You Get What You Pay For? Self-Construal Influences Price-Quality Judgments

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How does cultural self-construal influence consumers' tendency to use price to judge quality? Seven experiments designed to address this question revealed that people with a more interdependent (vs. independent) cultural self-construal—operationalized by ethnicity, nationality, measured self-construal, or manipulated salient self-construal—have a greater tendency to use price information to judge quality. This difference arises because interdependents tend to be holistic (vs. analytic) thinkers who are more likely to perceive interrelations between the elements of a product. These effects were observed regardless of whether the price-quality relation was assessed with a standard self-report scale or via actual product judgments, and whether thinking style was measured or manipulated. However, cultural differences only emerged in situations that afforded interdependents (vs. independents) a relational processing advantage. These findings shed light on the mechanisms underlying the effects and identify novel boundary conditions for the influence of self-construal and thinking style on consumer judgments.

Decades of research have established that price often influences consumers' quality judgments (Rao and Monroe 1989). The tendency to use cues such as price to judge product quality (the price-quality relation) is one of the core findings in the marketing literature (Kardes, Cronley, et al. 2004; Kardes, Posavac, and Cronley 2004). Understanding when and how consumers use price to judge quality is fundamental both to consumer researchers and to those interested in influencing quality perceptions. Price is generally seen as an extrinsic cue (Rao and Monroe 1989) that is perceived as separate from the intrinsic elements of a product, such as its design or ingredients. In this article, we pose the question, does the degree to which consumers use price information to judge quality depend on their cultural self-construal? We examine whether consumers with different self-construals and cultural backgrounds perceive price as an equally good indicator of quality. We also investigate the mechanisms by which self-construal may influence price-quality judgments and show that the tendency to think holistically drives such judgments. Finally, we explore boundary conditions to the relation between self-construal and price-quality judgments.

Existing research offers little insight on whether or why cultural self-construal, ethnicity, or nationality affect the strength of price-quality judgments. Some previous research suggests that price-quality judgments do not depend on cultural factors. For instance, Dawar and Parker (1994) suggested, on the basis of self-reports in mostly Western countries, that the use of price as a signal for quality is one of a number of "marketing universals," with few significant differences across cultural boundaries (also see Faulds and Lonial [2001] for a similar conclusion regarding price and actual, objective quality).

In contrast, a few studies suggest that there may be national culture differences of one kind or another in the tendency to perceive a price-quality relationship (e.g., Huddleston and Good 1998; Jo and Sarigollu 2007; Zhou, Su, and Bao 2002). For instance, Jo and Sarigollu (2007) found that Japanese consumers (who tend to have an interdependent self-construal) have a greater tendency to rely on price to judge quality than do Australians (who tend to have an

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independent self-construal). However, these studies do not provide a theoretical framework linking cultural constructs to price-quality judgments. Neither do they shed light on underlying mechanisms and boundary conditions. By understanding the processes that mediate these relations, we can better anticipate which groups will differ in their price-quality judgment tendencies and when.

Our analysis suggests that an interdependent self-construal generally increases the tendency to make price-quality judgments because it is associated with holistic thinking, which enables interdependents to perceive stronger relations between elements. However, as will be explained presently, this effect is moderated by the breadth of associations brought to mind in the context. When a broader (narrower) set of associations is brought to mind, we show that both (neither) independents and (nor) interdependents make price-quality judgments.

Our studies offer a number of theoretical and substantive contributions. They contribute to the price-quality literature by identifying how important cultural variables influence a key effect in the literature. To our knowledge, this is one of the first sets of findings to show cultural moderation of an effect that had been seen as a marketing universal (Dawar and Parker 1994). Our findings also contribute to the cross-cultural literature by extending knowledge about how cultural self-construal influences product perceptions. The findings not only establish the role of thinking styles in mediating the robust relationship between self-construal and price-quality judgments, they also highlight contexts in which the perceived price-quality relation will be magnified or mitigated by factors that influence relational processing. Further, the results contribute directly to the literature on thinking styles by identifying contextual moderators for thinking-style effects that support our process account for the observed cultural differences. These boundary conditions highlight how subtle contextual features that make cultural self-construals or culturally dominant thinking styles salient affect the magnitude of price-quality judgments.

SELF-CONSTRUAL AND PRICE-QUALITY JUDGMENTS

The distinction between independent and interdependent self-construals is particularly relevant to predicting the perceived price-quality relation. People with an independent self-construal, such as those from North American and other Western societies, tend to value independence from others and subordinate the goals of their in-groups to their own personal goals. In contrast, people with an interdependent self-construal, such as those from South and East Asia (Korea, India, China, Japan), value interdependent relationships and subordinate their personal goals to those of their in-groups (Triandis 1995). Interdependents are more likely than independents to see themselves as inextricably embedded within a larger social network of roles and relationships (Ji, Peng, and Nisbett 2000; Monga and John 2007; Nisbett et al. 2001). As will be shown, this tendency gives interdependents a relational processing advantage over independents (Ahluwalia 2008), which may generally heighten the price-quality relation.

Self-Construal and Styles of Thinking

Independents tend to adopt an *analytic* thinking style that emphasizes the independence of individual objects, whereas interdependents tend to adopt a *holistic* style of thinking emphasizing that the world is composed of interrelated elements (Monga and John 2007, 2008; Nisbett et al. 2001). These thinking styles affect cognitive processes such as attention, causal reasoning, and categorization. The analytic style of attention is field independent (mainly oriented toward a focal object itself), whereas holistic attention is field dependent (focused on the relationship between objects and/or the field in which they are embedded; see Nisbett et al. 2001 for a review). Because cultural self-construal predicts analytic/holistic thinking styles, people of different self-construals tend to perceive and explain events differently. Research shows that interdependents (vs. independents) tend to assume that elements in the world are intertwined, and thus an event or object can be understood only in the context of the whole set of relevant factors (Monga and John 2007; 2008; Nisbett et al. 2003).

There is increasing evidence that these differences in thinking styles have significant implications for consumer judgments and decisions. For example, Zhu and Meyers-Levy (2009) showed that holistic thinkers are more likely to view a product and the table on which it is displayed as continuous parts of a larger whole, whereas analytic thinkers view the product and display table as separate pieces of data, suggesting that holistic thinkers view things as more interconnected. Similarly, Monga and John (2010) showed that the success of brand extensions of functional brands (e.g., Timex) depends on consumers' thinking styles. Because holistic (vs. analytic) thinkers are able to think of alternative ways to relate the extension to the parent brand, they perceive them to fit better and, hence, evaluate them better. Importantly, this difference was not found for prestige brands (e.g., Rolex), which have abstract and elastic brand concepts that may facilitate a broader set of associations for both holistic and analytic thinkers.

