Effects of Construal Level on the Price-Quality Relationship

DENGFENG YAN
JAIDEEP SENGUPTA

Drawing on construal level theory, this research proposes that consumers' reliance on price (vs. feature-specific product attributes) for making quality inferences will be enhanced when the judgment is psychologically distant (vs. close). For example, the impact of price (attributes) on quality inferences should increase (decrease) when these inferences are made with regard to another person rather than oneself. A series of experiments provides support for this thesis. In addition, we (*a*) document a theoretically derived reversal of the core pattern, (*b*) reconcile the current findings with seemingly opposed results in the construal literature, and (*c*) rule out several alternative explanations for the obtained effects. The insights obtained in this work enrich our understanding of three different areas of research: the price-quality link, construal level theory, and the self-other distinction.

Although considerable evidence has shown that consumers often rely on price to infer product quality (for a review, see Kardes et al. [2008]), it is less clear that they do so when they can also get access to information about product attributes. Prior research in this area has yielded mixed findings: while some scholars have found that consumers persistently rely on price as a quality cue even when given attribute information (Kardes et al. 2004), other research has found the opposite, such that the impact of price on quality judgments has been reduced or even nullified when participants were presented with information regarding product attributes (Jacoby, Olson, and Haddock 1971; Szybillo and Jacoby 1974). Obtaining a clearer understanding as to when and why price (vs. attribute information) influences quality inferences is of obvious importance to both consumer researchers and those seeking to influence quality perceptions.

The present research addresses this issue by drawing on construal level theory (Trope and Liberman 2010). Our central premise is that the price cue has greater impact on consumers' quality judgments of psychologically distant versus nearer purchases, with the reverse being true for the impact of feature-specific product attributes. The concept of psychological distance subsumes several dimensions, such as interpersonal distance (e.g., whether the quality inference is drawn on the basis of one's own or another's behavior) and temporal distance (whether the inference has to do with the immediate or distant future). Thus, invoking construal level theory allows us to provide a unified answer as to how price may influence quality perceptions across a variety of contingencies.

This article reports five studies that provide convergent evidence for our key thesis regarding the moderating impact of psychological distance on the price-quality link and, in doing so, advances knowledge in a few different directions. First, it adds to the price-quality literature by identifying a new moderator (construal level), which determines when quality inferences are more likely to be influenced by price versus product attributes. As we discuss later, our conceptualization also provides a possible reconciliation of some seemingly contradictory findings in past work. Second, we make a theoretical contribution to construal level research by advancing the idea that the same information (e.g., price) can be part of high- or low-level construals depending on the judgment goal (e.g., quality vs. purchase intentions). This perspective reconciles the present thesis, which argues

Dengfeng Yan (dengfeng@ust.hk) is a doctoral student and Jaideep Sengupta (mkjaisen@ust.hk) is Chair Professor of Marketing, School of Business and Management, Hong Kong University of Science and Technology, Clear Water Bay, Kowloon, Hong Kong. This article is based on a part of the first author's dissertation, under the guidance of the second author. The authors thank Jiewen Hong, Angela Lee, and Anirban Mukhopadhyay for their constructive comments and suggestions and Alex Tsang for his help in data collection. In addition, the authors are grateful to the editor, the associate editor, and the three reviewers for their insightful guidance and suggestions. Financial support from the Hong Kong Research Grants Council (HKUST RPC 07/08.BM17) is gratefully acknowledged.

Debbie MacInnis served as editor and Frank Kardes served as associate editor for this article.

Electronically published March 22, 2011

 0093-5301/2011/3802-0016$10.00. DOI: 10.1086/659755

for a heightened impact of price with greater psychological distance, with earlier findings that have shown the reverse (Liberman and Trope 1998). Third, by focusing on the self-other distinction (i.e., whether the quality inference is based on one's own or another's behavior) as a key antecedent of psychological distance in several of our studies, we provide fresh insights into the literature on actor-observer effects (Kray and Gonzalez 1999; Nisbett et al. 1973), an area of inquiry that has been relatively neglected in the consumer literature.

THEORETICAL BACKGROUND

Product quality judgments are typically viewed as inferences regarding an unobservable dimension based on observable product features (Erdem and Swait 1998; Rao, Qu, and Ruekert 1999). Such judgments can be in the nature of either abstract, summary inferences of a product's "goodness" (Holbrook and Corfman 1985) or more specific inferences regarding an undescribed dimension, for example, inferring the taste of a food on the basis of extrinsic features such as package attractiveness (Elder and Krishna 2010; Krishna and Morrin 2008). For greater generalizability, the current research operationalizes quality in both of these ways, that is, both as a more specific inference (experiments 1 and 2) and as a summary judgment (experiments 3, 4, and 5). We focus particularly on how quality assessments are influenced by price as compared with information about specific product attributes, which are defined as concrete, observable features that refer to particular aspects of the product, such as the size of an apartment, the number of seats in a car, the stated hard disk capacity of a computer, and so forth (Beales et al. 1981; Garner 1978; Herr, Kardes, and Kim 1991; Johnson 1989; Keller and McGill 1994; Wiener 1985).

The relative influence of price versus attributes on quality perceptions has received much attention from consumer scholars, with early research finding that increasing the price for the same product (e.g., the same beer labeled with different prices) improved quality perceptions (McConnell 1968). While this initial work looked at the impact of price on quality perceptions without any other cues, subsequent research examined whether the impact of price on quality inferences was affected if attributes were also presented to consumers. Of interest, this work has yielded mixed findings. For example, one study found that participants consistently relied on price when asked to make quality judgments, even when certain attributes (e.g., type of wine) were also available (Kardes et al. 2004, 2008). In contrast, Jacoby and his colleagues have found that an originally significant effect of price on quality judgments of products as varied as beer and hosiery samples (Szybillo and Jacoby 1974) became insignificant when participants were also presented with product attribute information (e.g., information regarding beer composition or the materials used in the hosiery samples; Jacoby et al. 1971; Szybillo and Jacoby 1974). Thus, the extant research suggests that there is some inconsistency as to how the impact of price on quality perceptions may be moderated by the presence of other quality-related indicators, such as information regarding specific attributes (see also Broniarczyk and Alba 1994; Rao and Monroe 1988).

Abstract versus Concrete Inputs: Construal Level Theory

While there may be several different ways of addressing this inconsistency, the current research proposes one such resolution by drawing on construal level theory (CLT; Trope, Liberman, and Wakslak 2007). CLT states that objects, events, and individuals can be perceived as being either psychologically near or far along different dimensions of distance such as spatial, temporal, and social (Trope et al. 2007). The key premise of the theory is that psychologically distant objects are represented as abstract, high-level construals that rely on generalized schemas rather than on specific details. In contrast, psychologically close objects are represented as concrete, low-level construals that focus more on specific detail rather than on generalized abstractions. For instance, in the realm of interpersonal distance, it has been found that people describe similar others' actions in relatively more concrete, means-related terms (e.g., construing the act of reading a book as "preparing for an exam") rather than more abstract, ends-related terms (e.g., "getting a high grade"; Liviatan, Trope, and Liberman 2008).

A wealth of similar findings from the construal theory literature (e.g., Förster, Friedman, and Liberman 2004; Liberman and Trope 1998) suggests that abstract information, compared with concrete information, tends to exert more impact on representations and judgments of psychologically distant events, while the reverse holds when the focal judgment is about psychologically near events. We argue that this premise contains direct implications for how quality inferences are formed in different situations. Compared to specific, concrete product attributes, price can be thought of as a more abstract, general cue, especially with regard to its implications for quality. One reason for the relatively more abstract nature of the price cue has to do with its being a universal component for practically all products; thus, the price-quality heuristic itself represents a generalized abstraction of a consumer's many observations and experiences. In contrast, the diagnosticity of attributes is usually specific to different product categories (e.g., hard disk capacity can be used to infer computer quality but is inapplicable to judgments about cars; however, the physical attractiveness of packaging is often used for quality judgments of food items but less so for computers). Another reason for the more abstract nature of the price cue is that it acts as a funnel, reflecting the overall favorability of a product's attributes; thus, an overall set of desirable (undesirable) attributes is usually associated with a high (low) price. Indeed, the idea that the price-quality belief is an abstract "theory" while feature-specific product attributes are more concrete "data" has been widely adopted in previous consumer research (Baumgartner 1995; Broniarczyk and Alba 1994). In

light of this distinction and given the preceding arguments arising from CLT, the following prediction can be made.

H1: Consumers' reliance on price (product attributes) for making quality inferences will be enhanced when the judgment is psychologically relatively distant (relatively close).

