a product or service more heavily when they consider it for immediate consumption than when they do not. This finding, which is consistent with construal level theory (Trope and Liberman 2003), is not too surprising. However, the effect of these initial assessments on the criteria that consumers use if they are called upon to reevaluate the product at a later point in time had not previously been considered. As the present research indicates, these effects are asymmetric. If consumers have previously considered a product for future consumption and have based their assessment primarily on its intrinsic desirability, they maintain this evaluation if they later reconsider it for immediate consumption. When consumers initially evaluate a product for immediate consumption, however, they presumably take the feasibility or convenience of using it into account. Nevertheless, they are apt to change their basis for evaluating the product if they later reconsider it for future consumption instead.

In examining the processes that underlie the effects we identified, we extended construal level theory in several ways. First, we demonstrated that the effects of temporal distance on judgments can result not only from participants' differential attention to desirability-related versus feasibil-

ity-related features of the product they are evaluating (experiments 2 and 3). It can also result from the way in which participants interpret individual items of information that have implications for both desirability and feasibility (experiment 4).

Second, we obtained evidence of the nature of the mental representations that individuals form from the information they receive when they evaluate a product for consumption at different points in time and of how these representations are used when they reconsider the product some time later. In particular, the representation that individuals form of a product in the course of considering it for immediate use consists of both desirability-related and feasibility-related features, whereas the representation they form when they consider it for future use consists primarily of desirability-related features. We attained support for these differences using both measures of memory (in experiments 1 and 2) and thought protocols (in experiments 3 and 4), and demonstrated that these differences in the content of individuals' representations of the product mediated the effect of temporal distance on their evaluations.

Trope and Liberman (2003) also assumed that people construct different mental representations of an activity when they consider its occurrence at different points in time. However, they did not explicitly consider the specific features of these representations and how these features are used in making judgments. By applying previous research and theory on the mental representations formed in the course of forming an impression (Park and Wyer 1993; Srull and Wyer 1989; Wyer and Srull 1989), we were able to conceptualize more precisely the content of the representations that individuals construct when they consider a product for consumption at different points in time and the processes surrounding their subsequent use in evaluating the product.

In this regard, our analysis assumes that consumers do not reevaluate the product until some time after their initial judgment has been made and features of the original information are no longer available in working memory. If the interval between judgments is short, and the original information is still available, individuals may retrieve and use it independently of the representation they initially formed in making their first judgment, as suggested by the results of experiment 3.

The effect of initial judgments on later judgments was assumed to depend on the accessibility of these judgments in memory. In many instances, these judgments, or the concepts formed on the basis of them, are more accessible than the original information on which they are based (Carlston 1980; Higgins and Lurie 1983; Park and Kim 2005; but see Dick, Chakravarti, and Biehal [1990] for an exception). However, individuals do not rely exclusively on their initial judgments when making later evaluations. In our research, for example, participants who reevaluated the product for use at a different time than they had evaluated it earlier considered the specific features contained in their representation of the product as well as the concept that provided a basis for their initial judgment. This finding is consistent with other evidence that people often consider other information available in memory when their previous judgments are insufficient (e.g., Park and Hastak 1994; Sanbonmatsu and Fazio 1990; for a more general discussion of initial judgment effects in consumer research, see Kardes [1986]).

Alternative interpretations are called into question by our results. For example, one might argue that immediate events are thought about more extensively than future events. If this were the case, however, the difference in processing would be reflected in the recall of the information that was processed. In fact, the total number of recalled items did not differ over conditions (also see Liberman, Trope, and Wakslak 2007).

There are, nevertheless, limitations to the specific conclusions we have drawn. There are certainly instances in which feasibility considerations play a greater role in evaluating a future activity than an immediate one. (A woman who has recently discovered she is pregnant, for example, is more likely to be concerned about the feasibility of a camping trip 9 months in the future than a trip in 2 weeks.) Although the nature of these exceptions should be circumscribed, the general conceptualization we have proposed should be applicable to these conditions as well.

The implications of our conceptualization for reevaluations along other dimensions of psychological distance are worth exploring. Construal level theory theoretically applies to the effects of social distance and geographical distance as well as temporal distance (e.g., Kardes, Cronley, and Kim 2006; Kim et al. 2008; Liberman, Trope, and Stephan 2007; Liviatan, Trope, and Liberman 2008). Caution should be taken in treating variation along these dimensions as conceptually identical (Zhang and Wang 2009). It is nonetheless interesting to speculate, for example, that reevaluations of a birthday gift for one's spouse that one initially considered giving to a colleague at work might be conceptualized in a manner similar to the reevaluations we have investigated.