Self-Construal, Styles of Thinking, and Price-Quality Judgments

As noted, we propose that people with a more interdependent self-construal are generally more likely to make price-quality judgments, and that this relationship is mediated by holistic thinking. Although no known research has examined these relations, some research suggests that holistic (vs. analytic) thinkers in general are more attentive to, and have a greater tendency to infer, associations between objects (Monga and John 2007; Nisbett et al. 2001). For instance, Ji et al. (2000) examined how self-construal and styles of thinking influence people's estimates of the degree of association between random figures. Participants saw one

of two arbitrary figures on the left side of a computer screen (e.g., a schematic medal) and one of two other figures on the right (e.g., a pointing finger). Chinese (holistic thinkers), compared to Americans (analytic thinkers), estimated a higher degree of covariation between the figures.

Relatedly, Masuda and Nisbett (2001) demonstrated that, when shown pictures and then asked to describe what they had seen, Japanese (holistic thinkers) reported more relationships between focal and background elements than did Americans (analytic thinkers). Japanese (but not Americans) also showed a "binding" effect, whereby the accuracy of their object recognition deteriorated if they saw the object in an environment that differed from the original one. Such findings suggest that holistic (vs. analytic) thinkers are more likely to see product quality as connected to and inseparable from contextual elements such as price.

Similarly, in the domain of brand extensions, Monga (2004; Monga and John 2007) found that because interdependents are holistic thinkers, they are able to identify greater linkages and, hence, perceive a better fit between a parent brand (e.g., Kodak) and its brand extensions (e.g., Kodak filing cabinet, Kodak greeting cards) than do independents. Accordingly, Ahluwalia (2008) found that interdependents enjoy a "relational processing advantage" when evaluating the fit of brand extensions. Thus, we anticipate that people who think holistically will be more likely to see or unearth linkages between price and a product's quality and that holistic thinking will mediate the relation between self-construal and price-quality judgments.

Boundary Conditions

The holistic thinking literature suggests that interdependents always see product attributes as more related, and hence, should see price and quality as more related. Indeed, sample items in the holistic thinking scale include "Nothing is unrelated," and "Everything in the world is intertwined in a causal relationship" (Choi, Koo, and Choi 2007). However, are there any boundaries to this tendency, when interdependents' relational processing advantage over independents is diminished?

To address this question, it is necessary to consider how and when price information may be used when making quality judgments. Our point is not that those with an interdependent self-construal (or holistic thinkers) always see price and quality as more related. Instead, we predict that price will inform quality judgments more for interdependents (vs. independents) only in situations in which they have a relational processing advantage. Such situations afford interdependents (vs. independents) a greater opportunity to see linkages between price and quality. However, situations that facilitate relational processing should enable independents also to see linkages between price and quality, and hence, enable both groups to make price-quality judgments. Similarly, situations that constrain relational processing should hinder interdependents' tendency to do so, and in those conditions, neither group should make price-quality judgments.

One condition that facilitates relational processing among independents is when situational factors activate holistic thinking (Monga and John 2008). Such situations compel everyone to consider the associations between object elements (e.g., product attributes, including price). Hence, in such situations, we would expect both independents and interdependents to make price-quality judgments. Another condition that facilitates relational processing is when quality may be associated with a broader set of attributes; for instance, when the product serves a symbolic or social identity function. Previous research suggests that price-quality judgments vary by product category (Monroe 2003). Symbolic products such as watches are more likely to communicate information to others about the user's identity (Escalas and Bettman 2005; White and Dahl 2007). Research also suggests that symbolic and prestige products foster abstract associations and multiple connections with quality (Monga and John 2010; Reddy, Holak, and Bhat 1994; Schlosser and Shavitt 2002; Shavitt 1990, 1992; also see Keller 1993). As a result, they should bring a broader range of quality associations to mind, including those linking price and quality (e.g., craftsmanship, exclusivity). We expect that these additional associations will facilitate relational processing among independents as well, enabling both groups to make price-quality judgments.

In contrast, products relatively low in symbolism (e.g., shaving cream) tend to have moderate conceptualizations of quality (Reddy et al. 1994; Shavitt, Lowrey, and Han 1992). Hence, for such products, people who have a relational processing advantage (i.e., interdependents or holistic thinkers; Ahluwalia 2008) are more likely to connect price with quality. As a result, we expect interdependents to be more likely to make price-quality judgments for nonsymbolic products.

Another relevant boundary condition pertains to the breadth or "bandwidth" of the quality measure itself. Broad-bandwidth measures assess global, expansive, or general constructs, whereas narrow-bandwidth ones assess relatively specific or limited constructs (Jenkins and Griffith 2004; Ones and Viswesvaran 1996). Because broad measures of quality (e.g., overall evaluations) tend to be abstract and more inclusive (Ones and Viswesvaran 1996), they should bring a broader set of quality attributes to mind. The additional associations brought to mind by a broad-bandwidth measure should facilitate relational processing among independents, leading both groups to make price-quality judgments. On the other hand, when the measure of quality is not particularly broad (a moderate measure), groups that have a relational processing advantage (i.e., interdependents) should be more likely to make price-quality judgments.

The bandwidth variable also allows us to test a condition in which neither independents nor interdependents should make price-quality judgments. Narrow quality measures precisely define the attributes in question and assess specific and concrete variables (e.g., ability to withstand spills), restricting everyone's tendency to associate quality with other product aspects. In this condition, because of the limited

associations engendered by the quality measure, it will be difficult for both independents and interdependents to associate price with quality. Hence, neither interdependents nor independents should make price-quality judgments when the quality measure is very narrow (see fig. 1 for our framework).

It is important to emphasize that price-quality judgments can certainly be made by consumers with an independent self-construal. Indeed, previous research confirms that independents (e.g., US respondents) do routinely make such judgments (Rao and Monroe 1989). We are not suggesting that independent consumers do not see price and quality as related. We propose that one's degree of independence does not predict the tendency to do that, whereas one's degree of interdependence does. In fact, in nearly all our studies conducted with US samples, price-quality judgments do emerge in the aggregate, replicating the previous body of work. In other words, our studies reaffirm the robust and significant nature of price-quality judgments. They also highlight the underlying mechanisms by showing for the first time that a more interdependent self-construal increases the tendency to make price-quality judgments.