Of note, this prediction seemingly conflicts with existing findings in the CLT literature, which have shown that price actually exerts a greater influence on consumer judgments for psychologically nearer compared to more distal purchases (Liberman and Trope 1998; Thomas, Chandran, and Trope 2005). As discussed in more detail subsequently, we resolve this apparent dilemma and contribute to CLT by showing that the same feature (e.g., price) can be part of either low-level or high-level construals depending on the type of judgment being formed, namely, quality inferences (as in the current work) versus purchase intentions (as in past work; e.g., Liberman and Trope 1998).

Overview of Experiments

This article reports five studies that examined our hypothesis regarding the impact of psychological distance on the price-quality relationship. Experiments 1A, 1B, and 2 manipulated interpersonal distance using the "self" versus "other" distinction following other research that has used the same manipulation of psychological distance (Kim, Zhang, and Li 2008). These studies tested the prediction that price (attributes) will have a lower (higher) impact on quality inferences when the quality judgment is made with regard to one's own rather than another's behavior. The self-other dimension is of particular relevance to the question of how consumers form quality inferences since we often make these inferences on the basis of someone else's behavior with regard to the product, whether in an offline (e.g., going shopping with a friend) or an online context (e.g., e-commerce Web sites in which prospective buyers are informed about what other consumers bought in that category). Of more importance, a study of the self-other difference is of theoretical significance in its own right. While consumer researchers have paid relatively little attention to this distinction, the psychology literature has identified various mechanisms to explain the different ways that actors and observers react to and process information, such as knowledge-based mechanisms (we typically know more about ourselves than we do about others; Nisbett et al. 1973) and motivational mechanisms (the tendency to find more positive explanations for our own behavior than another's; Miller and Ross 1975). Our research adds to this literature by showing that actors and observers—the actor-observer distinction is used here interchangeably with the self-other distinction—also differ in the extent to which they are influenced by abstract versus concrete cues.

Subsequent studies sought to increase confidence in our theorizing by generalizing the obtained effects to other dimensions of psychological distance and by illuminating the underlying process. Thus, experiment 3 studied the effects of temporal rather than interpersonal distance. Next, to test the process-related argument that psychological distance has its effect on quality inferences by influencing construal levels, experiment 4 directly manipulated construal type (abstract vs. concrete) prior to quality assessment. In both studies, we argued that the impact of price (attributes) on quality inferences should increase (decrease) at more abstract levels of construal. Finally, experiment 5 tested a crucial boundary condition for these effects by framing the product description so as to increase the relative abstractness of information relating to attributes (vs. price); our conceptualization predicts that doing so should reverse the usual pattern of findings.

EXPERIMENT 1A

Experiment 1A provided an initial demonstration of the hypothesized effect. Participants were asked to judge the tastiness of a dish of fried rice on the basis of two features: its price and its physical attractiveness as conveyed by a picture. There were two reasons for this choice of product attribute. First, prior research has identified visual attractiveness as a key attribute for food items (Elder and Krishna 2010). Second, consumers often have to form inferences about a food based on just these two features: the price of the food and its pictorial appeal (e.g., when placing an order in fast-food restaurants). We predict that the physical attractiveness attribute (price) will have a greater (lower) impact on inferences about tastiness when consumers make a judgment regarding their own order than that of others.

In this study (and also in experiments 1B and 2), we assess quality inferences via judgments of tastiness. As noted earlier, past consumer research has conceptualized product quality either as an abstract, summary judgment of goodness or as an inference about an unobservable—but central—dimension of the product (Rao et al. 1999). Viewed the latter way, the tastiness of a food prior to consumption is a quality inference and has been treated as such by past scholars (Pechmann and Ratneshwar 1992). For greater generalizability, therefore, we test our predictions using this conceptualization of quality in experiments 1A, 1B, and 2 before returning to the treatment of product quality as a summary inference in later studies. We note also that a pilot study (not reported here for reasons of space) that used stimulus materials similar to those used in this experiment found exactly the same price-quality pattern when the dependent variable of tastiness was replaced by an item measuring overall quality.

Method

One hundred and eighty-six undergraduate students from Hong Kong University of Science and Technology were randomly assigned to one of eight conditions, according to a 2 (product attribute favorability: high vs. low) × 2 (price: high vs. low) × 2 (psychological distance: self vs. other) between-subjects design. All participants were told that the

study sought to understand how consumers make judgments in the university student canteen. The cover story asked them to imagine that they (vs. a classmate) had ordered a dish of fried rice at either HK$16 or HK$36 (the average price is about HK$25; US$1 equals approximately HK$7.8) at the student canteen. A picture of the dish was provided; its attractiveness, which is the product attribute under study, was manipulated to be either low or high. A pretest (n = 36) had earlier confirmed that the more attractive picture yielded better ratings of the physical appearance of the fried rice on a 7-point scale (M = 4.17) than the less attractive picture (M = 3.00; $F(1, 34) = 7.64$, $p < .01$).

After seeing the picture, all participants in the main study were asked to predict the tastiness and expensiveness of the fried rice, both along 11-point scales anchored by 0 (not at all tasty/expensive) and 10 (very tasty/expensive).

Results

Manipulation Check. As anticipated, participants in the low-price condition perceived the fried rice as less expensive than those in the high-price condition ($M_{\text{low-p}}$ = 2.96 vs. $M_{\text{high-p}}$ = 6.73; $F(1, 178) = 213.97$, $p < .001$); no other effects from the 2 × 2 × 2 ANOVA were significant.

Hypotheses Testing. A 2 × 2 × 2 ANOVA on judgments of the likely tastiness of the dish revealed significant main effects of price as well as attribute favorability. Participants in the high-price condition judged the fried rice as being tastier than those in the low-price condition ($M_{\text{low-p}}$ = 4.79 vs. $M_{\text{high-p}}$ = 5.66; $F(1, 178) = 10.68$, $p < .01$). Participants in the high–attribute favorability condition (i.e., more attractive appearance) judged the fried rice as tastier than those in the low-favorability condition ($M_{\text{low-fav}}$ = 4.76 vs. $M_{\text{high-fav}}$ = 5.68; $F(1, 178) = 12.50$, $p < .01$).

Of more importance, and in line with predictions, these main effects were qualified by significant two-way interactions with the self-other manipulation. First, we hypothesized that price would have a greater impact on taste judgments in the other versus the self condition. In support, a significant two-way interaction between price and psychological distance ($F(1, 178) = 4.36$, $p < .05$) confirmed that the impact of price was weaker in the self ($M_{\text{low-p}}$ = 5.04 vs. $M_{\text{high-p}}$ = 5.39; M_{diff} = 0.35) than in the other condition ($M_{\text{low-p}}$ = 4.53 vs. $M_{\text{high-p}}$ = 5.98; M_{diff} = 1.45). Second, we predicted that the pattern would reverse for product attribute favorability. In support, a significant interaction between attribute favorability and psychological distance ($F(1, 178) = 6.51$, $p < .05$) confirmed that the physical appearance of the dish had a greater impact on taste judgments in the self ($M_{\text{low-fav}}$ = 4.38 vs. $M_{\text{high-fav}}$ = 6.06; M_{diff} = 1.68) than in the other condition ($M_{\text{low-fav}}$ = 5.12 vs. $M_{\text{high-fav}}$ = 5.39; M_{diff} = 0.27).

Discussion

As an initial demonstration, experiment 1A provided good support for our central hypothesis as to how psychological distance (operationalized here via the self-other distinction) moderates the relative impact of price and attribute favorability on quality judgments. Consistent with predictions, we found that the influence of price increased when judgments were made on the basis of someone else's (rather than one's own) purchase, whereas the reverse was true with regard to the impact of attribute favorability. These results demonstrate a novel contingency as to the relative impact of price versus product attribute on quality inferences, one that has thus far not been identified in the price-quality literature.

EXPERIMENT 1B

The results obtained in experiment 1A, while supportive of our predictions, seem contradictory to past work that has used CLT to examine the relative influence of price and attribute favorability on product judgments (Agrawal, Trope, and Liberman 2006; Liberman and Trope 1998; Thomas et al. 2005). These inquiries have drawn on the desirability-feasibility distinction articulated in CLT. Briefly, in the context of any goal-relevant action, desirability concerns reflect the overall value of the outcome (the answer to the question "why am I undertaking this action?") while feasibility concerns refer to the means used to attain the outcome (the answer to the question "how will I undertake this action?"). CLT proposes that desirability (feasibility) concerns are predominant under high-level (low-level) construals. In line with this proposition, Thomas et al. (2005) hypothesized and found that the influence of price (a feasibility concern) on purchase intentions was greater for immediate than for more distant purchases, while the influence of attribute favorability (a desirability concern) was greater for distant than for immediate purchases.

