Construal Levels and Psychological Distance: Effects on Representation, Prediction, Evaluation, and Behavior

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Construal level theory (CLT) is an account of how psychological distance influences individuals' thoughts and behavior. CLT assumes that people mentally construe objects that are psychologically near in terms of low-level, detailed, and contextualized features, whereas at a distance they construe the same objects or events in terms of high-level, abstract, and stable characteristics. Research has shown that different dimensions of psychological distance (time, space, social distance, and hypotheticality) affect mental construal and that these construals, in turn, guide prediction, evaluation, and behavior. The present paper reviews this research and its implications for consumer psychology.

One of the primary aims of consumer psychology is to understand the way in which individuals evaluate objects and events. Numerous studies have led to an understanding that evaluations are driven not only by the quality and desirability of an object, but also by a variety of less central factors. What, then, determines the type of factors that will be most influential in determining choice at any given point? Construal level theory (CLT), a recent framework linking distance and abstraction, suggests that psychological distance is one important determinant of whether primary, essential characteristics or secondary, peripheral characteristics are used as the basis of evaluation. The current paper describes this framework in more detail, explaining its basic theoretical approach and reviewing a range of related empirical findings. We begin by providing more precise definitions of the terms "level of construal" and "psychological distance," and then use these constructs to examine shifts in representation, prediction, evaluation, and behavior.

LEVEL OF CONSTRUAL

According to CLT, individuals use concrete, low-level construals to represent near events and abstract, high-level construals to represent distant events. Low-level construals are relatively unstructured, contextualized representations that include subordinate and incidental features of events. High-level construals, in contrast, are schematic, decontextualized representations that extract the gist from the available information. These construals consist of a few superordinate core features of events. Thus, whereas representations of near future events are rich in details, some of which are incidental or peripheral, representations of distant events achieve abstraction by omitting secondary and incidental features.

Consider, for example, two children playing catch with a ball in a backyard. A low-level construal of this activity might include such details as the age of the children, the color of the ball, and the temperature outside. In contrast, a high-level construal of this activity might simply be "having fun." Note what happens when we move from one depiction to the other. The high-level construal, "having fun," disregards the unique features of the event and involves an implicit decision about which features are central to the

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event and which are peripheral. Of course, given a different context or goal, the event could be represented in a different high-level manner. For instance, if the children were supposed to be studying but instead were playing, the activity of playing ball could be abstractly perceived as "wasting time." Regardless of the particular abstract conceptualization chosen, moving to the abstract level involves omitting features that are perceived as less important to the abstract construct in question; at the same time, this decontextualization links the activity with a more general set of events, bringing in new meaning and definition that is not included in the low-level representation.

Of course, the process of abstraction is not an all-or-none phenomenon. The more unique and incidental features omitted, the more abstract and schematic the representation becomes. Thus, many categorization schemes are organized hierarchically, including object categorization (e.g., recliner – chair – furniture), trait categorization (e.g., plays the piano – musical – talented), and goal-directed action categorization (e.g., reading a textbook – doing well on an exam – succeeding academically). As one moves to higher levels in the hierarchy, representation is increasingly less specific and more abstract.

Again, CLT's basic premise is that the more psychologically distant an event is, the more it will be represented at higher levels of abstraction. An event is in some manner psychologically distant whenever it is not part of one's direct experience; inasmuch as there are multiple dimensions along which an event can be removed from direct experience, there are multiple dimensions of psychological distance. For example, an event is more psychologically distant as it takes place farther into the future, as it occurs in more remote locations, as it is less likely to occur, and as it happens to people less and less like oneself. Therefore, the greater the temporal, spatial, hypothetical, or social distance from an event, the more distant it appears and the more abstractly we would expect it to be represented (see Liberman, Trope, & Stephan, [2007], for a more detailed discussion).

This hypothesized relationship between psychological distance and abstraction may be a result of the association that exists between direct experience and event information. When something occurs in the "here and now" we tend to have a lot of information about it (we are, after all, currently experiencing it), and we therefore think of it in concrete, low-level terms that make use of the rich and contextualized detail that is available. Typically, as an event is further removed from direct experience (i.e., is more distant), we have less available and reliable information about it, leading to the formation of a more abstract and schematic representation of the event. CLT thus assumes that an association forms between psychological distance and abstraction, and that this association is overgeneralized so that it influences representation even in situations where there is equivalent information about near and distant events. Thus, we would expect to see a relationship between distance and construal even when the amount and reliability of information is constant.

We now move from describing the basic premise of CLT to reviewing research in support of it. Because our exploration of these ideas originated with a particular focus on temporal distance (see Liberman & Trope, 1998), we start by reviewing findings linking construal and temporal distance; we then expand to describe recent evidence showing similar construal effects for the dimensions of spatial distance, social distance, and hypotheticality. After describing these effects on representation, we review evidence for construal-related effects on prediction, evaluation, and behavior. We conclude by revisiting the general psychological distance construct, as well as by suggesting new directions for the study of construal as it impacts consumer behavior.

DISTANCE AND MENTAL REPRESENTATION

Distance and Mental Representation: Time

Numerous studies have examined the hypothesis that distant future events are represented in a more abstract, structured, high-level manner than near future events. For example, Liberman, Sagristano, and Trope (2002) used measures of structure and categorization breadth to examine temporal differences in construal. In one study they asked individuals to imagine a set of scenarios (e.g., a camping trip, a friend's visit to NY) to occur in either the near or distant future. For each scenario, participants grouped a set of related objects (e.g., tent, ball, snorkel) into as many groups as they deemed appropriate. Consistent with the idea that participants thinking about the events occurring in the distant future thought about the objects in more superordinate, abstract terms, these participants created fewer groups out of the objects than participants in the near future condition. A second study looked at the structure underlying participants' preference judgments for events to happen in the near and distant future. Multidimensional scaling results showed that fewer dimensions were necessary to explain the same amount of variance in distant future preferences than in near future preferences, indicating that distant future representations were characterized by a simpler underlying structure than were near future representations.

Wakslak, Nussbaum, Liberman, and Trope (2006) also used structural measures to examine differences in construal, focusing in particular on temporal shifts in the structure of self-representation. Using a variety of self-structure measures, they found that distant future self-representations were simpler and more integrated than near future self-representations. For example, in one study participants completed a measure of self-concept differentiation (Donahue, Robins, Roberts, & John, 1993) in which they rated themselves on a variety of personality adjectives for five different social roles (e.g., student, child, friend). Results showed that personality ratings were more similar across social roles when participants were thinking of themselves on a day

one year later than when thinking of themselves the following day. That is, the distant self was thought of in a more integrated, structured manner, whereas the near self was more contextualized and fluid.

Other studies have measured construal by examining shifts in identification, as opposed to structure. Liberman and Trope (1998), for instance, looked at measures of action identification, distinguishing between a high-level identification in which the activity is linked to its superordinate purpose (the "why" of the activity) and a low-level identification in which the activity is linked to its subordinate means (the "how" of the activity). In one study, participants provided an open-ended description of a series of events that were to occur in the near or distant future. Results showed that distant future activities (e.g., studying) were more likely to be identified in high-level (e.g., doing well in school) rather than low-level (e.g., reading a textbook) terms. Participants also completed the Behavioral Identification Form (Vallacher & Wegner, 1987, 1989), a previously established measure of action identification. For each activity listed in this measure, participants choose between one of two identifications: an identification option related to the "why," abstract aspect of the activity, and one related to the "how," concrete aspect of the activity. As expected, participants thinking about events in the distant future were more likely to choose the "why" identification than those thinking of near future events.