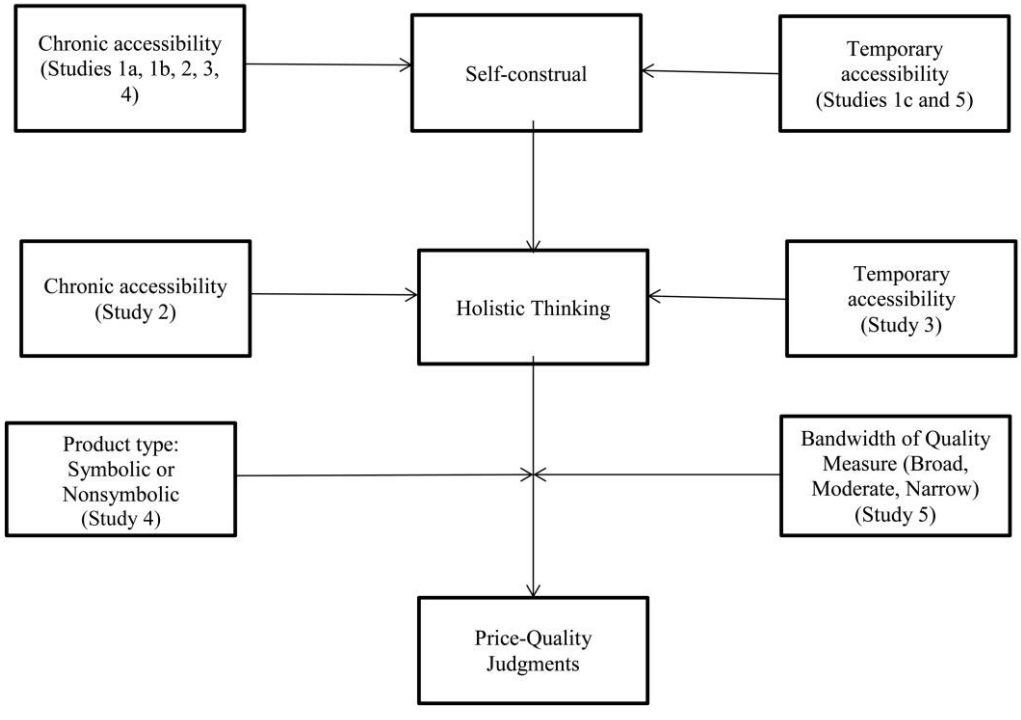
Overview of Studies

A multimethod approach was used to establish reliability and generalizability across seven experiments (e.g., Lalwani 2009; Lalwani, Shavitt, and Johnson 2006; Lalwani, Shrum, and Chiu 2009). The tendency to make price-quality judgments was assessed in a number of ways, both using standard self-report scales and responses to real stimuli for various products. Similarly, we used multiple operationalizations of self-construal, including respondent ethnicity (Caucasian, Asian, Hispanic); nationality (American, Indian); and chronic or manipulated self-construal (independent, interdependent). Style of thinking (holistic or analytic) was either measured or manipulated. Study 1a provided an initial demonstration that interdependence (compared to independence) is more strongly associated with the self-reported belief in price as a signal of quality. Study 1b replicated these findings using actual product judgments and a different operationalization of self-construal (ethnicity). Study 1c revealed the same pattern of results using a self-construal prime and a range of products to assess price-quality judgments. Studies 2 and 3 showed that interdependents perceive a stronger price-quality relation than independents do because they tend to think more holistically.

The next studies assessed boundaries to the demonstrated relations with the goal of identifying conditions in which both independents and interdependents may make price-quality judgments or neither may do so. Specifically, we argue that cultural differences will be moderated by whether the situation affords interdependents (holistic thinkers) a relational processing advantage over independents

FIGURE 1

THE IMPACT ON SELF-CONSTRUAL ON PRICE-QUALITY JUDGMENTS



and, hence, a greater likelihood to connect price information to their quality judgments. As expected, Study 4 indicated that the relationship between self-construal and price-quality judgments depends on whether the product type facilitates making symbolic connections between product aspects (in which case both independents and interdependents make price-quality judgments) or does not facilitate such connections (in which case only interdependents make price-quality judgments). Study 5 revealed that self-construal influences price-quality judgments when the quality measure is phrased in moderately broad terms, in which case interdependents possess a relational processing advantage over independents. However, when quality is phrased in very broad terms, relational processing is facilitated among independents as well, thereby diminishing differences between independents and interdependents. Similarly, when quality is phrased in narrow terms, neither group processes information relationally, and hence, neither makes price-quality judgments. Together, these studies indicate that the tendency to judge a product based on its price is generally greater for people with a more interdependent self-construal (see fig. 1). The studies also support the process account involving holistic thinking and reveal novel boundary conditions that facilitate or constrain the role of thinking style in price-quality judgments.

STUDY 1A: THE ROLE OF SELF-CONSTRUAL

The first study was designed to provide an initial demonstration of the link between self-construal and the tendency to make price-quality judgments.

Method

Respondents were 202 undergraduates (50% females; $M_{age} = 23.53$) at the University of Texas at San Antonio who participated in exchange for class credit. The tendency to make price-quality judgments was measured via a four-item, 7-point scale ($\alpha = 0.82$) developed by Lichtenstein, Ridgway, and Netemeyer (1993). The items (anchored by 1 = strongly disagree and 7 = strongly agree) included "Generally speaking, the higher the price of a product, the higher the quality," and "The old saying, 'You get what you pay for' holds true for most products."

Subsequently, self-construal was assessed using Oyserman's (1993, study 3) scales anchored by "strongly disagree (1)" and "strongly agree (7)." A sample item to assess independence (six items; $\alpha = 0.57$) included "It is very important to me to express my views even when they differ from those of my friends." A sample item to assess interdependence (six items; $\alpha = 0.73$) included "Whatever is good for my group is good for me."

Results and Discussion

The mean price-quality score was significantly above the midpoint of 4.0 ($M = 5.21$, $t(201) = 16.72$, $p < .001$). Thus, in the aggregate, people perceived higher prices to be indicative of higher quality, replicating previous research primarily conducted in the United States (Rao and Monroe 1989). The same pattern was evident in nearly all our studies conducted in the United States (i.e., US participants in our studies perceived higher prices to be indicative of higher quality across self-construals), although due to space considerations, this issue is not elaborated further.

A multiple regression analysis with scores on the price-quality scale as a dependent measure and independence and interdependence scores as continuous predictor variables revealed that interdependence significantly predicted scores on the price-quality scale ($\beta = 0.21$, $t(199) = 3.07$, $p < .005$), whereas independence did not ($\beta = -0.04$, $t(199) = -0.51$, $p > .61$). These findings suggest that the self-reported reliance on price to judge quality is associated with interdependence, but not with independence, as predicted.

An alternate interpretation of these findings is that interdependence is not necessarily associated with a tendency to make price-quality judgments. Instead, because all items in the price-quality scale were positively worded (i.e., none were reverse scored), interdependents may have scored higher because interdependence has been linked with an acquiescent response style (see Johnson, Shavitt, and Holbrook 2011 for a review), not because of price-quality beliefs. Accordingly, in the next study (as well as in studies 1c, 3, 4, and 5) we examined evaluative responses to products that varied in price, instead of agreement with scale items.