At first glance, these findings appear to be at odds with the current results, which demonstrate the opposite: price has a greater influence when psychological distance is greater rather than smaller. We believe, however, that the findings are complementary rather than contradictory and that the difference is due to a difference in the dependent variable under study (purchase intentions vs. quality inferences) as well as the uniqueness of price in possessing two distinct connotations. As several scholars have pointed out, price carries both an implication of perceived sacrifice (i.e., having to part with monetary resources) and one of perceived "goodness" (i.e., as a signal of quality; Monroe 2003; Raghubir, Inman, and Grande 2004). We argue that these two different connotations of price become differentially salient depending on the dependent variable that participants are responding to. Issues of feasibility and sacrifice are unlikely to be considered when the dependent variable under study (as in the current research) simply involves quality inferences. Here, price takes on the role of an abstract theory-based heuristic that can be used to make the quality judgment and therefore should exert a greater influence with increased psychological distance, as we find. The scenario is very different, however, when the dependent variable (as in past work) is purchase intentions; now, the monetary

sacrifice aspect of price becomes salient, as participants ask themselves the feasibility-related question "can I afford this?" In such cases, therefore, the influence of price should increase as psychological distance is reduced.

If our reasoning is correct, the pattern of findings obtained in experiment 1A should be reversed by simply replacing the quality judgment with a purchase intention question. Experiment 1B was run to test this prediction. Support for our thesis would not only help to reconcile the current research with past work but also provide theoretical implications for CLT by introducing the idea that the same cue (e.g., price) can be part of high- or low-level construals depending on the judgment task at hand.

The second purpose of experiment 1B is to examine an alternative account for the findings obtained in experiment 1A. People are sometimes less motivated to process information when viewing it from the perspective of another versus the self (Kunda 1990); if so, they may tend to employ heuristics rather than engage in systematic processing (Chaiken 1980). Therefore, consumers may rely more on the price-quality heuristic in the other versus the self condition simply because of such motivational differences. To assess this explanation, experiment 1B included measures of processing motivation.

Method and Results

Participants were 203 undergraduate students who received extra course credit. Exactly the same design and stimuli were used as in experiment 1A. Participants were given price (high/low) and picture (attractive/unattractive) information regarding a dish of fried rice. At this point, however, instead of being asked to provide quality assessments, participants were asked to indicate how likely "you" (vs. "a classmate of yours") would be to purchase this dish, along an 11-point scale anchored by 0 (very unlikely) and 10 (very likely). Finally, as a motivation check, we asked participants to indicate how involved they were while answering the purchase question and also how much thought they had put into it.

Results from a 2 (attribute favorability: high vs. low) × 2 (price: high vs. low) × 2 (psychological distance: self vs. other) ANOVA on purchase intentions revealed significant main effects of price and attribute attractiveness. A higher price yielded lower purchase intentions ($M = 6.09$) than a lower price ($M = 4.64$; $F(1, 195) = 21.33$, $p < .001$). Similarly, high attribute favorability produced higher purchase intentions ($M = 5.76$) than low attribute favorability ($M = 4.66$; $F(1, 195) = 15.12$, $p < .001$).

Of importance, these effects were both moderated by the self-other difference. We hypothesized that, in diametric opposition to its influence on quality ratings, price should have a greater impact on purchase intentions in the self versus the other condition. Results were consistent with this prediction, with a significant interaction between price and psychological distance ($F(1, 195) = 17.01$, $p < .001$) showing that participants' purchase decisions were more affected by price when they were imagining themselves ($M_{\text{low-p}} = 6.49$ vs. $M_{\text{high-p}} = 3.63$; $M_{\text{diff}} = 2.86$) versus others ($M_{\text{low-p}} = 5.65$ vs. $M_{\text{high-p}} = 5.49$; $M_{\text{diff}} = 0.16$) making the purchase. The impact of attribute favorability, however, was greater when participants were imagining others ($M_{\text{low-fav}} = 4.33$ vs. $M_{\text{high-fav}} = 6.81$; $M_{\text{diff}} = 2.48$) versus themselves ($M_{\text{low-fav}} = 5.03$ vs. $M_{\text{high-fav}} = 5.09$; $M_{\text{diff}} = .06$) making the decision (two-way interaction $F(1, 195) = 13.77$, $p < .001$).

Finally, if the findings observed in either this or the previous study were driven by a higher level of processing motivation for the self versus the other condition, we would expect such a difference to be manifested in the motivation index. However, we did not find any significant difference on this measure ($F < 1$), arguing against the motivational account.

Discussion

Experiment 1B seeks to illuminate the contrasting predictions made in the current research with prior work that has used CLT to examine the influence of price on product judgments. We argued that the discrepancy is due to the nature of the dependent variable used in the two sets of research. When the judgment being made is that of purchase intentions, the concrete, feasibility-related connotation of price (i.e., its "economic value"; Raghubir et al. 2004) should be salient. Therefore, price will exert more of an impact when psychological distance is reduced, either temporally (as in previous research; Thomas et al. 2005) or socially (experiment 1B here). However, when the judgment being made is that of product quality (which is the focus of our work), it is the abstract quality connotations of price (i.e., its "information value"; Raghubir et al. 2004) that should be salient. Therefore, price should have a greater impact when psychological distance is increased, as we found in experiment 1A and also demonstrate subsequently.

This reconciliation offers interesting theoretical insights into CLT by introducing the notion that the same feature (e.g., price) can be viewed as being relatively concrete or abstract (and therefore figure in either low- or high-level construals) depending on the salient judgment goal. We ran a supplementary study to validate this thesis, using a classification task that has been widely used in previous CLT work to assess construal level. Participants in one such study were presented with a variety of objects (e.g., camera, brush, shoes, sunglasses) relating to an activity (e.g., camping), which was described as taking place in the upcoming weekend (near future) or 1 year later (distant future). Next, they were asked to classify all the objects into as many different groups as they wished. Supporting the intuitive notion that abstract, high-level construals should be broader and therefore consist of fewer categories than concrete, low-level construals, participants in the distant scenario were found to use fewer categories to classify the objects (Liberman, Sagristano, and Trope 2002).

Using the same paradigm, our supplementary study asked 94 participants to classify 16 different dishes of fried rice, each of which was identified only by a price figure, into as

many groups as they wished: either according to predicted tastiness (i.e., quality) of the dishes or according to purchase likelihood. If our conceptualization is correct and price is treated as being more abstract (and therefore more likely to feature in high-level construals) when the task involves quality judgments rather than purchase intentions, the former should result in fewer distinct categories than the latter. In support, results revealed that participants in the "quality" condition created fewer groups ($M = 3.07$) than those in the "purchase intention" condition ($M = 3.62$; $F(1, 92) = 13.53$, $p < .01$).

To our knowledge, this study, along with the pattern of findings obtained in experiments 1A and 1B, is the first to indicate that the construal level of the same feature (e.g., price) can change depending on the judgment task that is salient. This insight serves both to inform CLT and to reconcile the findings of the current research, which focuses on quality judgments, with those in past research that has obtained different findings in the context of purchase intentions (e.g., Liberman and Trope 1998).

EXPERIMENT 2

Experiment 2 had two objectives. First, we sought to replicate the self-other effect obtained on quality assessments in experiment 1A but using a choice paradigm. Instead of simply being asked to make a quality judgment based on information about a single product, participants were asked to indicate which of two yogurts was tastier: one that was expensive and had an unattractive package or one that was presented as being cheap but attractive. The proportion of participants selecting the former as the tastier of the two should increase in conditions in which the relative impact of price (vs. the packaging attribute) gets enhanced, such as when making the inference from the perspective of an other rather than the self.

Apart from increased generalizability, another objective of the study was to rule out a second alternative interpretation of the results obtained in experiment 1A. In that study, participants were asked to make quality inferences with regard to products that they imagined had already been purchased. That price had less of an impact in the self condition in such scenarios might be due to participants treating the price as a sunk cost and therefore being less sensitive to it than they might otherwise be. In order to refute this account, experiment 2 studied a scenario in which the products being assessed for quality had not already been purchased.