Also distinguishing between superordinate purposes and subordinate means, Day and Bartels (2004) asked participants to judge the similarity of pairs of actions in order to investigate temporal changes in representation. Some of the action pairs were similar at the superordinate, high-level while others were similar at the subordinate, low-level. For example, the activity "going to the dentist" was similar to the activity "joining a health club" at the high-level (both involve promoting one's health). In contrast "going to the dentist" was similar to the activity "getting a tattoo" at the low-level (both involve sitting in a chair and undergoing a painful procedure). As expected, when the actions were described as occurring in the distant future, event pairs with abstract, high-level commonalities were seen as more similar than event pairs with low-level procedural commonalities; in the near future condition this difference was significantly minimized.

Nussbaum, Trope, and Liberman (2003) focused on a different aspect of high-level construal: the tendency to identify behaviors in terms of underlying traits. Reasoning that traits are abstract, generalized representations, they predicted that with increased temporal distance, participants would be more likely to characterize behavior in terms of dispositional traits and thus less likely to consider the impact of situational constraints on behavior. In line with this reasoning, findings demonstrated that the correspondence bias (the tendency to underweight low-level, situational constraints on observed behavior, cf. Jones & Harris, 1967) was

more pronounced when behavior was used for predicting the distant future than the near future.

Temporal differences in abstraction have also been found at the level of visual perception. Förster, Friedman, and Liberman (2004) asked people to complete various tasks that required the abstraction of coherent images from fragmented or noisy visual input. For example, in one study participants completed the Gestalt Completion Test (Ekstrom, French, Harman, & Dermen, 1976), in which they were presented with black fragments of a complete picture and told to structure the information into a whole and close the visual gestalt. Consistent with CLT, participants' performance increased when they imagined working on the task in the distant future as opposed to the near future, suggesting that temporal distance not only leads one to adopt abstract- vs. concrete-language-based representations, but also that it facilitates abstract processing more generally.

Converging evidence thus suggests that distant future events are represented in an abstract, structured manner that emphasizes superordinate features, while near future events are represented in a concrete, contextualized manner that includes an emphasis on subordinate features. We now turn to recent evidence examining the relationship between construal and the dimensions of spatial distance, social distance, and probability.

Distance and Mental Representation: Space

A number of studies have established a link between spatial distance and mental construal. For example, students at NYU's Washington Square campus watched a video of two students interacting and provided a written description of the activity in the video (Fujita, Henderson, Eng, Trope, & Liberman, 2006). In the spatially near condition, participants believed that the individuals in the video were NYU students studying at the Washington Square campus in New York City; in the spatially distant location, participants believed that the individuals in the video were NYU students studying at an NYU study-abroad location in Florence, Italy. Participants' written descriptions were analyzed for abstractness of language, using coding schemes developed for the Linguistic Categorization Model (Semin & Fiedler, 1988). Findings showed that participants who believed that the video protagonists were located in a spatially distant location used more abstract language in describing the events in the film than those who believed the video protagonists were located in a spatially near location.

Henderson, Fujita, Trope, and Liberman (2006) also examined the construal of spatially near and distant events. In one study, they asked NYU participants to divide an ongoing behavioral sequence into as many sections as they deemed appropriate (cf. Newtson, 1973). Participants viewed an animated film developed by Heider and Simmel (1944) that shows two triangles and a circle moving against and around each other; all were told that the film depicted

the action of three teenagers around a cabin at a well-known summer camp. In the spatially near condition, the camp was said to be located on the East Coast, whereas in the spatially distant condition, the camp was said to be located on the West Coast. As expected, participants created fewer, more broad sections out of the video when they believed that the campers it depicted were in a spatially distant, as opposed to spatially near, location.

Distance and Mental Representation: Social Distance

Liviatan, Trope, and Liberman (2006) examined construal effects related to similarity, one form of social distance. The less similar someone is to oneself, the more socially distant they typically seem; therefore, the researchers hypothesized that behavior performed by a dissimilar other would be represented at a higher level of construal than behavior performed by a similar other. Participants read about a target person who had attended either similar or different classes as themselves. (This information was elicited in a mass testing session at the beginning of the semester and was provided in the experimental session as "background information" about the target individual.) They then imagined the student engaging in various activities; for each activity, participants chose between a subordinate action identification (description emphasizing the means by which the action is performed) and a superordinate action identification (description emphasizing the end for which the action is performed). As would be expected if dissimilar targets' actions are represented in higher level terms than similar targets' actions, participants' preference for superordinate relative to subordinate action identifications was greater for a dissimilar than similar target.

Another form of social distance that has been linked to construal is power. Reasoning that elevated power increases the psychological distance one feels from others, Smith and Trope (2006) examined the relationship between power activation and abstraction. For example, in one study participants completed a writing task that activated the experience of either low or high power (Galinsky, Gruenfeld, & Magee, 2003); they then completed a measure of inclusiveness of categorization (Rosch, 1975), indicating to what degree atypical exemplars (e.g., purse) were good members of a given category (e.g., clothing). In line with the hypothesis that power priming leads to more abstract thinking and thus greater breadth of categorization, the results showed that high-power primed participants were more inclusive in their categorization than low-power primed participants.

Distance and Mental Representation: Probability

Wakslak, Trope, Liberman, and Alony (2006) reasoned that independent of its spatiotemporal and social distance, an event is removed from one's direct experience when it could have happened but has not actually happened or when it is possible but not certain. An improbable event would thus seem more distant than a probable event, and the lower the probability of the event, the greater its psychological distance. On the basis of this assumption, a series of studies were conducted to examine the relationship between probability and mental construal. For example, one study used a categorization task (previously used by Liberman et al., 2002, described above), in which participants grouped objects related to each of four scenarios into as many groups as they deemed appropriate. Participants were asked to imagine that they were either highly likely or highly unlikely to engage in the scenario. As expected, participants in the high-likelihood condition created fewer, broader groups out of the objects than participants in the low-likelihood condition.

The effect of probability on mental construal emerged on identification measures as well. For example, participants in one study received a flyer advertising a paid research assistant position described in broad, general terms (e.g., helping behavior research) as well as in specific, low-level terms (e.g., dropping a book in front of participants). Participants in the high-probability condition were told that they would be almost certain to get the position if they signed up for the post, while participants in the low-probability condition were told that they would be unlikely to get the position if they signed up for the post. Participants signed up for consideration, and then completed a separate, unrelated study. At that study's conclusion, they were given a surprise "recall test" where they were asked to indicate the nature of the research assistantship that had been advertised earlier. Participants in the high-probability condition were more likely to provide specific than general descriptions of the assistantship; this tendency was significantly lower for participants in the low-probability condition. In addition to these open-ended responses, participants were asked to identify the assistantship in specific or general terms on a forced-choice item. While participants in the high-probability condition preferred the specific to the general identification, those in the low-probability condition preferred the general identification to the specific one. (In contrast, actual signup rates did not differ between the two conditions.)