Still other possibilities are worth considering. For example, desirability-related features of a future event might be more easily imagined than feasibility-related features, whereas feasibility-related features of an immediate event might come to mind quite easily (Herzog, Hansen, and Wänke 2007). Given the abundant evidence that ease of processing mediates evaluative judgments (see Schwarz [2004] for a review), the role of this difference in the present research might be worth examining. Furthermore, events that are psychologically (socially, temporally, or physically) proximal may elicit more vivid images (Nisbett and Ross 1980) and elicit more intense emotional reactions. These factors could also play a role in the sorts of effects we have observed. The effects of an initial evaluation of a proximal or distal event on its subsequent reevaluation could depend in part on the nature of these reactions. Although a detailed analysis of these possibilities is beyond the scope of this article, the possibilities are worthy of theoretical and empirical inquiry.

REFERENCES

Carlston, Donal E. (1980), "The Recall and the Use of Traits and Events in Social Inference Processes," *Journal of Experimental Social Psychology*, 16 (4), 303–28.

Castano, Raquel, Mita Sujan, Manish Kacker, and Harish Sujan (2008), "Managing Uncertainty in the Adoption of New Products: Temporal Distance and Mental Simulation," *Journal of Marketing Research*, 45 (June), 320–36.

Craik, Fergus I. M. and Robert S. Lockhart (1972), "Levels of Processing: A Framework for Memory Research," *Journal of Verbal Learning and Verbal Behavior*, 11 (6), 671–84.

Dick, Alan, Dipankar Chakravarti, and Gabriel Biehal (1990), "Memory Based Inferences during Consumer Choice," *Journal of Consumer Research*, 17 (June), 82–93.

Eyal, Tal, Nira Liberman, and Yaacov Trope (2008), "Judging Near and Distant Virtue and Vice," *Journal of Experimental Social Psychology*, 44 (4), 1204–9.

Eyal, Tal, Nira Liberman, Yaacov Trope, and Eva Walther (2004), "The Pros and Cons of Temporally Near and Distant Action," *Journal of Personality and Social Psychology*, 86 (6), 781–95.

Fiedler, Klaus (2007). "Construal Level Theory as an Integrative Framework for Behavior Decision-Making," *Journal of Consumer Psychology*, 17 (2), 101–6.

Fujita, Kentaro, Tal Eyal, Shelly Chaiken, Yaacov Trope, and Nira Liberman (2008), "Influencing Attitudes toward Near and Distant Objects," *Journal of Experimental Social Psychology*, 44 (3), 562–72.

Henderson, Marlone D., Yaccov Trope, and Peter J. Carnevale (2006), "Negotiation from a Near and Distant Time Perspective," *Journal of Personality and Social Psychology*, 91 (4), 712–29.

Herzog, Stefan M., Jochim Hansen, and Michaela Wänke (2007), "Temporal Distance and Ease of Retrieval," *Journal of Experimental Social Psychology*, 43 (3), 483–88.

Higgins, E. Tory and L. Lurie (1983), "Context, Categorization, and Recall: The 'Change-of-Standard' Effect," *Cognitive Psychology*, 15, 525–47.

Kardes, Frank R. (1986), "Effects of Initial Product Judgments on Subsequent Memory-Based Judgments," *Journal of Consumer Research*, 13 (June), 1–11.

Kardes, Frank R., Maria L. Cronley, and John Kim (2006), "Construal-Level Effects on Preference Stability, Preference-Behavior Correspondence, and the Suppression of Competing Brands," *Journal of Consumer Psychology*, 16 (2), 135–44.

Kim, Kyeongheui, Meng Zhang, and Xiuping Li (2008), "Effects of Temporal and Social Distance on Consumer Evaluations," *Journal of Consumer Research*, 35 (December), 706–13.

Liberman, Nira and Yaacov Trope (1998), "The Role of Feasibility and Desirability Considerations in Near and Distant Future Decisions: A Test of Temporal Construal Theory," *Journal of Personality and Social Psychology*, 75 (1), 5–18.