Method

Ninety-four undergraduates participated in this experiment to gain extra course credit. They were randomly assigned to either self or other conditions. Participants were told to imagine that either they or someone else was trying to pick the tastier of two yogurts. The two yogurts were then presented, with one being high in price (HK$10) but low in package attractiveness (as depicted in a product picture) and the second low in price (HK$5) but high in package attractiveness. The packages' pictures were chosen on the basis of pretesting, in which the more attractive package was rated more favorably ($M = 6.75$) than the less attractive package ($M = 3.60$; $F(1, 38) = 45.68$, $p < .001$). After viewing the price and package information for both yogurts, participants indicated which one was likely tastier on a simple dichotomous scale. Finally, they rated the expensiveness of each of the options on 11-point scales.

Note that even though the procedure here has to do with a choice between two options rather than assessing the quality of a single option, the key dependent variable still involves quality inferences (to do with tastiness), not purchase intent. Thus, we expected to replicate the pattern obtained in experiment 1A such that price (packaging) should exert a greater impact in the other versus the self condition.

Results

Manipulation Check. As expected, the high-price/low-attractive yogurt was judged more expensive ($M_{\text{high-p}} = 6.49$) than the low-price/high-attractive one ($M_{\text{low-p}} = 3.87$; $t(93) = 13.85$, $p < .001$), testifying to the efficacy of the price manipulation.

Tastiness Choice. Consistent with the prediction that price (package attractiveness) would have more (less) of an impact in the other than in the self condition, the proportion of participants who selected the high-price, less attractive yogurt as being the tastier one was significantly higher ($\chi^2(1) = 8.43$, $p < .01$) in the other condition (21/47) than in the self condition (8/47). We note that in both cases, the majority chose the low-price, more attractive option as being tastier. This baseline effect may reflect that the package manipulation in this study was stronger than the price manipulation; it does not, however, detract from the support offered to our key hypothesis, which refers to the change in impact of the two features given a change in psychological distance.

Discussion

Using a choice rather than a judgment paradigm, experiment 2 once again provided evidence supportive of our key hypothesis as to how psychological distance moderates the relative influence of price (vs. product attributes) on quality inferences. In addition to enhancing generalizability, the procedure used in experiment 2 rules out the possibility that prior findings depicting the lower influence of price in the self (vs. other) conditions were simply due to those scenarios having depicted a postownership context, which might relegate price to a sunk cost. Exactly the same pattern of results was obtained using a preownership scenario in this study.

While we have ruled out some different alternate explanations for our findings, there is another that is noteworthy. The actor-observer literature has shown that in making judgments with regard to others, people tend to exclusively focus only on important, diagnostic information, whereas when making judgments with regard to self, they are motivated to use all available information—irrespective of its impor-

tance. Thus, the influence of relatively unimportant information increases in the self condition, simultaneously diluting the influence of more important, diagnostic cues (Kray and Gonzalez 1999). In our context, this alternate explanation would argue that if price is a more important feature than the product's appearance, its impact will be lower when judgments are made with regard to oneself than to others (in the former case, the influence of price will be diluted by the impact of the less important feature—the product's appearance). However, for this explanation to hold, price should be perceived as being more important than package attractiveness. To examine this, we asked 40 participants from the same pool to indicate the importance and informativeness (i.e., diagnosticity) of price and package attractiveness in judging yogurt tastiness. Price was judged both less important ($M_{price} = 5.15$ vs. $M_{package} = 7.02$; $t(39) = 5.26$, $p < .001$) and less informative ($M_{price} = 5.22$ vs. $M_{package} = 6.45$; $t(39) = 3.45$, $p < .01$) than package attractiveness as a quality cue for yogurt, militating against the information importance account. We note that two alternative explanations for our findings (e.g., the possibility that the increased reliance on price in the other condition is driven by a self-serving bias) are addressed in experiment 5.

EXPERIMENT 3

While experiments 1A and 2 yielded results supportive of our key hypothesis, both of them operationalized psychological distance using the self-other dimension. The next two studies sought to obtain triangulating support for our theorizing by using two different operationalizations of construal level. To this end, experiment 3 investigated the moderating impact of temporal distance on the relative influence of price and attribute favorability. Examining the influence of temporal distance is important in its own right because consumers need to make product quality judgments not only for immediate use but also, on occasion, with regard to the future. For instance, one might want to judge the quality of a computer with a view to immediate or future purchase: does this distinction have an influence on the relative influence of available cues? We examine this issue in experiment 3 and, in doing so, add to the body of work on the effects of temporal distance (Förster et al. 2004; Kim, Rao, and Lee 2009). While this area of research has provided many interesting insights into how consumers' decisions vary as a function of time horizon, it has not yet examined its influence on quality inferences.

Experiment 3 also sought to generalize our findings along another dimension. Attribute favorability in all the preceding studies was manipulated via the physical appearance of the product (or its packaging); we now examined whether similar results would be obtained if the attributes under study related to the functionality of the product, such as the hard drive capacity of a computer.

Method

A 2 (price: high vs. low) × 2 (attribute favorability: high vs. low) × 2 (psychological distance: near vs. distant) between-subjects design was used ($n = 202$). All participants were told that the study sought to understand how consumers make quality judgments. The product studied was one that participants were familiar with, a laptop computer. Those in the near (distant) future condition were asked to imagine buying a laptop tomorrow (2 months later). They then saw a brief description of a laptop computer whose attributes and price were manipulated. Price was described as being HK$5,000 (low) or HK$10,000 (high). Attribute favorability was manipulated by describing the computer as possessing either 1 gigabyte (GB) of RAM and a 60-GB hard drive or a RAM of 4 GB and a 160-GB hard drive. Pretests had shown that the latter attribute configuration was rated more favorably than the former. After studying the configuration information and the price, participants were asked to judge the quality of the computer (0 = very poor; 10 = very good) followed by its expensiveness (0 = very cheap; 10 = very expensive).

Results and Discussion

The 2 × 2 × 2 ANOVA revealed only a significant main effect of the price manipulation on expensiveness ratings ($F(1, 194) = 125.87$, $p < .001$). As anticipated, participants in the low-price condition perceived the computer as less expensive than those in the high-price condition ($M_{low\text{-}p} = 3.73$ vs. $M_{high\text{-}p} = 6.63$).

The analysis of quality predictions produced main effects of both price ($M_{high\text{-}p} = 6.51$ vs. $M_{low\text{-}p} = 5.06$; $F(1, 194) = 61.67$, $p < .001$) and attribute favorability ($M_{high\text{-}fav} = 6.25$ vs. $M_{low\text{-}fav} = 5.30$; $F(1, 194) = 26.43$, $p < .001$). As predicted, a significant two-way interaction between price and temporal distance ($F(1, 194) = 11.88$, $p < .001$) then revealed that price had a weaker impact when participants imagined that the purchase was for the next day ($M_{low\text{-}p} = 5.42$ vs. $M_{high\text{-}p} = 6.24$; $M_{diff} = 0.82$) versus 2 months later ($M_{low\text{-}p} = 4.66$ vs. $M_{high\text{-}p} = 6.78$; $M_{diff} = 2.12$). Also as hypothesized, the impact of attribute favorability was greater in the temporally near ($M_{low\text{-}fav} = 5.11$ vs. $M_{high\text{-}fav} = 6.55$; $M_{diff} = 1.44$) than in the distant condition ($M_{low\text{-}fav} = 5.48$ vs. $M_{high\text{-}fav} = 5.96$; $M_{diff} = 0.48$; $F(1, 194) = 6.60$, $p < .05$).

While this overall pattern of results was encouraging, the two-way interactions above were also modified by an unexpected three-way interaction between price, attribute favorability, and temporal distance ($F(1, 194) = 6.02$, $p < .05$). To understand the nature of this interaction (which was not obtained in any of the other studies), we separately examined the pattern of price effects within each level of attribute favorability, and vice versa (see table 1 for cell means). The influence of price followed the predicted pattern in the favorable attribute condition; namely, greater distance yielded a greater effect of price, as manifested in a larger difference score for high versus low price (M_{diff} for near =

TABLE 1

EXPERIMENT 3: QUALITY JUDGMENT AS A FUNCTION OF PRICE, ATTRIBUTE, AND TEMPORAL DISTANCE

Temporal distance	Price	Attribute	Mean (SD)
Near	Low	Unfavorable	4.29 (1.30)
		Favorable	6.54 (1.30)
	High	Unfavorable	5.92 (1.32)
		Favorable	6.56 (1.58)
Far	Low	Unfavorable	4.48 (1.16)
		Favorable	4.85 (1.19)
	High	Unfavorable	6.48 (1.26)
		Favorable	7.08 (1.47)

0.02; M_{diff} for far = 2.22; change in difference scores = 2.20; $F(1, 194) = 17.76$, $p < .01$). Given less favorable attributes, however, this pattern, while in the right direction, was not significant (M_{diff} for near = 1.63; M_{diff} for far = 2.00; change in difference scores = 0.37; $F < 1$). A similar pattern held for the influence of attribute favorability. Given a low price, the influence of attribute favorability was higher, as predicted, with lower temporal distance (M_{diff} for near = 1.25; M_{diff} for far = 0.37; change in difference scores = 0.88; $F(1, 194) = 12.61$, $p < .01$); however, this effect was not significant under a high price (M_{diff} for near = 0.64; M_{diff} for far = 0.59; change in difference scores = 0.05; $F < 1$).