Visual structure measures also revealed construal differences as a function of probability. Participants who came for a computerized study of visual perception were asked to first complete a paper and pencil practice version of the study task. During this "practice session" each participant completed two different tasks: one that they believed they were likely to later complete in the actual experiment and the other that they believed that they were unlikely to later complete in the actual experiment. The two tasks were the Snowy Pictures Test, which asks participants to name a picture hidden beneath visual noise, and the Gestalt Completion Test, in which participants must name an object presented in fragments (Ekstrom et al., 1976). While different, both tasks involve abstracting visual information, and

thus performance on both should be greater when associated with low, as opposed to high, probability. Indeed, this was the case. Participants' performance on each task was better when they believed that they were unlikely to later complete the task than when they believed that they were likely to later complete the task. Further, a follow-up study revealed the opposite pattern of results when the task content was replaced with a picture completion test in which participants had to name an element missing within a coherent whole (Wechsler, 1991). If abstracting information allows one to better close the gestalt in a picture, this should make it harder to recognize individual missing elements; in accord with this prediction, participants performed less well on the task when they believed they were unlikely (as opposed to likely) to later complete the task in the actual experiment. In sum, the effect of probability on performance is dependant upon the nature of the task: when abstraction facilitates performance, thinking of something as unlikely leads to better performance; when abstraction hinders performance, thinking of something as unlikely leads to diminished performance.

Pictorial vs. Verbal Representations

Amit (2006) has recently suggested that because psychologically near events tend to be represented concretely and psychologically distant events tend to be represented abstractly, psychological distance should impede the processing of concrete event representations and facilitate the processing of abstract event representations. In particular, because a word is an abstract representation that carries the essence of the referent object whereas a picture is a concrete representation that carries the properties of the referent object in full detail, processing of pictures should be facilitated when they are psychologically near and processing of words should be facilitated when they are psychologically distant. In her experiments, Amit presented spatially, temporally, or socially near or distant items in either a pictorial or verbal format. For example, in an experiment on spatial distance, a pair of items was presented either in pictorial or verbal format inside background pictures that created an illusion of depth. The items were presented either in proximal or distal position in the background picture. As expected, participants responded faster to pictures of objects when they were spatially near than spatially distant, but they responded faster to words denoting those objects when they were spatially distant than spatially near. Similar results were obtained with temporal distance (e.g., modern vs. ancient objects) and social distance (domestic vs. foreign objects). Responses were faster when the psychological distance of an object was compatible with its medium of presentation (e.g., pictures of domestic objects and names of foreign objects) than when the distance was incompatible with the medium of presentation (e.g., pictures of foreign objects and names of domestic objects). It seems, then, that processing is most efficient when there is a congruency between the portrayed distance and the presentation medium.

Abstraction and Distance Judgments

If the relationship between distance and construal is in fact based upon an over-generalized association, it would make sense for this relationship to be bi-directional. That is, manipulations of construal should affect distance perceptions much in the same way as the distance of an event influences its construal. Findings in line with this prediction have been demonstrated for a variety of distance dimensions. For example, Liberman, Macrae, Sherman, and Trope (2007 asked participants to indicate either "why" or "how" a person would perform an activity (e.g., Ron is considering opening a bank account. Why (How) would Ron do that?); they then estimated in how much time from that point the person would do the activity. Because thinking about the why of an activity is part of a high-level construal whereas thinking about the how of an activity is part of a low-level construal, participants responding to why questions should indicate more distant enactment times than those responding to how questions. Indeed, this was the case.

A study we have recently conducted extends these findings to the dimension of spatial distance. Participants were provided with descriptions of a series of events (e.g., picking up a family member from the airport), some of which were described in concrete terms with specific details (i.e., low-level construal) and others of which were described in general, superordinate terms (i.e., high-level construal). They were then asked to estimate the spatial distance between objects described in the event (e.g., the distance between the car in which they were traveling and the airport). As expected, the perceived spatial distance between objects was greater when the event was described in high-level terms than when the event was described in low-level terms.

Finally, Wakslak, Trope, and Liberman (2006) found similar associations between construal and probability judgments. For example, in one study they asked participants to think about themselves performing either the main task or the filler task in a described psychology experiment. Because a focus on central aspects is part of a high-level construal representation, whereas peripheral aspects are included in a low-level representation, thinking about an event's central aspects should encourage a more high-level representation of the event. After this construal manipulation, participants indicated how likely they would be to sign up for the experiment. In line with the proposed association between construal and probability, participants instructed to focus on the experiment's central task judged their likelihood of signing up to be lower (i.e., more distant) than those instructed to focus on the experiment's secondary task. Furthermore, additional experiments showed similar effects using a variety of construal manipulations and types of probability judgments.

In sum, extensive research has verified that a relationship exists between level of construal and the dimensions of temporal, spatial, social, and hypothetical distance. As psychological distance increases, construals become more abstract, and as level of abstraction increases, perceptions of psychological distance too increase. What, then, are implications of these construal findings? What predictions does CLT put forward regarding the relationship between psychological distance and prediction, evaluation, and behavior? In the coming sections we review findings addressing each of these questions.

DISTANCE AND PREDICTION

A number of studies have examined the relationship between distance and prediction. For example, in one set of studies, Nussbaum, Liberman, and Trope (2006) looked at the manner in which temporal distance influences the confidence that individuals have in predictions they make about future outcomes, and the type of information used in making these predictions. According to CLT, predictions about a distant future event should be based on implications of high-level rather than low-level construals. Theories are, by definition, abstract constructions of schematic relations among entities in an idealized, noise-free world. However, when tested empirically, theoretically derived predictions may fail to replicate due to nonsystematic influences of the specific testing conditions. Focusing on theories (the high-level construal of an experiment) should therefore enhance confidence in theoretical predictions, whereas focusing on nonsystematic factors (the low-level construal) should decrease confidence. Therefore, participants should be more confident in making theory-based predictions of distant future experiments than near future experiments.

In one study, for example, participants imagined replicating five classic psychological findings. Half of the participants read a short description of the theoretical basis for the predictions, whereas the other half simply read about the study and the prediction. In addition, participants imagined conducting the study either in the distant future (one year) or the near future (tomorrow). All participants then indicated how confident they were that the predicted effect would be found in their experiment. Results revealed that temporal distance increased confidence only when subjects were provided with a theoretical rationale for the predictions. In other words, when confidence was derived from a high-level construct, temporal distance enhanced confidence.