STUDY 1B: IMPLICATIONS FOR PRODUCT JUDGMENTS

The goals of study 1b were threefold. First, it examined whether the relationship between self-construal and price-quality judgments extends to real products. Second, it sought to ascertain the generalizability of the findings by using a different operationalization of self-construal–respondent ethnicity. Third, it examined whether interdependents' greater tendency to make price-quality judgments reflects a greater aversion to risk (Zhou et al. 2002). Prior research indicates that people with an interdependent self-construal tend to be more risk averse than those with an independent self-construal, at least with respect to certain types of decisions (Hamilton and Biehal 2005; Mandel 2003). Other research implies that risk aversion is associated with a greater reliance on price to judge quality (Zhou et al. 2002). If so, then the use of price to make quality judgments could reflect an effort to reduce risk in the purchase of products. We explored this possibility in this study by measuring individual differences in risk aversion.

Method

Participants and Design. One hundred and twenty-three undergraduates (42.5% females, $M_{age} = 23.03$) at the University of Texas at San Antonio participated. Respondents received information about three alarm clocks, one of which was the target clock (brand name: Excera), whereas the

others provided baseline price information. The study had a 2 (price of target clock: high, low) × 2 (ethnicity: Caucasian [to represent independents], Asian/Hispanic [to represent interdependents]) between-subjects design. In the high price condition, the retail price of the target clock was $35, and in the low price condition it was $15. The description of the clocks and their attributes (including price) were derived from major online retail stores (e.g., target clock: "Sleek look," and "Perfect for traveling"). The two baseline clocks were priced the same across conditions ($20 and $30) and contained the same attribute information (e.g., "Quartz Movement"). Participants studied the clocks and then evaluated the target clock and completed demographics.

Measures. Participants evaluated the target alarm clock on a three-item, 7-point scale (1 = very low, 7 = very high) assessing quality, reliability, dependability ($\alpha = 0.88$). Risk aversion was measured using a three-item, 7-point scale (1 = strongly disagree, 7 = strongly agree) developed by Zhou et al. (2002). A sample item included "I am cautious in trying new/different products" ($\alpha = 0.74$). Participants were also asked to report the ethnic group they identified with, along with other demographics. Because previous research suggests that Asians and Hispanics tend to have an interdependent self-construal, whereas European Americans tend to have an independent self-construal (Aaker and Williams 1998), participants who indicated being Asian, Hispanic, or Latino were termed "Asian/Hispanic," those who indicated being white were termed "Caucasians," and the rest were classified as "others."

Results and Discussion

We predicted that Asian/Hispanic participants would evaluate the target clock more favorably when it had a high (vs. low) price, and that this price effect would not emerge for Caucasians. As expected, a general linear model (GLM) on evaluations of the alarm clock revealed no main effect of price ($F(1, 95) = 1.15$, $p > .28$) or ethnicity ($F(1, 95) = 0.07$, $p > .78$), but a significant interaction between the two ($F(1, 93) = 4.57$, $p < .05$). Caucasians judged the high and low priced clocks to be similar ($M_{High} = 4.25$, $M_{Low} = 4.52$; $t(51) = 0.83$, $p > .41$), suggesting that they did not rely on price to judge quality. In contrast, Asians/Hispanics judged the alarm clock to be significantly better when it was priced high than when it was priced low ($M_{High} = 4.87$, $M_{Low} = 4.05$; $t(44) = -2.05$, $p < .05$), suggesting that they used the price of the clock to estimate its quality.

We found no evidence that risk aversion was responsible for these differences. Ethnicity did not affect risk aversion scores ($t(97) = -1.155$, $p > .25$). Further, risk aversion was not correlated with evaluations of the alarm clock in the aggregate ($r = 0.01$, $p > .89$) or in the two price conditions separately ($r_{High} = 0.04$, $p > .76$; $r_{Low} = -0.005$, $p > .97$). Another GLM that included risk aversion scores revealed no main effects of price condition, risk aversion, or ethnicity, no interaction between risk aversion and price or between risk aversion and ethnicity (all $p > .38$). However, the interaction between ethnicity and price condition remained significant ($F(1, 92) = 4.67$, $p < .05$). Hence, the relationship between self-construal and price condition remained significant after controlling for risk aversion.

STUDY 1C: THE ROLE OF SALIENT SELF-CONSTRUAL

This study extended the previous ones by using different dependent and independent variables to assess generalizability. We used a new set of realistic product information (about computer monitors) and assessed the covariation between participants' quality estimates for a number of brands of monitors and the price information they were given for these brands (for details on this technique, see Cronley et al. 2005; Kardes, Cronley, et al. 2004). Instead of measuring chronic self-construal, we manipulated the salience of cultural self-construal via priming.

Method

Participants were 129 undergraduates (39% females, $M_{age} = 20.25$) at the University of Texas at San Antonio. Salient self-construal (independent, interdependent) was manipulated using a well-established prime (Lalwani and Shavitt 2009; Trafimow, Triandis, and Goto 1991). Participants read a story about an ancient warrior, Tiglath, who was put in command of the troops for a difficult mission by his king. Tiglath needed to select a person to lead his army. In the independent self-construal condition, he selects a talented general, whereas in the interdependent self-construal condition, he selects a trusted family member. After reading the story, participants were asked whether they admire the king. A pilot study ($N = 39$) revealed that respondents in the independent condition scored higher on a measure of independence (Triandis and Gelfand 1998) than did those in the interdependent condition ($M_{independent} = 5.21$, $M_{interdependent} = 4.56$; $t(37) = 2.10$, $p < .05$), suggesting that the manipulation was effective.

The technique used to measure price-quality associations was adapted from Kardes, Cronley, et al. (2004). Participants saw a list of 24 randomly ordered computer monitors containing the (1) brand name (e.g., Apple), (2) country of origin (e.g., Japan), (3) model number (e.g., Acer P191W), (4) display quality (on a scale of 1 to 5), (5) ease of use (scale of 1 to 5), (6) retail price (ranging from $130 to $900), and (7) a quality rating (on a scale from 0 to 100, where higher numbers indicate better quality). All information provided came from the website of *Consumer Reports*. The average price of the 24 monitors was $290; the average quality rating was 69.12.

Following Kardes, Cronley, et al. (2005), participants were given as much time as they wanted to review the list. Then, they estimated the quality (on a scale of 0 to 100) of 10 hypothetical brands of computer monitors, based on the list they just reviewed. The correlation between the presented price and participants' quality estimates was calcu-

lated for each participant separately, and this served as the dependent variable.

Results and Discussion

As in previous studies (Cronley et al. 2005; Kardes, Cronley, et al. 2004), the average subjective price-quality correlation revealed in quality ratings ($r = 0.62$) was substantially higher than the objective price-quality correlation in the information presented ($r = 0.39$). More importantly, higher price-quality correlations emerged in the interdependent prime condition than in the independent prime condition ($r_{independent} = 0.54$, $r_{interdependent} = 0.71$, $t(126) = 2.52$, $p = .01$). These results are in line with those of studies 1a and 1b, and provide further evidence that a more interdependent self-construal is associated with greater reliance on price as a signal for quality.