Thus, experiment 3 provided partial support for our predictions. Speculatively, the reason for this may have to do with calibration issues. Namely, the temporal distance manipulation used in this study might not have led to enough of a separation between the near and far conditions, so that the influence of the two factors (price vs. attributes) was not as cleanly demarcated as in other studies. To assess whether a stronger induction of construal level might yield more complete support, the next study used a direct manipulation of construal level.

EXPERIMENT 4

The next study sought to enhance confidence in our posited mechanism, which accords a central role to construal level. We have argued that psychological distance has the effect it does on quality inferences because it changes the level of construal; specifically, greater distance yields a superordinate, ends-related, abstract construal (thus increasing the effect of price on quality judgments), whereas lower distance yields a subordinate, means-related, concrete construal (thus increasing the impact of attributes). The literature on CLT already provides substantial evidence for the first link of this chain of reasoning, namely, that psychological distance influences construal levels (Liviatan et al. 2008; Trope et al. 2007). However, for our mechanism to be supported, we need to provide evidence for the second link, that is, that construal level itself directly influences the relative impact of price and product attributes on quality inferences. Experiment 4 sought to do so by directly manipulating construal level through an initial task that caused participants to activate an "abstract" or "concrete" mind-set.

Also of note, we used the same stimuli as in experiment 3 so as to check whether a direct manipulation of construal level might enable us to provide stronger support for the predictions than was obtained in that study.

Method

A 2 (attribute favorability: high vs. low) × 2 (price: high vs. low) × 2 (construal level: high vs. low) between-subjects design was used ($n = 197$). The experiment consisted of two phases. Phase 1 manipulated construal level by asking participants to think about and write either why we should do exercises or how to exercise (Freitas, Gollwitzer, and Trope 2004). Existing literature has found that repeatedly thinking in terms of "why" (vs. "how") activates superordinate, abstract thought (as opposed to subordinate, concrete thinking), and this manipulation has frequently been used to directly influence construal levels (Agrawal and Wan 2009). Following the why/how manipulation, we assessed level of action construal via the Behavior Identification Form (BIF; Vallacher and Wegner 1989). This form consists of 25 items, each of which asks respondents to select between two descriptions of the same behavior (e.g., ringing a doorbell): one that comprises higher-level construals related to goals or "why" considerations (e.g., "seeing if someone is home") and another that comprises lower-level construals related to means or "how" considerations (e.g., "moving your finger").

This ended phase 1. In phase 2, we told participants that they would now be asked to complete an unrelated task that sought to assess their product knowledge. The same stimuli and procedure were used in this task as in experiment 3.

Results

Manipulation Check. The composite BIF score, which was obtained by summing up responses to all 25 items in the BIF form (for each item, 1 = high-level construal, 0 = low-level construal), revealed a significant effect of only construal level ($F(1, 189) = 60.96$, $p < .001$). Confirming that our construal level manipulation was successful, participants primed with the superordinate why mind-set scored higher than those primed with the subordinate how mind-set ($M_{why} = 17.02$ vs. $M_{how} = 13.41$).

Hypotheses Testing. A 2 × 2 × 2 ANOVA on quality ratings revealed main effects of price ($M_{high\text{-}p} = 6.15$, $M_{low\text{-}p} = 4.31$; $F(1, 189) = 67.61$, $p < .001$) and attribute favorability ($M_{high\text{-}fav} = 5.77$, $M_{low\text{-}fav} = 4.69$; $F(1, 189) = 23.11$, $p < .001$). Each of these was qualified by an interaction with construal level. As predicted, price had a greater influence under high-level ($M_{low\text{-}p} = 3.99$, $M_{high\text{-}p} = 6.34$; $M_{diff} = 2.35$) than under low-level construal ($M_{low\text{-}p} = 4.62$, $M_{high\text{-}p} = 5.96$; $M_{diff} = 1.34$; $F(1, 189) = 5.01$, $p < .05$). The effect of attribute favorability, in contrast, was greater under low-level ($M_{low\text{-}fav} = 4.44$, $M_{high\text{-}fav} = 6.14$; $M_{diff} = 1.70$) than under

high-level construal ($M_{\text{low-fav}} = 4.94$, $M_{\text{high-fav}} = 5.40$; $M_{\text{diff}} = 0.46$; $F(1, 189) = 7.56$, $p < .01$).

Discussion

Findings from this study provided direct evidence regarding the predicted impact of construal levels on the relative impact of price and attribute favorability on quality judgments. Consistent with the logic underlying our research, we found that price has a greater impact on quality judgments when high-level, abstract thinking is activated, whereas attribute favorability exerts a greater influence under more concrete, low-level thought. The convergence between the findings obtained in this study with those from our previous studies, which used distance-based manipulations, provides confidence as to the mechanism underlying those results.

A key assumption underlying our results thus far is that price information is more abstract than the product attribute information provided to respondents. As mentioned earlier, theoretical insights from prior research (e.g., Baumgartner 1995; Broniarczyk and Alba 1994) are consistent with this assumption; however, given its centrality to the current investigation, we also ran a posttest to provide empirical validation, using the computer stimuli studied previously. Participants ($N = 40$) were first asked to rate the quality of one of four laptop computers; each computer was described by a price attribute configuration corresponding to one of the four versions used in experiments 3 and 4 (e.g., the low-price/favorable attributes computer was described as possessing a RAM of 4 GB, a 160-GB hard drive, and a price of HK$5,000). After the quality rating task, we administered three distinct measures to assess the abstractness-concreteness rating of each of the pieces of product information: price, RAM, and hard disk capacity.

The three measures tapped into different aspects of the abstractness-concreteness dimension. The first measure directly asked participants to indicate how abstract or concrete they found each of the three pieces of product information, in counterbalanced order (1 = very abstract; 7 = very concrete). The second measure, which has been used in prior research (Chandran and Menon 2004) to assess concreteness-abstractness, is based on the notion that more concrete information is easier to visualize. This item required respondents to rate each of the three pieces of product information from the study with regard to ability to trigger a visual image (1 = very low; 7 = very high). The last measure was based on a related distinction between cues and components that has been made in prior research (Connolly and Srivastava 1995; Sanbonmatsu et al. 1997). According to this view, a "cue" (such as the overall rating of a music system) is a global, abstract feature that functions as a summary judgment and is not restricted to a specific product aspect; thus, it can signal the value of even nonpresented product information. Such inferences about nonpresented information are less likely to be drawn from concrete "components," which provide information specific to the feature being described (e.g., ratings of the particular units that constitute the music system, such as the compact disk player, speakers, or the receiver). If price does function like a relatively abstract signal (i.e., cue) compared to the concrete attributes (components) in our study, a similar distinction with regard to inferences about unmentioned attributes should be observed. To assess this, participants were asked to indicate the extent to which they agreed or disagreed with each of three statements: laptops sold at a (*a*) higher price, (*b*) higher RAM, or (*c*) larger hard disk possess a longer battery life (1 = strongly disagree; 7 = strongly agree). Note that battery life information had not been presented to participants. In light of our assumption regarding the greater abstractness of the price cue and therefore its greater predictive power, we expected that respondents would be more likely to infer a longer battery life from higher price (rather than from higher RAM/larger hard disk).

Results on all three items were supportive of the assumption that price in this study is a more abstract cue than the specific product attributes. On the first, direct measure, price information was perceived as being more abstract—that is, less concrete—($M = 3.60$) than information about RAM ($M = 4.22$; $t = 2.53$, $p < .05$) or hard disk ($M = 5.25$; $t = 9.50$, $p < .001$); the second measure found that price was less visualizable ($M = 4.00$) than RAM ($M = 4.52$; $t = 2.44$, $p < .05$) and hard disk information ($M = 5.28$; $t = 5.50$, $p < .001$); the third measure found that price was more predictive of the nonpresented attribute, battery life ($M = 4.70$), than was either RAM ($M = 3.62$; $t = 4.85$, $p < .001$) or hard disk information ($M = 3.05$; $t = 7.62$, $p < .001$).