Other aspects of construal should similarly lead to systematic difference in prediction. For example, Henderson, Fujita et al. (in press) investigated the effect of spatial distance on the tendency to base predictions on global, rather than local, information. In one study, NYU-Washington Square Campus participants viewed a series of graphs depicting information about events that took place at NYU from 1999–2004 (e.g., average number of photocopies per student per class). The events were described as occurring at "the NYU campus in Manhattan" (spatially near condition) or "the NYU campus in Florence, Italy" (spatially distant condition). Each graph showed either an alleged upward or a downward trend of cases, with the final year (2004) always deviating from the global trend (e.g., if the chart trended upward, the final point trended downward). Participants then estimated the likelihood that the case for the year 2005 would be consistent with the general trend or with the deviation evidenced in 2004. In terms of CLT, general trends convey a high-level abstract rule about how the future will manifest itself, whereas deviations from trends represent a low-level, concrete exception to the rule. Indeed, participants in the spatially distant condition were more likely to base their predictions on general trends than on deviations from general trends, whereas participants in the spatially near condition did not make this distinction.

DISTANCE AND EVALUATION

Like prediction, evaluations made about distant future events should be based to a larger degree on high-level construal aspects of the situation than evaluations made about near future events. This prediction has been examined as it pertains to multiple manifestations of high-level vs. low-level construals: primary, goal-related vs. secondary, goal-irrelevant sources of value; feasibility vs. desirability; arguments in favor vs. arguments against an action; idealistic values vs. pragmatic concerns; and use of nonalignable as opposed to alignable attributes.

Primary vs. Secondary Features

A number of studies have examined the way in which primary and secondary features are differentially weighed in near and distant evaluations. For example, Trope and Liberman (2000) examined evaluations of objects and events containing both a primary and a secondary aspect. In one study, for instance, they asked participants to imagine buying a radio set either the next day or in one year, in order to listen to morning programs. In one version, participants read that the sound quality of the radio set was good, but that the clock that was incidentally included was relatively useless. In a different version, participants read that the sound quality of the radio set was poor, but that the clock aspect was quite useful. As expected, participants thinking about the purchase in the distant future expressed more satisfaction when the central feature was good and the peripheral one was poor (i.e., the sound quality was good and the clock poor) than when the central feature was poor and the peripheral one was good (i.e., the sound quality was poor and the clock good); in contrast, near future evaluations did not differ between these two conditions. Further, the same

temporal changes in preference were found for evaluations of experimental sessions with interesting and boring main and filler tasks, as well as experimental sessions with both affective and cognitive goal-relevant and goal-irrelevant features.

Desirability vs. Feasibility

When considering goal-directed action, an important distinction can be made between desirability concerns, which involve the value of the action's end-state (i.e., the "why" aspect of the action), and feasibility concerns, which involve the means used to reach the end-state (i.e., the "how" aspect of the activity). Accordingly, high-level construals of an activity should emphasize desirability concerns whereas low-level construals of an activity should emphasize feasibility concerns. CLT thus predicts that desirability concerns should receive greater weight over feasibility concerns as psychological distance increases.

Liberman and Trope (1998) examined this prediction as it pertains to temporal distance. Participants in one study, for example, made decisions about three decision situations (e.g., deciding whether to attend a guest lecture) that they imagined occurring to them in either the near or distant future. For each situation, the desirability of the outcome (e.g., how interesting the lecture was) and its feasibility (e.g., how convenient the timing of the lecture was) were varied between participants. Consistent with CLT, results revealed that the effect of desirability increased over time, whereas the effect of feasibility decreased. Thus, the attractiveness of the options increased or decreased as a function of the source of the attractiveness: when outcomes were desirable but hard to obtain, attractiveness increased over time; when outcomes were less desirable but easy to obtain, attractiveness decreased over time.

Todorov, Goren, and Trope (in press) found that variations in probability had a similar effect on the impact of desirability and feasibility issues. For example, in one study, participants read about a series of promotional campaigns constructed so that they were either high in desirability and low in feasibility (e.g., receiving 10 free CDs at an inconvenient location) or low in desirability and high in feasibility (e.g., receiving 1 free CD at a convenient location). Under high probability, participants were told that if they signed up for the campaign, they were almost certain to receive a voucher for the company's products. Under low probability, they were told that they would have about a 1 in 100 chance of receiving a voucher. Results were as expected: under low probability participants preferred the high desirability/low feasibility option over the low desirability/high feasibility option, whereas under high probability they preferred the low desirability/high feasibility option over the high desirability/low feasibility option. Thus, desirability was increasingly weighed over feasibility as psychological distance increased (i.e., as probability diminished).

Thomas, Chandran, and Trope (2006) explicitly applied this desirability–feasibility distinction to consumer choice. In line with earlier research on evaluation, they expected feasibility-related information to have a greater influence on purchase intentions for the near, rather than distant, future; in contrast, desirability information should more strongly increase purchase intentions for the distant, rather than near, future.

In one study, participants learned that a store they frequent was adding memory sticks (portable USB data storage devices) to their offerings. After reading about the product and submitting baseline purchase intentions, participants saw information about a promotional offer for the memory stick. This information related either to the product's desirability (the addition of an additional desirable feature at the same price) or to the product's feasibility (an in-store coupon lowering the product's final price). Further, participants were either told to imagine deferring the purchase (buying the product at a distant time point instead of now) or expediting the purchase (buying the product at a near future time point instead of sometime later). They then indicated their intention to buy the product at the deferred/expedited time. In line with expectations, when the purchase was moved to the near future, information about the price discount (feasibility) increased purchase intentions but information about the additional feature (desirability) did not. In contrast, when the purchase was moved to the distant future, desirability information increased purchase intentions but feasibility information did not. These findings suggest that temporal distance augments the effects of desirability information but discounts the effects of feasibility information.

Building on the idea that individuals naturally increase their focus on desirability relative to feasibility as temporal distance increases, Agrawal, Trope, and Liberman (2006) suggested that highlighting temporally appropriate aspects of an event at the time that consumers make a decision will lead consumers to associate greater value with their choice. In a series of studies they presented participants with a variety of options, one of which was clearly dominant in that it was high on both desirability and feasibility dimensions. Choices were made for either the near or the distant future. Further, the choice frame was manipulated by telling participants to ask themselves questions that made salient either desirability aspects (e.g., "Does the information content on the website match your professional interests?"; "Would I really enjoy this concert?") or feasibility aspects (e.g., "Is it convenient, easy, and efficient to find information on this website?"; "How much does this ticket cost?"). After selecting their choice (always the dominant option), participants indicated the dollar amount that they believed their choice was worth and completed a value index rating the goodness of the choice. As expected, participants were willing to pay more and reported greater value for the distant future option when the choice was framed to make desirability rather than

feasibility salient; in contrast, willingness to pay and value were greater for near future choices when feasibility rather than desirability was made salient.

Pros vs. Cons

Like other secondary aspects that are subordinate to primary ones, in deciding whether or not to undertake an action cons are subordinate to pros. This is because the importance of pros does not depend upon the existence of cons, whereas cons are only important when pros are present. Consider, for example, the decision to undergo a medical procedure. If the procedure has no benefits, one would not inquire about its potential complications (one would simply decide not to proceed). In contrast, one would inquire about the procedure's benefits whether or not there were potential risks. Eyal, Liberman, Trope, and Walther (2004) empirically established this subordination and then examined the implication that follows from CLT: if cons are subordinate to pros, then pros should become more salient as temporal distance from the action increases, whereas cons should become less salient as temporal distance from the action increases. Participants generated arguments in favor and against new (i.e., non-routine) near future or distant future actions. As predicted, participants generated relatively more pro arguments and fewer con arguments when the actions were to take place in the more distant future. The proposed action involved new exam procedures (e.g., switching to open-ended questions instead of multiple choice questions), social policies (e.g., restricting private cars in the city center), and a variety of personal and interpersonal behaviors (e.g., approaching a fellow student and offering to write an assignment together). In all the studies, participants generated more pros and less cons as temporal distance from the actions increased.