Taken together, studies 1a–1c suggested that interdependence (more than independence) is associated with a belief that higher prices in the marketplace reflect better quality. However, neither acquiescence nor risk aversion appear to account for this relationship. Instead, the findings are consistent with interdependents' tendency to think holistically, which is characterized by relational processing that connects and integrates elements in the field, rather than pulling apart elements and focusing on distinctions between them, a process that characterizes analytic thinking (Nisbett et al. 2001). The next two studies directly tested the role of holistic thinking in the relationship between self-construal and price-quality judgments. If interdependents' tendency to make price-quality judgments is due to holistic thinking, then holistic thinking should mediate the link between self-construal and price-quality judgments. We tested this hypothesis both by measuring holistic thinking (study 2) and by manipulating it (study 3).

STUDY 2: HOLISTIC THINKING AND CROSS-NATIONAL DIFFERENCES

The objectives of study 2 were threefold: (1) to assess cross-national differences in the tendency to make price-quality associations, (2) to test the mediating role of holistic thinking in the effect of self-construal on price-quality judgments, and (3) to establish the generalizability of the relationships using a nonstudent sample of respondents.

Method

Nationality was used to operationalize self-construal. Respondents from India represented the interdependent sample and respondents from the United States represented the independent sample. Indians are more interdependent and less independent, and more holistic and less analytic in thinking style, than are Americans (Monga 2004; Monga and John 2007). Eighty-one respondents from India and 125 from the United States were recruited using an online research panel (42% females; $M_{age} = 25.58$). All Indian respondents were proficient in English, and hence, the questionnaire was administered in English in both countries. Price-quality judgments ($\alpha_{US} = 0.83$, $\alpha_{India} = 0.81$, $\alpha_{overall} = 0.83$) were measured as in study 1a. The tendency to think holistically was measured with a 10-item 7-point (1 = strongly disagree, 7 = strongly agree) scale developed by Choi et al. (2003). Sample items are: "It's not possible to understand the pieces without considering the whole picture" and "The whole is greater than the sum of its parts" ($\alpha_{US} = 0.65$, $\alpha_{India} = 0.78$, $\alpha_{overall} = 0.71$).

Results and Discussion

Indians had a stronger belief in price as a signal of quality than Americans did ($M_{Americans} = 4.54$, $M_{Indians} = 5.20$; $t(204) = 4.26$, $p < .001$). This relationship replicates our previous results. Next, we tested whether holistic thinking mediated this effect using Baron and Kenny's (1986) procedure. In separate regression equations, country (dummy coded 0 = United States, 1 = India) predicted price-quality judgments ($\beta = 0.29$, $t(204) = 4.26$, $p < .001$) and holistic thinking ($\beta = 0.18$, $t(204) = 2.56$, $p < .02$). The latter result replicates the findings of Monga (2004), who found that Indians score higher on holistic thinking than Americans do. Finally, when price-quality judgments were regressed on both country and holistic thinking, the effect of country dropped ($\beta = 0.25$, $t(203) = 3.70$, $p < .001$), whereas holistic thinking was significant ($\beta = 0.23$, $t(203) = 3.38$, $p = .001$). A Sobel test supported the mediation (Sobel's $z = 2.04$, $p < .05$). These findings suggest that holistic thinking partially mediated the effect of country on price-quality judgments.

Using an individual difference measure of thinking style, study 2 suggested that interdependents see price as related to quality because they are holistic thinkers. As in our previous studies, independence was not associated with price-quality judgments. In the next study, we tested the same relationships by manipulating style of thinking. If interdependents make price-quality judgments because they think holistically (i.e., have a relational processing advantage over independents), then this effect should disappear when they are primed to think analytically. At the same time, priming participants to think holistically should facilitate relational processing. Hence, both independents and interdependents should make price-quality judgments in the holistic thinking condition. Study 3 tested these hypotheses.

STUDY 3: STYLE OF THINKING AND PRICE-QUALITY ASSOCIATIONS

Method

Participants, Design, and Stimuli. Two hundred and forty-eight undergraduate students (49% females, $M_{age} = 28.32$) at the University of Texas at San Antonio participated. Price-quality judgments were operationalized as in study 1b, except that we used a calculator (rather than alarm clock) for generalizability. Participants read descriptions of three scientific calculator brands. One was the target brand and two were comparison (baseline) brands. The study uti-

lized a 2 (price of target brand: high, low) × 2 (style of thinking: holistic, analytic) × 2 (ethnicity: Caucasian, Asian/Hispanic) between-subjects design: price of the target brand (high [$75], low [$45]) was manipulated. The two baseline calculators were priced the same across conditions ($55 and $65).

Style of Thinking Manipulation. Following Monga and John (2008), participants were shown a black-and-white picture in which line drawings of 11 smaller objects (ski cap, bird, key) were embedded. Participants in the analytic thinking condition were also shown pictures of these 11 objects separately and were asked to find as many of the embedded objects as possible in the larger picture. Locating embedded figures encourages field independence, a key feature of analytic thinking (Nisbett et al. 2001). The figures were well embedded in the picture such that participants in the holistic condition would not spontaneously see them. In the holistic thinking condition, participants were shown only the larger picture and asked to focus on its background, and also to write what they saw in the picture. Focusing on the background encourages field dependence and relational processing—major characteristics of holistic thinking (Nisbett et al. 2001). Monga and John (2008) found that this manipulation significantly influenced the locus of attention factor of the 24-item holism scale (Choi et al. 2007) as well as recall of contextual location information. In a pilot study ($N = 63$), we found that participants in the holistic (vs. analytic) thinking condition scored significantly higher on the 24-item holism scale ($M_{\text{Holistic}} = 4.99$, $M_{\text{Analytic}} = 4.70$; $t(61) = 2.30$, $p < .05$), which validated the manipulation.

Measures. Participants evaluated the target calculator on a three-item 7-point scale assessing quality, reliability, and dependability (all $\alpha = 0.85$). Ethnicity was measured as in study 1b.

Results and Discussion

A GLM revealed a significant interaction between ethnicity, price condition, and thinking style to predict product evaluations ($F(1, 218) = 4.60$, $p < .05$). In the holistic thinking condition, we expected both Asians/Hispanics and Caucasians to make price-quality judgments, although with a stronger tendency for Asians/Hispanics because they are chronically holistic thinkers and, hence, a holistic thinking prime may have an additive effect for them (see Anderson and Galinsky 2006; Bargh et al. 1986). In the analytic thinking condition, we expected neither group to make price-quality judgments. As predicted, in the holistic thinking condition, the interaction between price condition (low, high) and ethnicity was significant ($F(1, 109) = 4.68$, $p < .05$). However, in the analytic thinking condition, the interaction between price condition (low, high) and ethnicity was nonsignificant ($F(1, 113) = 0.82$, $p > .36$), suggesting, as expected, that in this condition, Asians/Hispanics and Caucasians did not differ in the tendency to make price-quality judgments.