Liberman, Nira, Yaacov Trope, and E. Stephan (2007), "Psychological Distance," in *Social Psychology: Handbook of Basic Principles*, Vol. 2, ed. Arie W. Kruglanski and E. Tory Higgins, New York: Guilford, 353–83.

Liberman, Nira, Yaacov Trope, and Cheryl Wakslak (2007), "Construal Level Theory and Consumer Behavior," *Journal of Consumer Psychology*, 17 (2), 113–17.

Lingle, John H. and Thomas M. Ostrom (1979), "Retrieval Selectivity in Memory-Based Impression Judgments," *Journal of Personality and Social Psychology*, 37 (2), 180–94.

Liviatan, Ido, Yaacov Trope, and Nira Liberman (2008), "Interpersonal Similarity as a Social Distance Dimension: Implications for Perception of Others' Actions," *Journal of Experimental Social Psychology*, 44 (5), 1256–69.

Nisbett, Richard E. and Lee D. Ross (1980), *Human Inference: Strategies and Shortcomings of Social Judgments*, Englewood Cliffs, NJ: Prentice Hall.

Park, Jongwon and Manoj Hastak (1994), "Memory-Based Product Judgments: Effects of Involvement at Encoding and Retrieval," *Journal of Consumer Research*, 21 (December), 534–47.

Park, Jongwon and JungKeun Kim (2005), "The Effects of Decoys on Preference Shifts: The Role of Attractiveness and Providing Justification," *Journal of Consumer Psychology*, 15 (2), 94–107.

Park, Jongwon and Robert S. Wyer Jr. (1993), "The Cognitive Organization of Product Information: Effects of Attribute Category Set Size on Information Recall," *Journal of Consumer Psychology*, 2 (4), 329–57.

Park, Jongwon, Song-Oh Yoon, Kyeoung-Heui Kim, and Robert S. Wyer (2001), "Effects of Priming a Bipolar Attribute Concept on Dimension versus Concept-Specific Activation of Semantic Memory," *Journal of Personality and Social Psychology*, 81 (3), 405–20.

Sanbonmatsu, David M. and Russel H. Fazio (1990), "The Role of Attitudes in Memory-Based Decision Making," *Journal of Personality and Social Psychology*, 59 (4), 614–22.

Schwarz, Norbert (2004), "Metacognitive Experiences in Consumer Judgment and Decision Making," *Journal of Consumer Psychology*, 14 (4), 332–48.

Srull, Thomas K. and Robert S. Wyer (1980), "Category Accessibility and Social Perception: Some Implications for the Study of Person Memory and Interpersonal Judgments," *Journal of Personality and Social Psychology*, 38 (6), 841–56.

——— (1989), "Person Memory and Judgment," *Psychological Review*, 96 (1), 58–82.

Trope, Yaacov and Nira Liberman (2000), "Temporal Construal and Time-Dependent Changes in Preference," *Journal of Personality and Social Psychology*, 79 (6), 876–89.

——— (2003), "Temporal Construal," *Psychological Review*, 110 (3), 403–21.

Trope, Yaacov, Nira Liberman, and Cheryl Wakslak (2007), "Construal Levels and Psychological Distance: Effects on Representation, Prediction, Evaluation, and Behavior," *Journal of Consumer Psychology*, 17 (2), 83–95.

Wyer, Robert S. and Thomas Lee Budesheim (1987), "Person Memory and Judgments: The Impact of Information That One Is Told to Disregard," *Journal of Personality and Social Psychology*, 53 (1), 14–29.

Wyer, Robert S. and Thomas K. Srull (1989), *Memory and Cognition in Its Social Contexts*, Hillsdale, NJ: Erlbaum.

Wyer, Robert S., Thomas K. Srull, and Sallie Gordon (1984), "The Effects of Predicting a Person's Behavior on Subsequent Judgments," *Journal of Experimental Social Psychology*, 20 (1), 29–46.

Wyer, Robert S. and William H. Unverzagt (1985), "Effects of Instructions to Disregard Information on Its Subsequent Recall and Use in Making Judgments," *Journal of Personality and Social Psychology*, 48 (3), 533–49.

Zhang, Meng and Jing Wang (2009). "Psychological Distance Asymmetry: The Spatial Dimension vs. Other Dimensions," unpublished manuscript, Chinese University of Hong Kong.