In an extension of these findings, Herzog, Hansen, and Wänke (in press) suggested that if pros are more salient as temporal distance increases and cons are more salient as temporal distance decreases then an increase in temporal distance should make it easier to generate pros and more difficult to generate cons. Further, because attitudes tend to be more in line with content when the retrieval is experienced as easy (Wänke & Bless, 2000), the ease of retrieval associated with generating pros and cons of near and distant future activities should influence attitudes toward those activities, even when the number of arguments is held constant. In a test of these ideas, participants read about a proposed action that was to happen in the near or distant future and were instructed to write down either four pros or four cons regarding the activity. They then rated the ease of generating these arguments as well as their attitude regarding the described action. As expected, participants (a) found it easier to generate pros and more difficult to generate cons when the issue concerned the distant rather than near future and (b) had more favorable attitudes toward the action when

it was to occur in the distant future. Mediational analysis indicated that, indeed, the ease of retrieval effect was at least partially responsible for the effect of temporal distance on attitudes.

Idealistic Values vs. Pragmatic Concerns

Just as cons are subordinate to pros, Kivetz and Tyler (2007) argue that pragmatic concerns are subordinate to people's inner, idealistic values. Accordingly, they suggest that a distal perspective encourages the expression of an idealistic self (a value-oriented self-representation that reflects a person's true, inner self and places principles above practical concerns), which increases the value placed upon identity-related concerns (e.g., respect, quality of treatment). In contrast, a proximal time perspective encourages the expression of a pragmatic self (a self-representation that is focused on available opportunities and constraints and is guided by the practicality of action), increasing the value placed upon instrumental concerns (e.g., financial benefits, extrinsic rewards). In line with this conceptualization, students who considered an academic course to start the next academic year (distant future outcome) focused on identity-oriented benefits of the course (e.g., whether the professor treated students with respect). In contrast, when considering a course to start a few days later, participants concentrated on instrumental benefits of the course (e.g., the professor's tendency to give high grades).

Similarly reasoning that values and ideals influence evaluation more in the distant future than in the near future, Fujita, Eyal, Chaiken, Trope, and Liberman (2006) examined temporal shifts in the persuasiveness of arguments that highlighted either a value-related product feature or a value-neutral product feature. Participants imagined finding a sale for DVD players either that week (near future condition) or in three months (distant future condition). They then viewed a number of arguments endorsing the purchase of a particular DVD player. For half of the participants, the argument list included a value-related argument (the DVD player is made of environmentally-friendly materials), whereas for the other half, all the arguments were value-neutral. As expected, product evaluations made by participants considering the purchase in the distant future were more positive when the message included a value-related argument than when it consisted only of a value-neutral argument. In contrast, when participants considered the purchase in the near future, evaluations did not differ on the basis of inclusion of a value-related feature. Thus, persuasive arguments appealing to idealistic values appear to be more persuasive for temporally distant, as opposed to near, attitude objects.

Alignable vs. Nonalignable Attributes

Finally, distance influences evaluations not only as a function of feature content, but also as a function of the decision

context. Structural alignment theory (Gentner & Markman, 1994) suggests that in choosing among alternatives individuals primarily rely on alignable differences (common attributes that have different levels across alternatives) rather than nonalignable differences (attributes in one alternative that do not have a corresponding attribute in other alternatives), because nonalignable differences are more difficult to process. Incorporating a CLT perspective, Malkoc, Zauberman, and Ulu (2005) reasoned that because the comparability of options increases when their attributes are thought about abstractly (Johnson, 1984), decisions that have distant future consequences (relative to near future consequences) will involve an increased consideration of nonalignable attributes. In a test of this prediction, participants evaluated two brands of potato chips and selected one brand to receive either at the end of the session (near future) or at the end of the semester (distant future). The two brands were designed on the basis of pretesting to be equally attractive overall; one of the brands, however, was designed to be better on its alignable attributes, whereas the other brand was better on its nonalignable attributes. As expected, temporal distance shifted both evaluations and choice toward the nonalignable better option over the alignable better option, indicating an increased reliance on nonalignable attributes when making decisions with distant future consequences.

DISTANCE AND BEHAVIOR

Like predictions and evaluations, behavior should be increasingly based on high-level construal aspects as psychological distance increases. Investigations in this area have focused on a variety of construal aspects and examined a range of behaviors. These approaches include examining the impact of values and general attitudes on behavioral intentions, tradeoffs of primary and secondary concerns within a negotiation context, self-control, the sunk-cost bias, risk perception, and consumer impatience.

Predicting Behavioral Intentions from Attitudes and Values

We argued earlier that values and general attitudes are part of high-level construals; correspondingly, we would expect these constructs to be more readily applied to psychologically distant situations than to psychologically near situations. In an examination of this prediction, Sagristano, Trope, Eyal, and Liberman (2006) used Schwartz's (1992) value questionnaire to measure the importance participants placed on a wide range of values (e.g., hedonism, benevolence, power). They then asked participants to imagine 30 behaviors (e.g., rest as much as I can) and to indicate the likelihood of performing each behavior in either the near or the distant future. Correlations of the value ratings with the corresponding behavioral intentions revealed that values were more strongly associated with behaviors planned for the distant future than those planned for the near future. Further, a follow-up study found similar results when participants considered actual behavioral opportunities. In the first session, Sagristano et al. (2006) measured participants' general attitudes toward a variety of activities (e.g., blood donation); in the second, unconnected, session, participants were offered an opportunity to engage in each of these activities in either the near future (the next two days) or the distant future (several weeks later). In line with the predictions, participants' general attitudes were better predictors of behavioral intentions for distant future opportunities than for near future opportunities.

While values are in and of themselves high-level constructs, it is also possible to distinguish between an individual's central, core values and peripheral, secondary values. When a number of values are relevant to a psychologically distant situation, we would expect the value conflict to be solved in favor of the person's predominant, central values; in contrast, we would expect a person's near future plans to reflect less well the distinction between his or her primary and secondary values. Eyal, Liberman, Sagristano, and Trope (2006) tested these predictions. In one study, for example, they examined the way that the centrality of altruism vs. achievement values predicted near and distant intentions related to solving a dilemma between helping a friend and getting ahead by working extra hours. As expected, participants who were predominantly altruistic planned to be more cooperative in the distant future than in the near future; in contrast, participants who were predominantly achievement oriented planned to be more achieving in the distant future than in the near future. Thus, as distance increased, participants increasingly solved the conflict in favor of the value that they personally found to be more central.