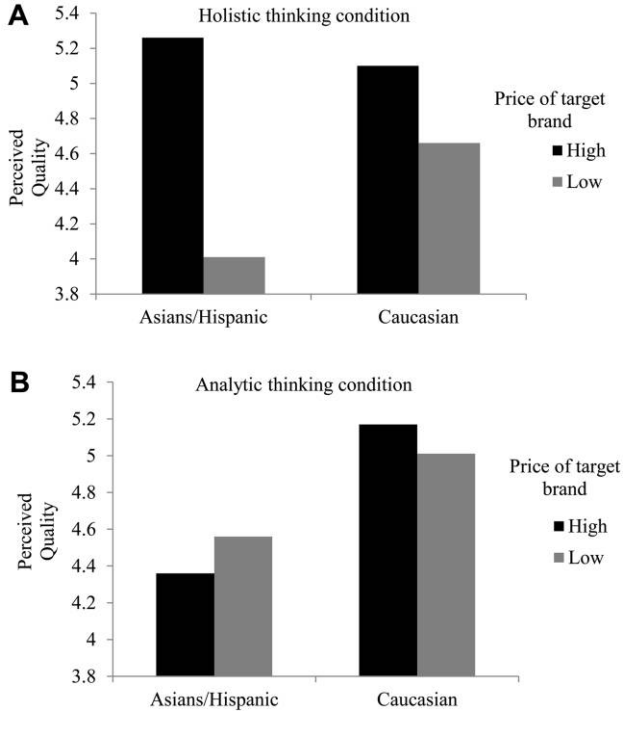
Follow-up contrasts suggested that, in the holistic thinking condition, both Caucasians ($M_{\text{High price}} = 5.10$, $M_{\text{Low price}} = 4.66$; $t(69) = -2.03$, $p < .05$) and Asians/Hispanics ($M_{\text{High price}} = 5.26$, $M_{\text{Low price}} = 4.01$; $t(40) = -4.04$, $p < .001$; fig. 2) evaluated the target calculator higher in the high versus low price condition. However, this effect was stronger for Asians/Hispanics than for Caucasians, as evidenced by the significant two-way interaction noted above, as well as by the effect sizes ($r_{\text{Caucasian}} = 0.24$; $r_{\text{Asian/Hispanic}} = 0.54$), replicating our previous findings that interdependents have a greater tendency than independents to judge quality from price. In the analytic thinking condition, as expected, neither Caucasians ($M_{\text{High price}} = 5.17$, $M_{\text{Low price}} = 5.01$; $t(47) = -0.56$, $p > .58$), nor Asians/Hispanics ($M_{\text{High price}} = 4.36$, $M_{\text{Low price}} = 4.56$; $t(62) = 0.74$, $p > .46$) evaluated high versus low priced products differently.

These findings provide further evidence that holistic thinking increases the tendency to make price-quality judgments. Being led to think holistically facilitated relational processing, even from those who presumably tend to think analytically (Caucasians). However, being led to think analytically eliminated the tendency to judge quality based on price, even among those who tend to think holistically (Asians and Hispanics).

This study supports the role of holistic thinking, the tendency to perceive interrelations between elements, as under-

FIGURE 2

PERCEIVED QUALITY UNDER HOLISTIC AND ANALYTIC THINKING CONDITIONS IN STUDY 3



lying self-construal differences in price-quality judgments. It also establishes a contextual boundary condition for these effects. The next two studies provide further support for this process account by examining other moderators. Both studies replicated the tendency for interdependent (vs. independent) consumers to perceive a greater price-quality relation, but also identified contexts in which such a difference would not be observed, either by examining a situation in which both groups would readily perceive relations between price and quality (studies 4 and 5), or one in which neither group would view price information as related to quality (study 5).

STUDY 4: SYMBOLIC VERSUS NONSYMBOLIC PRODUCTS

Research suggests that products that are relatively symbolic of self-concept tend to elicit broader interpretations of quality (see Shavitt 1990; Shavitt et al. 1992). Other research suggests that judgments of products that are high in symbolism tend to draw upon more product characteristics (Reddy et al. 1994). We further validated this assumption in a pilot study ($N = 41$), which revealed that consumers think about more factors ($M_{\text{symbolic}} = 4.65$, $M_{\text{nonsymbolic}} = 3.63$; $t(40) = 4.26$, $p < .001$) when considering the quality of symbolic products (watches, bicycles, and hand gloves) than the quality of nonsymbolic products (paper towels, shaving cream, hand soaps) and also associate the quality of symbolic (vs. nonsymbolic) products with a greater number of aspects ($M_{\text{symbolic}} = 4.88$, $M_{\text{nonsymbolic}} = 3.25$; $t(40) = 6.62$, $p < .001$).

If quality is potentially relevant to more things for symbolic products, then this should facilitate relational processing because it is easier to find relations among product characteristics. This should enable independents as well as interdependents to make price-quality judgments for symbolic products. However, for less symbolic products (e.g., shaving cream), because they elicit relatively fewer associations between quality and other elements, interdependents (but not independents) should use price to judge quality because of their relational processing advantage.

Method

One hundred and ninety undergraduates (42% females; $M_{\text{age}} = 23.17$) at the University of Texas at San Antonio participated. The procedure and measures were similar to those in study 1b, except that we used six products instead of one. Participants read descriptions of three brands each in six product categories (three relatively symbolic products [bicycle, hand gloves, watch] and three relatively nonsymbolic products [paper towels, shaving cream, hand soap]). The products were selected based on a pilot study ($N = 60$) that showed that symbolic compared to nonsymbolic products were perceived as better able to express people's identity ($M_{\text{symbolic}} = 4.78$, $M_{\text{nonsymbolic}} = 2.45$; $t(59) = 16.85$, $p < .001$). In contrast, the nonsymbolic compared to symbolic products were perceived to be significantly more functional and practical ($M_{\text{symbolic}} = 5.01$, $M_{\text{nonsymbolic}} = 6.12$; $t(59) = -9.47$, $p < .001$).

The study involved a 2 (product type: nonsymbolic, symbolic; within subjects) × 2 (ethnicity: Caucasian, Asian/Hispanic; between subjects) × 2 (price of target brand: high, low; between subjects) mixed design. Descriptions of each brand included a few attributes and price, all of which were selected from major online retailers (e.g., target bicycle: 18 speeds with twist shifting, adjustable seat height). The baseline brands were priced the same in the two price conditions and had the same attributes. The evaluations of the three (non)symbolic products were averaged to form a composite evaluation score of (non)symbolic products.