EXPERIMENT 5

Our theorizing holds that the key difference between price and product attributes (which drives their differential influence on quality perceptions as a function of psychological distance) has to do with their relative level of abstractness versus concreteness. The thesis that product attributes are typically more concrete than the price cue is supported both conceptually by the commonly held view of attributes as being observable, specific features of the product (e.g., Beales et al. 1981; Garner 1978; Johnson 1989; Keller and McGill 1994) and also empirically by the posttest reported above. Of importance, however, prior work using CLT has documented that changing the way in which information is presented can directly influence whether that piece of information is perceived to be relatively abstract or concrete; for instance, describing a set of disease-related risks in terms of their per-day (vs. per-year) likelihood has been shown to increase the concreteness of the risks (Chandran and Menon 2004; Raghubir 2008).

The premise that perceptions of abstractness/concreteness can be manipulated via presentation mode suggests another way of testing a central aspect of our theorizing. If our conceptualization is accurate, the results obtained so far should be reversed if information is presented in such a way as to increase the relative abstractness of attributes as compared to price. The final experiment tested this thesis in the

context of the self-other difference. We deliberately returned to the social distance dimension in order to refute two further alternative explanations (described later) for the findings obtained in the first two experiments, which had also focused on this dimension.

Method

Stimuli. Like experiments 3 and 4, this study also used laptop computers as the stimulus and presented participants with information about the computer's price and configuration. However, the manner of presenting the information was changed in order to enhance the relative abstractness of the configuration (vs. price) information. Two major changes were made. First, in order to make the configuration information more abstract, it was presented in the form of a single overall rating (i.e., superior vs. inferior configuration) rather than in the form of specific details about separate configuration aspects (such as the size of the RAM and the hard drive). This induction is consistent with research on the cue-component distinction, which has found that information about product attributes functions as a general and abstract cue when several attributes are summarized into a single evaluative index; such a summary index allows respondents to draw global inferences about the product's overall value and also about nonmentioned aspects (Connolly and Srivastava 1995).

Second, we simultaneously sought to make the price information more concrete by increasing precision (e.g., HK$5,199 instead of HK$5,000); the greater detail involved in the more precise figure should enhance concreteness (Alba and Chattopadhyay 1985). Viewed in another way, the more precise number involves narrower categories: the figure of 5,000 is specified at the broad level of thousands, whereas the 5,199 figure additionally involves the narrower category of hundreds. Note that the changes in both configuration and price information were targeted at a common goal, which was to enhance the relative abstraction of the configuration information vis-à-vis the price information; we were not concerned here with the extent to which each specific induction satisfied this goal.

Participants, Design, and Procedure. A 2 (price: high vs. low) × 2 (attribute configuration: favorable vs. unfavorable) × 2 (self vs. other) between-subjects design was used; $n = 223$. Participants were told that the study sought to understand how consumers judge laptop computer quality. Those in the self (other) condition were asked to imagine that "you (someone you don't know) bought a laptop." They then saw a brief description of a laptop computer for which price and configuration information was presented. Price was described as being HK$5,199 (low) or HK$10,199 (high). Configuration favorability was manipulated by describing the computer as possessing either a "superior" or "inferior" configuration. Participants were then required to judge the quality and predicted performance of the computer (0 = very poor; 10 = very good; $r = 0.96$). Finally, perceptions of abstractness-concreteness were assessed using the same three items as before. Specifically, participants were asked to rate both the price and configuration information that they had just been exposed to on (*a*) abstractness-concreteness, (*b*) visualizability, and (*c*) inferences regarding an unmentioned attribute, battery life.

Results

Cue Abstractness. Three sets of measures provide convergent evidence that information about attribute configuration, as presented in this study, was perceived to be relatively more abstract than the price information. Specifically, configuration information was rated to be less concrete ($M_{\text{config}} = 4.08$ vs. $M_{\text{price}} = 5.10$; $F(1, 215) = 42.24$, $p < .001$), less visualizable ($M_{\text{config}} = 4.32$, $M_{\text{price}} = 5.04$; $F(1, 215) = 29.29$, $p < .001$), and more predictive of a nonmentioned attribute, battery life ($M_{\text{config}} = 5.59$, $M_{\text{price}} = 4.46$; $F(1, 215) = 101.18$, $p < .001$). None of these measures was affected by the independent variables and their interactions.

Hypotheses Testing. The analysis of quality ratings revealed the expected main effects for price ($M_{\text{high-p}} = 7.27$ vs. $M_{\text{low-p}} = 5.82$; $F(1, 215) = 29.29$, $p < .001$) and configuration ($M_{\text{superior}} = 7.88$ vs. $M_{\text{inferior}} = 5.27$; $F(1, 215) = 95.50$, $p < .001$). Of more importance, both main effects were qualified by their interaction with the self-other manipulation. We had argued that the earlier pattern of findings should be reversed in this study, such that price (attribute configuration) would exert a greater (lower) influence in the self than in the other condition. In support of our predictions, a significant interaction between price and social distance ($F(1, 215) = 3.88$, $p = .05$) revealed that price had a weaker impact when participants imagined that the laptop was bought by others ($M_{\text{low-p}} = 6.18$ vs. $M_{\text{high-p}} = 7.13$; $M_{\text{diff}} = 0.95$) versus themselves ($M_{\text{low-p}} = 5.49$ vs. $M_{\text{high-p}} = 7.52$; $M_{\text{diff}} = 2.03$). In contrast, the impact of attribute configuration was greater in the other ($M_{\text{inferior}} = 5.00$ vs. $M_{\text{superior}} = 8.31$; $M_{\text{diff}} = 3.31$) than in the self condition ($M_{\text{inferior}} = 5.48$ vs. $M_{\text{superior}} = 7.53$; $M_{\text{diff}} = 2.05$; $F(1, 215) = 5.15$, $p < .05$).

Discussion

Experiment 5 provided further support for the mechanism underlying the key finding observed in our earlier studies: namely, that price (attributes) exerts a greater influence with greater (lower) psychological distance. Our conceptualization argues that this pattern obtains because the price cue, which lends itself to a summary inference about the product's overall quality, is seen to be more abstract than typical feature-specific attributes that describe individual components of a product. If true, the core finding should reverse if information about price and product attributes is framed in such a manner as to reverse their relative abstractness/concreteness, for example, by presenting the attribute information in the form of a single, overall evaluative index and increasing the preciseness of the price information. As predicted, such a reversal was obtained. In addition to the

theoretical support it provides for our CLT-based conceptualization, this finding is also of managerial interest by showing how one might manipulate the influence of attribute information and price on quality assessments.

Experiment 5 also served to rule out two alternative explanations for the findings obtained earlier (experiments 1A and 2) regarding the influence of the self-other dimension on the relative influence of price versus attributes on quality assessments. The first such alternative account has to do with the possibility of a self-serving bias. Namely, the influence of attributes (price) on quality judgments in the self (other) condition could have been heightened because individuals believe that it is more rational to rely on attributes and that it is only others who will follow the less rational route of relying on the price heuristic (Pronin 2009; Pronin, Gilovich, and Ross 2004). However, this alternative account would have predicted a similar pattern even in experiment 5: that a reversal was obtained when attribute information was presented in a relatively more abstract manner is instead consistent with our construal-based conceptualization.

Another alternative explanation for our earlier findings is that in those studies, price was the only quantitative cue; thus, if participants feel that they have to rely on more objective, defensible cues when making other-based assessments, this could explain the greater reliance on price (vs. attributes) in the other (vs. self) conditions. Again, however, such an account would not explain the reversal obtained in experiment 5, in which price remained the only quantitative cue.

GENERAL DISCUSSION

The central idea of this research is that the extent to which consumers rely on a particular aspect while forming inferences about product quality is enhanced (reduced) by its compatibility (incompatibility) with the way in which consumers construe the scenario. Given high-level construals, such as those obtaining with increased psychological distance, a reliance on abstract cues such as price should increase. However, given low-level construals of the sort more likely to obtain with decreased psychological distance, a reliance on more concrete cues, such as product-specific attributes, should increase. A series of five experiments provided support for these predictions. Experiment 1 and 2 used the self versus other interpersonal dimension to operationalize psychological distance. In line with our hypotheses, results across these studies showed that participants relied more on price than on product attributes when predicting product quality from an other versus self perspective; the influence of product attributes followed the reverse pattern. Experiment 3 obtained support for the predictions, albeit at a weaker level, using a different (temporal) dimension of psychological distance. Experiment 4 then provided strong support for the posited mechanism by directly manipulating construal level; results revealed that price influenced quality judgments more for high-level than for low-level construals, whereas the opposite was true of product attributes. Finally, experiment 5 provided further support for the key role of the abstractness-concreteness dimension by obtaining a reversal of results when attribute information was framed in a relatively more abstract manner than price information; in such a case, the influence of price (attribute information) decreases (increases) with greater distance.