Logrolling in Negotiation

As with values and attitudes, issues within an interpersonal negotiation can differ in their centrality and worth. If a pair of negotiators can trade off their lowest and highest priority issues (e.g., give in on secondary issues in exchange for getting what they want on high priority issues, a process called logrolling), they are more likely to succeed in "expanding the pie," maximizing both individual and joint outcomes. Because negotiators should be expected to focus more on central concerns and less on peripheral concerns as distance increases, we would expect to see more logrolling agreements in a distant future than near future context. Examining this idea within the context of a live negotiation, Henderson, Trope, and Carnevale (2006) found that while 91% of dyads with a temporally distant perspective reached a fully logrolling agreement, only 50% of dyads with a temporally near perspective did so. Further, results showed that distant future participants approached the negotiation in a more global, structured manner than near future participants,

leading to an increase in both individual and joint outcomes for the distant future participants.

Self-control

Acting in line with one's primary, central objective—as opposed to incidental, secondary factors—is one hallmark of exerting self-control. Accordingly, Fujita, Trope, Liberman, and Levin-Sagi (2006) reasoned that activating a high-level construal orientation through procedural priming (as opposed to a low-level construal orientation) should lead to greater exertion of self-control. In one study, for example, participants considered either why or how they engaged in a given action (this manipulation has been shown to activate high- and low-level construals, respectively; see Freitas, Gollwitzer, & Trope, 2004). Next, participants held a hand-grip (cf. Muraven, Tice, & Baumeister, 1998) ostensibly to receive self-relevant information. They were told that the longer they squeezed the handgrip (a task that causes increasing discomfort), the more accurate the feedback from the assessment would be. Participants thus had to choose between receiving increasingly self-relevant feedback (a high-level feature) and relieving their hand's discomfort (a low-level feature). As expected, those primed to a high-level construal held the handgrip longer than those primed to a low-level construal, revealing a relationship between high-level construal and self-control. Furthermore, studies using a different construal manipulation (a superordinate vs. subordinate categorization task), found similar self-control effects on both evaluations of temptations (Study 4) and behavioral intentions to undertake activities requiring self-control (Study 3).

Kivetz and Simonson (2002) used a similar rationale in an investigation of what they term hyperopia, or reverse self-control. These authors argue that sometimes people must exert self-control in order to indulge in luxuries that they would not ordinarily allow themselves. Like other forms of self-control, psychological distance should enhance this tendency. Indeed, results revealed that participants were increasingly likely to choose a luxury promotional option (e.g., a cruise) as opposed to a practical promotional option (e.g., a cash prize) as temporal distance increased. Further, reducing the probability of winning the prize (in place of increasing temporal distance) similarly led to an increased selection of the luxury prize alternative.

Sunk-cost Bias

Like classic self-control problems, the sunk-cost bias can be thought of as a failure to act in line with primary, relevant objectives. The sunk-cost error, referred to in the management literature as "escalation of commitment" (cf. Staw, 1981), is the tendency to continue to commit resources (e.g., money, time) to a failing course of action. According to rational models, future-oriented decisions should be made on the basis of future-oriented costs and benefits; past investments are essentially irrelevant. Further, motivations that arise from the past investment itself (e.g., self-justification, Brockner, 1992; "don't waste" heuristic, Arkes & Blumer, 1985) should be secondary to the primary goal at hand (e.g., making a good investment). Increased psychological distance should therefore reduce the tendency to make this error. Investigating this phenomenon, Wakslak, Liberman, and Trope (2006) presented NYU participants with Arkes and Blumer's (1985) classic "radar blank plane" scenario in which participants decide whether to commit resources to a plane that they have previously invested in but that new information reveals is unlikely to yield a profit. Half of participants were told that the company making the planes was located far away, on the West Coast; the other half were told that the company was located quite nearby, on the East Coast. As expected, participants' tendency to make the sunk-cost error was reduced when the scenario occurred in a distant as opposed to a near location. Further results replicated this effect using temporal distance in place of spatial distance and examining a range of sunk-cost phenomena.

Risk Perceptions and Temporal Frames

Chandran and Menon (2004) suggested that distance-related factors could be used to manipulate the concreteness of a risk communication, thereby influencing individuals' risk perceptions and behavioral intentions. Extending CLT's logic to temporal frames (describing events as happening either "every day" or "every year"), they demonstrated that temporal framing effects mimic temporal distance effects such that risks presented in a day frame were perceived as closer in time, more concrete, and more probable (thus evoking a greater sense of threat) than those presented in a year frame. In one study, for example, participants read an article about heart disease. Events in the article were presented in either a day frame or an year frame. In addition, the valence of the outcome was manipulated so that the outcomes were either negative (e.g., "every day/year a significant number of people succumb to heart disease") or positive (e.g., "every day/year a significant number of people avert heart disease"). When the outcome was framed negatively (i.e., as a risk), participants in the day frame condition (vs. those in the year frame) reported higher self-risk perceptions, believed heart disease was a more serious issue, were more anxious about heart disease, evaluated the article they read as more effective, and expressed stronger behavioral intentions to engage in a variety of educational and preventive behaviors aimed at curtailing heart disease. In contrast, when the outcome was framed positively (i.e., as avoiding a risk), the reverse patterns emerged. In other words, when the outcome consisted of a health hazard, the day (vs. year) frame made the hazard seem more proximal and concrete, evoking a stronger sense of risk and threat; when the outcome consisted of avoiding a health hazard, the

day (vs. year) frame made *escaping* the hazard seem more proximal and concrete, evoking a weaker sense of risk and threat.

Consumer Impatience

Researchers interested in intertemporal decision-making (for a review see Frederick, Loewenstein, & O'Donoghue, 2002) have consistently found evidence for consumer impatience, that is, a preference by consumers for smaller, sooner benefits over later, larger ones. Further, as the time horizon gets longer, this pattern of impatience decreases. Recently, Malkoc, Zauberman, and Bettman (2006) have argued that abstract processing should lead consumers to think in a decontextualized manner, increasing their tendency for consistency in intertemporal preferences. In one study, for instance, participants were primed with a word search that used either abstract or concrete words. In an unconnected task, participants imagined receiving a $75 gift certificate from amazon.com, and indicated how much money they would require to delay the redemption of this gift certificate by 3 months and by 1 year. As expected, participants primed with abstract words demonstrated a decreased level of present bias relative to those primed with concrete words (i.e., they showed a lower decline over time in the monthly amount they would require to delay consumption). Thus, high-level construal (vs. low-level construal) priming resulted in a more consistent set of intertemporal preferences.

In summary, a range of studies suggest that when forming predictions, evaluations, and behavioral intentions for distant events, individuals rely primarily on high-level construals; when making these assessments for near events, low-level construal information is increasingly incorporated into the decision making process. This basic effect has been replicated across multiple dimensions of psychological distance and has been found to influence a large number of important outcome variables. Furthermore, these effects occur despite the equally irreversible nature of the near and distant decisions and the equal information available regarding the near and distant options. Individuals' distant choices are thus not characterized by uncertainty or indifference; rather these choices seem to discriminate most clearly between alternatives. In our view, this is because these decisions are made on the basis of a high-level construal representation that is more structured and schematic than a corresponding low-level construal.

