The Moderating Effect of Prior Knowledge on Cue Utilization in Product Evaluations*

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This article examines the dissimilar use of product information cues in product evaluations by differentially familiar subjects. Specifically, the use of price cues and intrinsic product cues for the assessment of product quality is hypothesized to depend on prior knowledge. For a product with a positive quality-price association in the marketplace, the study shows that low-familiar and highly familiar subjects tend to perceive a stronger price-quality relationship than do moderately familiar subjects. Moreover, as subjects' product familiarity increases, the use of intrinsic cues for product quality assessments tends to become relatively stronger.

H ow consumers use information to evaluate products has attracted considerable empirical research attention since Leavitt (1954) examined the use of price in assessing product quality. Under the rubric of "price-quality" or "price-perceived quality" research, studies have examined consumers' tendency to use price and other product-related information to impute quality to consumer and industrial products. More recently, studies on information search (Punj and Staelin 1983), recall (Johnson and Russo 1984), and use (Park and Lessig 1981) suggest that prior product knowledge (or familiarity with the product) influences the extent to which consumers search for, recall, and use information in judgments of product quality and in product choice.

The purpose of this article is to examine the moderating effect of prior product knowledge or familiarity on the degree to which price (an extrinsic cue) and intrinsic product information (physical and perfor-

mance attributes) are used to assess product quality. The relative use of these different information cues in assessing product quality should vary depending on the extent of buyers' prior product knowledge and the actual relationship between the cue and product quality for a specific product class.

LITERATURE REVIEW

This review examines relevant literature on the price-perceived quality research stream and the issue of prior knowledge.

Price-Perceived Quality

Conceptually, the economic and behavioral paradigms that have been used to study the price-product purchase decision relationship suggest that price may play multiple roles in this choice process. In traditional economic theory, since higher prices have a negative impact on consumers' budgets, price is viewed as having a negative influence on choice. But, from a behavioral perspective, price may also be perceived as a product quality cue (Monroe and Krishnan 1985). Therefore, price may be viewed as an indicator of sacrifice, or as a quality cue, or both.

Attempts to validate the price-quality relationship have proceeded along two different approaches. One approach has been to test whether a positive correlation between actual product quality and price exists. As noted by Scitovsky (1945), the tendency to use price as an indicator of quality merely implies the belief that price is set by the competitive interplay of the forces of supply and demand. A higher price may thus be an indicator of more expensive input in terms of factors of production, thus suggesting a higher quality end product. To determine whether this belief is justi-

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fied, studies have used some "objective" criteria to examine whether higher-priced options are of better quality than lower-priced options (Riesz 1978, 1979; Sproles 1977). Recently, Gerstner (1985) assessed the degree of positive correlation between quality and price for 145 products and concluded that the relationship between quality and price appeared to be product-specific and generally weak. His findings suggest that some products display a positive quality-price association in the marketplace, but others do not.

Beginning with Leavitt's (1954) study, a second approach has been to attempt to verify that buyers do perceive a positive price-quality relationship. Although the statistical significance of the various research efforts has been inconsistent, integrative reviews of this research stream indicate a positive price-perceived quality relationship (Monroe and Krishnan 1985; Rao and Monroe 1987).

One key difference between the economic and behavioral conceptualizations on the use of price in purchase decisions is the assumption of *perfect information*. Although the classical economists' assumption of complete information has been relaxed in the information signaling literature (e.g., Farrel 1980; Wolinsky 1983), the assumption that consumers are perfect information processors remains. However, the assumption that consumers are rational, deliberative agents, completely cognizant of their own utility functions, who perceive information cues accurately has been challenged as unrealistic (Monroe 1979; Schmalensee 1978; Wilkie 1974).

This assumption of perfect information processing is analogous to the notion of familiarity based on prior knowledge in consumer research. Acknowledging that consumers often are not completely familiar with products and product alternatives, several researchers have suggested that consumer expertise or familiarity may mediate the effect of price on perceptions of quality (Jacoby, Olson, and Haddock 1971; Rao 1971; Scitovsky 1945; Shapiro 1968). Indeed, research examining the effect of prior purchase/use experience on the price-perceived quality relationship supports the argument that knowledge or familiarity does influence the impact of price on buyers' quality assessments (Enis and Stafford 1969a, 1969b; Monroe 1976; Raju 1977; Valenzi and Eldridge 1973; Venkataraman 1981; Wheatley, Walton, and Chiu 1977). Novice or unfamiliar buyers tend to use price as an indicator of quality to a greater extent than expert or familiar buyers. However, these prior research efforts have not presented a conceptual framework to explain why differential knowledge or familiarity moderates the use of price as an indicator of product quality. This article develops such a framework in a later section.