Results and Discussion

A GLM with type of product (symbolic, nonsymbolic) entered as a repeated-measures factor and participant ethnicity and price condition entered as between subjects factors revealed a significant three-way interaction ($F(1, 156) = 5.98$, $p < .02$). As predicted, for symbolic products, the interaction between price condition (low, high) and ethnicity was nonsignificant ($F(1, 156) = 0.13$, $p > .71$), suggesting as expected that in this condition, Asians/Hispanics and Caucasians did not differ in the tendency to make price-quality judgments. However, for nonsymbolic products, the interaction between price condition and ethnicity was significant ($F(1, 156) = 4.85$, $p < .03$). Follow-up contrasts were also supportive of predictions. For symbolic products, both Asians/Hispanics ($M_{\text{High price}} = 5.18$, $M_{\text{Low price}} = 4.74$; $t(106) = -2.82$, $p < .01$) and Caucasians ($M_{\text{High price}} = 5.39$, $M_{\text{Low price}} = 4.85$; $t(50) = -2.57$, $p < .02$) evaluated the products more favorably in the high price than in the low price condition. However, for nonsymbolic products, Asians/Hispanics ($M_{\text{High price}} = 4.78$, $M_{\text{Low price}} = 4.26$; $t(106) = -3.26$, $p < .001$), but not Caucasians ($M_{\text{High price}} = 4.46$, $M_{\text{Low price}} = 4.58$; $t(50) = 0.47$, $p > .63$) evaluated the products more favorably in the high versus low price condition.

Previous research primarily conducted among independents (in the Western world) suggests that the strength of the price-quality association differs by product category (e.g., Monroe 2003). We advance this line of work by suggesting that self-construal influences these associations. Consistent with the relational processing framework we outlined, Caucasians and Asians/Hispanics differ in the types of products for which they use price to judge quality. Both groups make price-quality judgments for symbolic products. In contrast, for nonsymbolic products, price-quality judgments were only observed for interdependents (Asians/Hispanics).

STUDY 5: BANDWIDTH OF QUALITY MEASURE

Considerable previous research has examined the effectiveness of "broad" and "narrow" measures in various domains (Jenkins and Griffith 2004). Broad-bandwidth measures assess global, expansive, or general traits like "extraversion."

Narrow-bandwidth measures assess relatively specific, restricted, or limited traits like "talkativeness" (Ones and Viswesvaran 1996). Because very broad measures of quality (e.g., overall evaluations) tend to be more inclusive, general, and abstract, they encompass multiple attributes and interpretations of quality (see Ones and Viswesvaran 1996). We predicted that broad measures of quality will facilitate relational processing, and this will lead both independents and interdependents to make price-quality judgments. However, when the measure of quality is narrow, relational processing should be restricted among both groups and, hence, neither independents nor interdependents should make price-quality judgments.

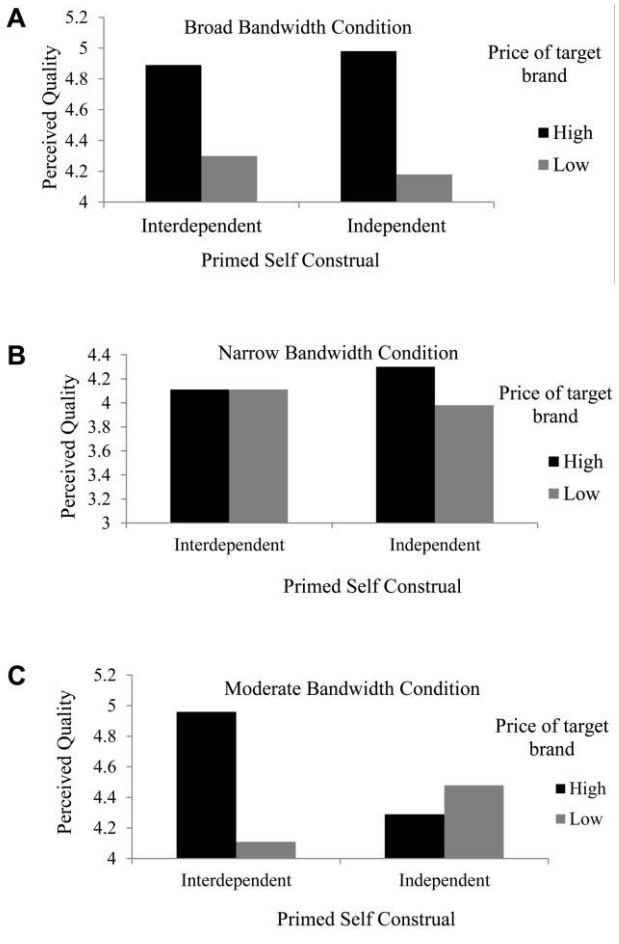
Method

Participants and Design. Two hundred and sixty-four undergraduates from the Indiana University at Bloomington participated in exchange for class credit. The study had a 2 (price of calculator: high, low) × 2 (self-construal: independent, interdependent) × 3 (quality measure bandwidth: broad, narrow, moderate) between-subjects design. The price manipulation and product used were as in study 3. Self-construal was primed as in study 1c.

Bandwidth Manipulation. In the moderate bandwidth condition, we used the same items to measure quality as in studies 1b and 3 (i.e., quality, reliability, durability; $\alpha = 0.86$). In the broad bandwidth condition, the items were more abstract and inclusive (overall evaluation, aggregate attitude, overarching opinion; $\alpha = 0.93$). In the narrow bandwidth condition, items addressed specific durability attributes: "The buttons of the Becker calculator will remain responsive over repeated use," "The Becker calculator will be able to withstand being dropped or handled roughly," and "The Becker calculator will be able to withstand spills or moisture" ($\alpha = 0.59$). All items in all conditions were measured on 7-point scales (e.g., 1 = not at all, 7 = very much so).

FIGURE 3

PERCEIVED QUALITY BY BREADTH OF THE QUALITY MEASURE IN STUDY 5



Results and Discussion

A GLM on evaluations of the calculator revealed a significant three-way interaction between price condition, bandwidth of quality measure, and self-construal ($F(1, 252) = 3.17$, $p < .05$). Further analyses examined these differences in each bandwidth condition (see fig. 3).

Moderate Bandwidth. When the quality measure was of moderate bandwidth, as in our prior studies, the two-way interaction between price condition and self-construal was significant ($F(1, 82) = 5.67$, $p < .05$). Replicating our prior studies, interdependents judged the calculator to be significantly better when it was priced high versus low ($M_{High} = 4.96$, $M_{Low} = 4.11$; $t(37) = -2.79$, $p < .01$), suggesting that they used the price of the product to estimate its quality. In contrast, independents judged the target calculator to be similar in the high and low priced conditions ($M_{High} = 4.29$, $M_{Low} = 4.48$; $t(45) = 0.63$, $p > .53$). These results replicate those of studies 1a–1c and suggest that when the quality measure is of moderate bandwidth, interdependents (but not independents) use the price of a product to judge its quality.