TOWARD A THEORY OF PSYCHOLOGICAL DISTANCE

At the beginning of this paper, we claimed that an event is psychologically distant whenever it is removed from direct experience. In particular, we pointed at four dimensions along which distancing commonly occurs: temporal distance, spatial distance, social distance, and hypotheticality. Findings in fact indicate that each of these dimensions shares a common relationship with construal; temporally distant, spatially distant, socially distant, and unlikely events are represented in a more abstract, high-level manner than are their corresponding proximal alternatives. Accordingly, when predictions, evaluations, and behavioral intentions are made regarding events distanced on any of these dimensions, they are increasingly based on central, abstract features of the situation rather than peripheral, concrete features. In addition, using an implicit association paradigm, Bar-Anan, Liberman, and Trope (2006) found evidence for implicit associations between each of these distance dimensions and level of construal. Specifically, using a single consistent paradigm to investigate construal effects across these four distance dimensions, results showed shorter response times when distance-related words were paired with high-level construal stimuli and proximal-related words were paired with low-level construal stimuli than with incongruent pairings.

One implication of the current framework is that distance dimensions themselves should be interrelated. In line with this suggestion, Bar-Anan, Liberman, Trope, and Algom (in press) recently found evidence for the automatic associations of distance dimensions. Using a picture-word version of the Stroop paradigm (Stroop, 1935), participants discriminated between cues of one psychological distance dimension while ignoring cues of another psychological distance dimension. If psychological distance is a shared meaning of various distance dimensions, it should be easier to perform the task when the relevant and irrelevant cues are congruent (as opposed to incongruent) in terms of psychological distance. Participants viewed perspective pictures containing an arrow that was pointing to either a proximal or a distal point on the landscape shown in the picture; inside the arrow was printed a word denoting either a psychologically proximal entity (e.g., tomorrow, we, sure) or a psychologically distal entity (e.g., year, others, maybe). In a spatial discrimination version of the task, participants had to indicate whether the arrow pointed to a proximal or a distal location. In a semantic discrimination version, participants had to indicate what the word printed on the arrow was. In both tasks, and across the distance dimensions, participants were faster when responding to distant congruent stimuli (e.g., "we" printed on proximal arrow) than distant incongruent stimuli (e.g., "we" printed on distal arrow).

CONCLUSIONS

In this paper, we have discussed the relationship between construal and four dimensions of psychological distance: temporal distance, spatial distance, social distance, and hypotheticality. Each of these dimensions is highly relevant

to the psychology of consumer decision-making. For example, individuals often commit now to a decision that will go into effect at a later point. It is similarly common to buy something now for use at a later date. Spatial distance, too, is becoming an increasingly prevalent aspect of consumer decisions: with the increase in purchases made over the internet, it is becoming ever-more routine to purchase products from distantly located sellers. Similarly, the existence of multinational companies and the ensuing globalization means that business dealings frequently occur with partners in remote spatial locations. Social distance may have implications when purchases are made on behalf of someone who is socially distant or close to oneself (e.g., buying a present for a boss vs. employee, self vs. similar other vs. dissimilar other). Likewise, people may experience more or less social distance from salespeople or customer service representatives with whom they interact (e.g., experienced power vis-à-vis a salesperson; perceived similarity to a customer service representative). Finally, hypotheticality is an issue whenever people make choices that have uncertain outcomes; examples include purchasable options that are themselves risky (e.g., stocks, sign-ups for dating websites) as well as promotional marketing campaigns whose outcomes differ in probability.

Of course, each of these four domains undoubtedly has its own unique motivational and cognitive aspects. While not questioning this truth, research grounded in CLT suggests that events distanced on any of these dimensions are represented in a schematic, abstract manner that emphasizes central and superordinate features (high-level construals), whereas proximal events are represented in a concrete, less schematic manner that includes incidental and subordinate features (low-level construals). Furthermore, research examining prediction, evaluation, and behavior shows the range of implications that are suggested by this framework. Given the importance of these dimensions to consumer decisions, we believe that investigations have only begun to tap the potential of this approach and that there remains much work to be done on both a theoretical and applied level. It is our hope that approaching various dimensions under the umbrella of psychological distance will create a unifying theoretical framework that will stimulate exploration and allow us to parsimoniously understand a range of seemingly unrelated psychological phenomena.

REFERENCES

Agrawal, N., Trope, Y., & Liberman, N. (2006). Value from highlighting time-appropriate. outcomes. Unpublished manuscript, Kellogg School of Management, Northwestern University.

Amit, E. (2006). Distance dependent processing of verbal and pictorial information. Unpublished manuscript, Tel Aviv University, Israel.

Arkes, H. R., & Blumer, C. (1985). The psychology of sunk cost. *Organizational Behavior and Human Decision Processes, 35*, 124–140.

Bar-Anan, Y., Liberman, N., & Trope, Y. (2006). The association between psychological distance and construal level: An implicit association test. *Journal of Experimental Psychology: General, 135*, 609–622.

Bar-Anan Y., Liberman, N., Trope, Y., & Algom, (in press). The automatic processing of psychological distance cues: Evidence from a Stroop task. *Journal of Experimental Psychology: General.*

Brockner, J. (1992). The escalation of commitment to a failing course of action: Toward theoretical progress. *Academy of Management Review, 17*, 39–61.

Chandran, S., & Menon, G. (2004). When a day means more than a year: Effects of temporal framing on judgments of health risk. *Journal of Consumer Research, 31*, 375–389.

Day, S., & Bartels, D. M. (2004). Temporal distance, event representation, and similarity. In K. D. Forbus, D. Gentner, & T. Regier (Eds.), *26th Annual Meeting of the Cognitive Science Society*. Hillsdale, NJ: Lawrence Erlbaum Associates, Inc.

Donahue, E. M., Robins, R. W., Roberts, B. W., & John, O. P. (1993). The divided self: Concurrent and longitudinal effects of psychological adjustment and social roles on self-concept differentiation. *Journal of Personality and Social Psychology, 64*, 834–846.

Ekstrom, R. B., French, J. W., Harman, H. H., & Derman, D. (1976). *Kit of factor-referenced cognitive tests*. Princeton, NJ: Educational Testing Service.

Eyal, T., Liberman, N., Trope, Y., & Walther, E. (2004). The pros and cons of temporally near and distant action. *Journal of Personality and Social Psychology, 86*, 781–795.

Eyal, T., Liberman, N., Sagristano, M. D., & Trope, Y. (2006). Resolving value conflicts in planning the future. Unpublished manuscript, Tel Aviv University.

Förster, J., Friedman, R. S., & Liberman, N. (2004). Temporal construal effects on abstract and concrete thinking: Consequences for insight and creative cognition. *Journal of Personality and Social Psychology, 87*, 177–189.

Frederick, S., Loewenstein, G. F., & O'Donoghue, T. (2002). Time discounting and time preference: A critical review. *Journal of Economic Literature, 40*, 351–401.

Freitas, A. L., Gollwitzer, P. M., & Trope, Y. (2004). The influence of abstract and concrete mindsets on anticipating and guiding others' self-regulatory efforts. *Journal of Experimental Social Psychology, 40*, 739–752.

Fujita, K., Eyal, T., Chaiken, S., Trope, Y., & Liberman, N. (2006). Influencing attitudes toward near and distant objects. Unpublished manuscript, Ohio State University.