It is noteworthy that convergent support for our predictions was obtained across a variety of product categories, different dependent variables (e.g., single-option quality judgments as well as the choice paradigm used in experiment 2), pre- and postpurchase scenarios, and different manipulations of construal level. This convergence enhances our confidence in the posited conceptualization.

Contributions and Implications

The current investigation advances theoretical knowledge in several significant bodies of work, namely, research on the price-quality inference, construal level theory, and the actor-observer literature.

Price-Quality Research. This inquiry contributes to the rich body of research that has examined consumers' use of the price-quality heuristic by identifying an important moderator, namely, construal level. Apart from being significant in its own right as a contingency that influences the relative impact of price on quality inferences, the construal level moderator is also of use because it can serve to reconcile several earlier findings in this literature. For instance, because greater familiarity with an object reduces the psychological distance from it (Trope et al. 2007), we would expect a lower reliance on price (and enhanced use of attribute information) when forming quality inferences for highly familiar products, other things being equal. This argument may help to explain the insignificant effect of price on quality ratings found in Jacoby et al. (1971), where the product under study was beer and the participants were adult male drinkers (and thus, presumably, quite familiar with the product). This contingency may also have held in another study in which quality was influenced by product attributes rather than price (Szybillo and Jacoby 1974); the participants in this study (female undergraduates) were likely familiar with the stimulus used (i.e., hosiery). However, Kardes et al.'s (2004) finding of a strong price effect on quality judgments may be explained on the grounds that study participants (undergraduates) were not very familiar with the product (wine), explaining their reliance on price.

Prior research has also found a lower reliance on price for making quality inferences when information load is high (vs. low) and when the information is presented randomly (vs. in list format; Kardes et al. 2004). High load and random presentation format are both associated with low-level construals (Trope et al. 2007); the current conceptualization thus provides a unified explanation for these seemingly unrelated effects. Finally, a construal level account can also be fruitfully applied to the finding that Chinese consumers exhibit a weaker price-quality link than American consumers (Zhou, Su, and Bao 2002). Research on regulatory focus has shown that Chinese consumers are more prevention focused than

American consumers, who tend to be relatively promotion focused (Aaker and Lee 2001); further, prevention (promotion) focus is associated with a low (high) level of construal (Lee, Keller, and Sternthal 2010). Therefore, Chinese consumers are presumably more likely to engage in low-level construals, providing one explanation for their lower reliance on price when judging quality.

Overall, the construal level conceptualization used in this research has the potential to account for a variety of earlier findings in the price-quality literature. It should be recognized, however, that this reinterpretation of past work is speculative. It is likely that factors other than construal level were also at play in these earlier studies, and a systematic empirical investigation is required to validate a construal-based account.

Construal Level Theory. The present work not only draws from CLT but adds to this literature in two different ways. First, prior research that has applied CLT to consumer judgments has examined preference-related judgments; the current work is the first to apply the theory to inference making. Second, and of more importance, we contribute to the basic theory by suggesting (and obtaining support for) the notion that the same cue can be part of high-level or low-level construals depending on the judgment task. Specifically, our results indicate that the abstract connotations of price (i.e., its role as a signal of "goodness") are salient when quality judgments are assessed (experiment 1A), whereas the concrete aspects of price (i.e., the feasibility considerations associated with monetary sacrifice) are salient when purchase intentions are assessed (experiment 1B). Follow-up results from a categorization study testified to the change in the construal level of price depending on judgment task. Not only does this insight help to resolve the current findings with those in earlier research (e.g., Liberman and Trope 1998; Thomas et al. 2005), it serves to inform CLT. While prior research has shown that the manner of presenting the cue can influence its abstractness/concreteness (and therefore its effect at different levels of construal; e.g., Chandran and Menon 2004), we believe that the current investigation is the first to highlight the influence of the prevailing judgment task on abstractness/concreteness considerations, even when presentation format is kept constant.

The Self-Other Difference. The self-other distinction (also labeled the actor-observer distinction) has attracted considerable research attention since the 1970s, with various differences having been identified between the way people process information with regard to others versus themselves (Jones and Nisbett 1971; Kray and Gonzalez 1999). Employing CLT, the present work adds to this research by showing that the reliance given to concrete versus abstract information also changes as a function of the self-other perspective. Of note, other processing differences that have been identified in prior work on the self-other distinction cannot explain the current pattern of findings. For instance, past research suggests that people are more motivated to process information about self than about others; however, as discussed earlier, this distinction cannot account for our results. Similarly, the greater knowledge that we typically have about ourselves versus others also does not explain the results. Such a knowledge-based explanation would argue that because of a richer schema about the self, the impact of any one cue should be lower when judgments are made from the perspective of the self versus the other. While this may explain why the impact of one feature (price) is lower for the self-perspective in our studies, it does not explain why the impact of the other feature (attributes) is enhanced. Finally, the current results are also not explained by the self-serving bias, which argues that people are prone to think that they have more rational (e.g., attribute-based) considerations for their judgments as compared to the heuristic biases (e.g., a reliance on price) that may be true of others. This account would not be able to explain the reversal of findings obtained in experiment 5, although that pattern is consistent with our construal-based conceptualization. In sum, none of the established self-other distinctions seems to explain the current findings, thus enhancing the contribution of the present research to that body of work.

Limitations and Future Research

The results obtained in the current set of studies, while offering reassuringly consistent insights into the relative impact of price and attributes on quality inferences, should be utilized with caution because the environment in which consumers make quality judgments is sometimes significantly more complicated than was the case in the experimental settings studied here. Thus, the probability and extent to which a cue will be used in quality judgments depends on multiple factors, such as the likelihood that consumers will attend to this cue, perceived cue diagnosticity, consumers' knowledge, and processing resources. We leave to future research the task of integrating these diverse factors into a more general framework of cue utilization.

We believe that the theoretical rationale identified here could apply to a variety of cues and contexts. With regard to context, it would be interesting to examine the moderating impact of other kinds of psychological distance such as spatial distance; our theorizing would predict a greater reliance on price when judging the quality of objects that are further away. Future research could also investigate whether other cues that vary along the abstract-concrete dimension exercise a different influence on quality judgments depending on construal level. For instance, our findings would predict that, as with price, consumers will rely more on relatively abstract features such as brand name, country of origin, and store image with greater psychological distance. Research examining such predictions both would have applied value and also reinforce the current theoretical arguments.

REFERENCES

Aaker, Jennifer L. and Angela Y. Lee (2001), "'I' Seek Pleasures and 'We' Avoid Pains: The Role of Self-Regulatory Goals in

Information Processing and Persuasion," *Journal of Consumer Research*, 28 (1), 33–49.

Agrawal, Nidhi, Yaacov Trope, and Nira Liberman (2006), "Value from Highlighting Time Appropriate Outcomes," unpublished manuscript, Kellogg School of Management, Northwestern University.

Agrawal, Nidhi and Echo Wen Wan (2009), "Regulating Risk or Risking Regulation? Construal Levels and Depletion Effects in the Processing of Health Messages," *Journal of Consumer Research*, 36 (3), 448–62.

Alba, Joseph W. and Amitava Chattopadhyay (1985), "The Effects of Context and Part Category Cues on the Recall of Competing Brands," *Journal of Marketing Research*, 22 (August), 340–49.

Baumgartner, Hans (1995), "On the Utility of Consumers' Theories in Judgments of Covariation," *Journal of Consumer Research*, 21 (4), 634–43.

Beales, Howard, Michael B. Mazis, Steven C. Salop, and Richard Staelin (1981), "Consumer Search and Public Policy," *Journal of Consumer Research*, 8 (1), 11–22.

Broniarczyk, Susan M. and Joseph W. Alba (1994), "Theory versus Data in Prediction and Correlation Tasks," *Organizational Behavior and Human Decision Processes*, 57 (1), 117–39.

Chaiken, Shelly (1980), "Heuristic versus Systematic Information Processing and the Use of Sources versus Message Cues in Persuasion," *Journal of Personality and Social Psychology*, 39 (5), 752–66.

Chandran, Sucharita and Geeta Menon (2004), "When a Day Means More than a Year: Effects of Temporal Framing on Judgments of Health Risk," *Journal of Consumer Research*, 31 (2), 375–89.