Broad Bandwidth. When the quality measure was very broad, the two-way interaction between price condition and self-construal was not significant ($F(1, 81) = 0.24$, $p > .63$). As expected, both independents ($M_{High} = 4.98$, $M_{Low} = 4.18$; $t(38) = -2.35$, $p < .05$) and interdependents ($M_{High} = 4.89$, $M_{Low} = 4.30$; $t(43) = -2.09$, $p < .05$) judged the high versus low priced calculator to be better; that is, both relied on price to judge quality in the broad sense.

Narrow Bandwidth. When the quality measure was restricted to specific aspects of durability, the two-way interaction between price and self-construal was not significant ($F(1, 89) = 0.62$, $p > .43$), as expected. Independents ($M_{High} = 4.30$, $M_{Low} = 3.98$; $t(50) = -1.28$, $p > .20$) and interdependents ($M_{High} = 4.11$, $M_{Low} = 4.11$; $t(39) = -0.00$, $p > .99$) both judged the high and low priced calculator to

be similar; that is, neither relied on price to judge quality in the narrow sense.

Study 5 provided further support for our hypothesized framework by showing that when quality is measured in broad terms that foster seeing associations with other aspects of the product, independents are able to process information relationally. Hence, both independents and interdependents make price-quality judgments. In contrast, when quality is measured in narrow terms, relational processing is restricted for everyone and, hence, neither interdependents nor independents make price-quality judgments. Finally, consistent with our previous studies, when a moderate-bandwidth measure of quality is used, only interdependents make price-quality judgments because they possess a relational processing advantage.

GENERAL DISCUSSION

Seven studies examined whether and how price-quality judgments are influenced by cultural self-construals. We sought to determine whether differences in price-quality judgments exist across self-construals, national groups, and ethnic groups and to examine the underlying mechanisms responsible and boundary conditions. We predicted and found that interdependence (vs. independence) is associated with a greater tendency to use price to judge quality and that this effect is mediated by holistic thinking. These relationships were observed across a variety of price-quality measures and several different operationalizations of self-construal and thinking style. In studies 1a–1c, interdependence, but not independence, was associated with the tendency to rely on product prices to judge quality. Studies 2 and 3 showed that these differences can be attributed to interdependents' (vs. independents') tendency toward relational processing, which enables them to think holistically. Accordingly, holistic thinking mediated the relationship between self-construal and price-quality judgments.

Studies 4 and 5 provided further support for the underlying process by showing that when the product or measure facilitates relational processing, this enables everyone (including independents) to make price-quality judgments and, hence, mitigates self-construal differences. For instance, when the product category facilitates symbolic connections (study 4) or when the measure of quality is very broad (study 5) both independents and interdependents are prone to using the price of a product to infer its quality. However, when the measure of quality is narrow (study 5), relational processing is restricted for everyone, and hence, neither group makes price-quality judgments. Collectively, the studies shed light on when and why cultural self-construal affects the tendency to make price-quality judgments. They also reveal a number of novel boundary conditions for the effect of thinking styles on consumer judgments.

Theoretical and Managerial Contributions

This research offers a number of contributions. It identifies—for the first time—the role of cultural variables in moderating a key effect in the literature. Our findings also contribute to the cross-cultural literature by extending knowledge about how cultural variables, as mediated by thinking styles, influence product perceptions. We also contribute to theory by proposing and finding support for a relational processing framework that allows us to predict when self-construal differences in price-quality judgments will emerge. Specifically, we identified product-related and contextual conditions in which both independents and interdependents (or neither of them) make price-quality judgments. We also rule out alternative accounts of these relationships based on acquiescence and risk aversion.

Importantly, our predictions and findings diverge somewhat from those of the holistic thinking framework. According to a holistic thinking framework, interdependents versus independents should always have a greater tendency to make price-quality judgments. However, our studies revealed that this is not always so. When the product or measure-related characteristics facilitate relational processing, everyone (i.e., both independents and interdependents) makes price-quality judgments.

Managerially, our results have implications for market segmentation strategies. Our findings could inform the identification of viable target markets for brands whose price points exceed their competitors' prices. Interdependent consumers (including members of ethnic groups such as East Asians or national groups such as Indians) may represent better prospective markets for higher-priced brands, particularly in product categories where brands compete on the basis of quality. In addition, marketers could enhance consumers' acceptance of higher priced brands by encouraging holistic thinking during brand exposure (e.g., by running ads that invite consumers to identify connections or patterns in a larger picture, similar to the prime in study 3).

We are aware of a study that may seem inconsistent with the notion that interdependents have a greater tendency to make price-quality judgments than do independents. Zhou et al. (2002) found that Chinese participants scored lower on the price-quality scale than did Americans, and they explained these differences on the basis of national differences in marketplace efficiencies. For instance, in less competitive (monopolistic or even oligopolistic) markets, price may be perceived as less diagnostic of product quality. In that study, neither independence/interdependence nor thinking styles were examined. Although the findings shed light on a national-group difference in price-quality beliefs, we suggest that to fully anticipate the role of culture in price-quality judgments it is necessary to consider how and when price information is used by consumers, and to do so in situations in which marketplace characteristics are not confounded with the cultural differences that are examined.

Directions for Future Research

Our findings suggest that symbolic (vs. nonsymbolic) products and broad (vs. moderate or narrow) bandwidth measures facilitate relational processing and enable both independents and interdependents to make price-quality judg-

ments. Other research suggests that when consumers consider multiple attributes, they tend to take the average of the attributes, which in turn mitigates their tendency to perceive a connection between any two specific attributes. Indeed, the averaging model has been shown to explain consumers' tendency to integrate multiple attributes and pieces of information better than other models (Hamilton and Chernev 2010; Lalwani and Monroe 2005; Trotman and Shanteau 1976). This account would imply that considering additional associations will dilute the price-quality relationship. If interdependents, being holistic thinkers, see quality as linked to more factors than price alone, and vice versa, this tendency could mitigate the relational processing advantage they enjoy over independents. It could also make interdependents more likely to notice relatively low levels of overlap between price and quality (see Ahluwalia 2008), and this may be more likely as additional quality associations are brought to mind. We speculate that this effect may emerge when quality is seen as associated with broader attributes than considered in the current research. Future research should explore this possibility.

Our findings indicate that interdependents tend to use price to judge quality, whereas independents do this less so. On the face of it, this result may seem inconsistent with extensive previous research in Western societies, indicating that price information is often used to judge product quality (e.g., Rao and Monroe 1989). However, across almost all of our studies conducted in the United States, we found a robust price-quality effect in the aggregate (i.e., across US participants of differing self-construals), replicating past work. Instead, our results suggest that prior findings may be moderated by the cultural self-construals of consumers, highlighting the types of people for whom price information is most likely to be viewed as diagnostic of quality.

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