Fujita, K., Henderson, M., Eng, J., Trope, Y., & Liberman, N. (2006). Spatial distance and mental construal of social events. *Psychological Science, 17*, 278–282.

Fujita, K., Trope, Y., Liberman, N., & Levin-Sagi, M. (2006). Construal levels and self-control. *Journal of Personality and Social Psychology, 90*, 351–367.

Galinsky, A. D., Gruenfeld, D. H., & Magee, J. C. (2003). From power to action. *Journal of Personality and Social Psychology, 85*, 453–466.

Gentner, D., & Markman, A. B. (1994). Structural alignment in, comparison: No difference without similarity. *Psychological Science, 5*, 152–158.

Heider, F., & Simmel, M. (1944). An experimental study of apparent behavior. *American Journal of Psychology, 57*, 243–249.

Henderson, M. D., Fujita, K. F., Trope, Y., & Liberman, N. (in press). The effect of spatial distance on social judgment. *Journal of Personality and Social Psychology, 91*, 845–856.

Henderson, M. D., Trope, Y., & Carnevale, P. (in press). Negotiation from a near and distant time perspective. *Journal of Personality and Social Psychology, 91*, 712–729.

Herzog, S., Hansen, J., & Wanke, M. (in press). Temporal distance and ease of retrieval. *Journal of Experimental Social Psychology.*

Johnson, M. D. (1984). Consumer choice strategies for comparing non-comparable alternatives. *Journal of Consumer Research, 11*, 741–753.

Jones, E. E., & Harris, V. A. (1967). The attribution of attitudes. *Journal of Experimental Social Psychology, 3*, 1–24.

Kivetz, R., & Simonson, I. (2002). Self-control for the righteous: Toward a theory of precommitment to indulgence. *Journal of Consumer Research, 29*, 199–217.

Kivetz, Y., & Tyler, T. R. (2007). Tomorrow I'll be me: The effect of time perspective on the activation of idealistic versus pragmatic selves. *Organizational Behavior and Human Decision Processes, 102*, 193–211.

Liberman, N., Macrae, S., Sherman, S. & Trope, Y. (2007). The effect of level of construal on temporal distance. *Journal of Experimental Social Psychology, 43*, 143–149.

Liberman, N., Sagristano, M., & Trope, Y. (2002). The effect of temporal distance on level of construal. *Journal of Experimental Social Psychology, 38*, 523–535.

Liberman, N., & Trope, Y. (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*, 5–18.

Liberman, N., Trope, Y., & Stephan, E. (2007). Psychological distance. In A. W. Kruglanski & E. T. Higgins (Eds.), *Social Psychology: Handbook of Basic Principles*. New York: Guilford Press.

Liviatan, I., Trope, Y., & Liberman, N. (2006). Interpersonal similarity as a social distance dimension: A construal level approach to the mental representations and judgments of similar and dissimilar others' actions. Unpublished manuscript, New York University.

Malkoc, S. A., Zauberman, G., & Bettman, J. R. (2006). Impatience is in the mindset: Carryover effects of processing abstractness in sequential tasks. Unpublished manuscript, University of North Carolina, Chapel Hill.

Malkoc, S. A., Zauberman, G., & Ulu, C. (2005). Consuming now or later? The interactive effect of timing and attribute alignability. *Psychological Science, 16*, 411–417.

Muraven, M., Tice, D. M., & Baumeister, R. F. (1998). Self-control as a limited resource: Regulatory depletion patterns. *Journal of Personality and Social Psychology, 74*, 774–789.

Newtson, D. (1973). Attribution and the unit of perception of ongoing behavior. *Journal of Personality and Social Psychology, 28*, 28–38.

Nussbaum, S., Liberman, N., & Trope, Y. (2006). Predicting the near and distant future. *Journal of Experimental Psychology: General, 135*, 152–161.

Nussbaum, S., Trope, Y., & Liberman, N. (2003). Creeping dispositionism: The temporal dynamics of behavior prediction. *Journal of Personality and Social Psychology, 84*, 485–497.

Rosch, E. (1975). Cognitive representations of semantic categories. *Journal of Experimental Psychology: General, 104*, 192–233.

Sagristano, M. D., Trope, Y., Eyal, T., & Liberman, N. (2006). How temporal distance affects attitude-behavior correspondence. Unpublished manuscript, Florida Atlantic University.

Schwartz, S. H. (1992). Universals in the content and structure of values: Theoretical advances and empirical tests in 20 countries. In M. P. Zanna (Ed.), *Advances in Experimental Social Psychology* (Vol. 25, pp. 1–65). New York: Academic Press.

Semin, G. R., & Fiedler, K. (1988). The cognitive functions of linguistic categories in describing persons: Social cognition and language. *Journal of Personality and Social Psychology, 54*, 558–568.

Smith, P. K., & Trope, Y. (2006). You focus on the forest when you're in charge of the trees: Power priming and abstract information processing. *Journal of Personality and Social Psychology, 90*, 578–596.

Staw, B. M. (1981). The escalation of commitment to a course of action. *Academy of Management Review, 6*, 577–587.

Stroop, J. R. (1935). Studies of interference in serial verbal reactions. *Journal of Experimental Psychology: General, 18*, 643–662.

Thomas, M., Chandran, S., & Trope, Y. (2006). The effects of temporal distance on purchase construal. Unpublished manuscript, Cornell University.

Todorov, A., Goren, A., & Trope, Y. (in press). Probability as a psychological distance: Construal and preference. *Journal of Experimental Social Psychology*.

Trope, Y., & Liberman, N. (2000). Temporal construal and time-dependent changes in preference. *Journal of Personality and Social Psychology, 79*, 876–889.

Vallacher, R. R., & Wegner, D. M. (1987). What do people think they're doing? Action identification and human behavior. *Psychological Review, 94*, 3–15.

Vallacher, R. R., & Wegner, D. M. (1989). Levels of personal agency: Individual variation in action identification. *Journal of Personality and Social Psychology, 57*, 660–671.

Wakslak, C. J., Liberman, N., & Trope, Y. (2006). Knee deep in the big muddy, but only from up close: Psychological distance moderates the tendency to make the sunk cost error. Unpublished manuscript, New York University.

Wakslak, C. J., Nussbaum, S., Liberman, N., & Trope, Y. (2006). The effect of temporal distance on the structure of the self concept. Unpublished manuscript, New York University.

Wakslak, C. J., Trope, Y., & Liberman, N. (2006). The effect of construal level on subjective probability estimates. Unpublished manuscript, New York University.

Wakslak, C. J., Trope, Y., Liberman, N., & Alony, R. (2006). Seeing the forest when entry is unlikely: Probability and the mental representation of events. *Journal of Experimental Psychology: General, 135*, 641–653.

Wänke, M., & Bless, H. (2000). The effects of subjective ease of retrieval on attitudinal judgments: The moderating role of processing motivation. In H. Bless & J. P. Forgas (Eds.), *The Message Within: The Role of Subjective Experience in Social Cognition and Behavior* (pp. 143–161). Philadelphia, PA: Psychology Press.

Wechsler, D. (1991). *Wechsler intelligence scale for children* (3rd Edition). San Antonio, TX: Psychological Corporation.