Connolly, Terry and Joydeep Srivastava (1995), "Cues and Components in Multiattribute Evaluation," *Organizational Behavior and Human Decision Processes*, 64 (2), 219–28.

Elder, Ryan S. and Aradhna Krishna (2010), "The Effects of Advertising Copy on Sensory Thoughts and Perceived Taste," *Journal of Consumer Research*, 36 (5), 748–56.

Erdem, Tülin and Joffre Swait (1998), "Brand Equity as a Signaling Phenomenon," *Journal of Consumer Psychology*, 7 (2), 131–57.

Förster, Jens, Ronald S. Friedman, and Nira Liberman (2004), "Temporal Construal Effects on Abstract and Concrete Thinking: Consequences for Insight and Creative Cognition," *Journal of Personality and Social Psychology*, 87 (2), 177–89.

Freitas, Antonio L., Peter Gollwitzer, and Yaacov Trope (2004), "The Influence of Abstract and Concrete Mindsets on Anticipating and Guiding Others' Self-Regulatory Efforts," *Journal of Experimental Social Psychology*, 40 (6), 739–52.

Garner, Wendell R. (1978), "Aspects of a Stimulus: Features, Dimensions, and Configurations," in *Cognition and Categorization*, ed. Eleanor Rosch and Barbara B. Lloyd, Hillsdale, NJ: Erlbaum, 99–133.

Herr, Paul M., Frank R. Kardes, and John Kim (1991), "Effects of Word-of-Mouth and Product-Attribute Information on Persuasion: An Accessibility-Diagnosticity Perspective," *Journal of Consumer Research*, 17 (4), 454–62.

Holbrook, Morris B. and Kim P. Corfman (1985), "Quality and Value in the Consumption Experience: Phaedrus Rides Again," in *Perceived Quality: How Consumers View Stores and Merchandise*, ed. Jacob Jacoby and Jerry C. Olson, Lexington, MA: Heath, 32–57.

Jacoby, Jacob, Jerry C. Olson, and Rafael A. Haddock (1971), "Price, Brand Name, and Product Composition Characteristics as Determinants of Perceived Quality," *Journal of Applied Psychology*, 55 (6), 570–79.

Johnson, Michael D. (1989), "The Differential Processing of Product Category and Noncomparable Choice Alternatives," *Journal of Consumer Research*, 16 (3), 300–309.

Jones, Edward E. and Richard E. Nisbett (1971), "The Actor and the Observer: Divergent Perceptions of the Causes of Behavior," in *Attribution: Perceiving the Causes of Behavior*, ed. Edward E. Jones, Morristown, NJ: General Learning Press, 79–84.

Kardes, Frank R., Maria L. Cronley, James J. Kellaris, and Steven S. Posavac (2004), "The Role of Selective Information Processing in Price-Quality Inference," *Journal of Consumer Research*, 31 (2), 368–74.

Kardes, Frank R., Steven S. Posavac, Maria L. Cronley, and Paul M. Herr (2008), "Consumer Inference," in *Handbook of Consumer Psychology*, ed. Curtis P. Haugtvedt, Paul M. Herr, and Frank R. Kardes, Mahwah, NJ: Erlbaum, 165–91.

Keller, Punam Anand and Ann L. McGill (1994), "Differences in the Relative Influence of Product Attributes under Alternative Processing Conditions: Attribute Importance versus Attribute Ease of Imagability," *Journal of Consumer Psychology*, 3 (1), 29–49.

Kim, Hakkyun, Akshay R. Rao, and Angela Y. Lee (2009), "It's Time to Vote: The Effect of Matching Message Orientation and Temporal Frame on Political Persuasion," *Journal of Consumer Research*, 35 (April), 877–89.

Kim, Kyeongheui, Meng Zhang, and Xiuping Li (2008), "Effects of Temporal and Social Distance on Consumer Evaluations," *Journal of Consumer Research*, 35 (4), 706–13.

Kray, Laura and Richard Gonzalez (1999), "Differential Weighting in Choice versus Advice: I'll Do This, You Do That," *Journal of Behavioral Decision Making*, 12 (3), 207–17.

Krishna, Aradhna and Maureen Morrin (2008), "Does Touch Affect Taste? The Perceptual Transfer of Product Container Haptic Cues," *Journal of Consumer Research*, 34 (6), 807–18.

Kunda, Ziva (1990), "The Case for Motivated Reasoning," *Psychological Bulletin*, 108 (3), 480–98.

Lee, Angela Y., Punam Anand Keller, and Brian Sternthal (2010), "Value from Regulatory Construal Fit: The Persuasive Impact of Fit between Consumer Goals and Message Concreteness," *Journal of Consumer Research*, 36 (5), 735–47.

Liberman, Nira, Michael D. Sagristano, and Yaacov Trope (2002), "The Effect of Temporal Distance on Level of Mental Construal," *Journal of Experimental Social Psychology*, 38 (6), 523–34.

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.

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.

McConnell, J. Douglas (1968), "Effect of Pricing on Perception of Product Quality," *Journal of Applied Psychology*, 52 (4), 331–34.

Miller, Dale T. and Michael Ross (1975), "Self-Serving Biases in the Attribution of Causality: Fact or Fiction?" *Psychological Bulletin*, 82 (2), 213–25.

Monroe, Kent B. (2003), *Pricing: Making Profitable Decisions*, Burr Ridge, IL: McGraw-Hill/Irwin.

Nisbett, Richard E., Craig Caputo, Patricia Legant, and Jeanne Marecek (1973), "Behavior as Seen by the Actor and as Seen

by the Observer," *Journal of Personality and Social Psychology*, 27 (2), 154–64.

Pechmann, Cornelia and S. Ratneshwar (1992), "Consumer Covariation Judgments: Theory or Data Driven?" *Journal of Consumer Research*, 19 (3), 373–86.

Pronin, Emily (2009), "The Introspection Illusion," in *Advances in Experimental Social Psychology*, Vol. 41, ed. Mark P. Zanna, Burlington, MA: Academic Press, 1–67.

Pronin, Emily, Thomas D. Gilovich, and L. Ross (2004), "Objectivity in the Eye of the Beholder: Divergent Perceptions of Bias in Self versus Others," *Psychological Review*, 111 (3), 781–99.

Raghubir, Priya (2008), "Is 1/10 > 10/100? The Effect of Denominator Salience on Perceptions of Base Rates of Health Risk," *International Journal of Research in Marketing*, 25 (4), 327–34.

Raghubir, Priya, J. Jeffrey Inman, and Hans Grande (2004), "The Three Faces of Price Promotions: Economic, Informative and Affective," *California Management Review*, 46 (4), 1–19.

Rao, Akshay R., and Kent B. Monroe (1988), "The Moderating Effect of Prior Knowledge on Cue Utilization in Product Evaluations," *Journal of Consumer Research*, 15 (September), 253–64.

Rao, Akshay R., Lu Qu, and Robert W. Ruekert (1999), "Signaling Unobservable Product Quality through a Brand Ally," *Journal of Marketing Research*, 36 (2), 258–68.

Sanbonmatsu, David M., Frank R. Kardes, Steven S. Posavac, and David G. Houghton (1997), "Contextual Influences on Judgments Based on Limited Information," *Organizational Behavior and Human Decision Processes*, 69 (March), 251–64.

Szybillo, George J. and Jacob Jacoby (1974), "Intrinsic versus Extrinsic Cues as Determinants of Perceived Product Quality," *Journal of Applied Psychology*, 59 (1), 74–78.

Thomas, Manoj, Sucharita Chandran, and Yaacov Trope (2005), "Distance Lends Structure to the View: Temporal Construal and Value Perceptions," in *Advances in Consumer Research*, Vol. 32, ed. Geeta Menon and Akshay R. Rao, Duluth, MN: Association for Consumer Research, 182–84.

Trope, Yaacov and Nira Liberman (2010), "Construal-Level Theory of Psychological Distance," *Psychological Review*, 117 (2), 440–63.

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.

Vallacher, Robin R. and Daniel M. Wegner (1989), "Levels of Personal Agency: Individual Variation in Action Identification," *Journal of Personality and Social Psychology*, 57 (4), 660–71.

Wiener, Joshua Lyle (1985), "Are Warranties Accurate Signals of Product Reliability?" *Journal of Consumer Research*, 12 (2), 245–50.

Zhou, Kevin Zheng, Chenting Su, and Yeqing Bao (2002), "A Paradox of Price-Quality and Market Efficiency: A Comparative Study of the US and China Markets," *International Journal of Research in Marketing*, 19 (4), 349–65.