Prior Knowledge

The impact of prior knowledge or familiarity on consumers' information processing has been a feature of traditional (Howard and Sheth 1969) as well as recent (Bettman 1979) information processing theories of consumer choice. Conceptually, it has been argued that prior knowledge facilitates the acquisition of new information as well as the use of existing information (Park and Lessig 1981). This section reviews some relevant conceptual and empirical issues on prior knowledge and consumer information search and use strategies.

Impact of Prior Product Knowledge on Information Use. Hayes-Roth (1977) and Marks and Olson (1981) argue that increased familiarity leads to better developed knowledge structures or "schema" about a product. These well-developed schema often include evaluative criteria and rules, and any relevant stimulus may trigger associations in the schema resulting in the use of the evaluative criteria and rules for product assessments. Based on this logic, Park and Lessig (1981) proposed that differentially familiar consumers have differentially developed schema, and thus would use different information in product evaluations. Also, as familiarity increases, prior knowledge is enhanced qualitatively and quantitatively in that increasingly familiar consumers are more knowledgeable about a greater number of attributes. Examining three levels of perceived familiarity, they found that subjects in the low familiarity condition selected extrinsic information such as brand name as the only product attribute of significance, but subjects in the high familiarity condition needed only brand information to generate a complex schema that included information about other product attributes. Thus, in product evaluations, low- and highly familiar subjects used the same (brand) information, but for different reasons. However, moderately familiar subjects who had the basic degree of familiarity necessary to assess the importance of attributes, but were not familiar enough to use brand name alone, were most confident when using intrinsic cues in their product evaluations.

Definition of Prior Product Knowledge. In the past, researchers have used the terms familiarity, expertise, and experience interchangeably when referring to prior knowledge. However, Alba and Hutchinson (1987) suggest that consumer knowledge has two components: familiarity and expertise. Familiarity is defined as the number of product-related experiences accumulated by a consumer, and expertise is the ability to perform product-related tasks successfully. In general, product experience is a necessary but insufficient condition for consumer expertise.

Operationally, prior product knowledge has been defined either in terms of what people perceive they

know about a product or product class (subjective knowledge) or in terms of what knowledge an individual has stored in memory (objective knowledge; Brucks 1985). However, what people perceive they know is likely to depend on what they actually know as well as their self-confidence in the amount and type of knowledge held in memory (Park and Lessig 1981). Thus, for this research, prior product knowledge is defined to encompass the amount of accurate information held in memory about product alternatives as well as buyers' self-perceptions of this product knowledge (i.e., what they believe they know).

Linking Prior Product Knowledge to Use of Price as an Indicator of Product Quality

Building on Cox's (1962) dichotomy of information cues, Olson (1973) proposed that any product cue could be derived from the actual physical product (intrinsic cue) or from product-related attributes apart from the physical product (extrinsic cue). To the extent that consumers have learned through acquisition of product knowledge that price (an extrinsic cue) is an accurate predictor (signal) of quality, they will look for shortcuts in decision-making and use prices to assess relative product quality. However, if through acquisition of product knowledge, consumers learn that price is not an accurate predictor (signal) of quality, then they more likely will use other intrinsic or extrinsic cues to assess product quality. The specifics of this argument are developed next.

As previously suggested, the degree of prior knowledge consumers have about a product will influence the cues used to make product quality assessments. Unfamiliar or low-familiar consumers will be more likely to use extrinsic cues such as price in product quality assessments, because they have relatively little intrinsic product information in memory and a less-developed schema, making processing intrinsic information more difficult. However, as consumers become more familiar with the product, their ability to assess product quality based on their knowledge of intrinsic attributes that are informative about quality improves. Thus, as consumers achieve a moderate level of familiarity, their better knowledge structure increases their ability to examine intrinsic information successfully. Consequently, the relative reliance of moderately familiar consumers on extrinsic cues such as price to evaluate product quality will decrease in favor of using intrinsic cues.

As consumers achieve a high degree of familiarity with the product, they continue to be able to assess product quality through an examination of intrinsic cues. However, what distinguishes highly familiar consumers from moderately familiar consumers is highly familiar consumers' knowledge of market-based information about the product class that also

allows them to relate extrinsic information to product quality. Therefore, as consumers proceed along the familiarity continuum from low to moderate, they develop the ability to relate intrinsic cues to product quality, as such cues are reliable and therefore will be learned first. As consumers achieve relatively higher familiarity, the ability to relate intrinsic cues to quality is augmented by the ability to relate surrogates (such as price) to product attributes, and thus to quality. Note that the ability of highly familiar consumers to relate intrinsic cues to product quality is not necessarily higher than that of moderately familiar consumers.

Thus, low-familiar consumers are more likely to use price rather than intrinsic cues as an indicator of product quality. Moderately familiar consumers are less likely to use price as an indicator of quality and instead would tend to use intrinsic cues for such inferences. However, highly familiar consumers can use either price or intrinsic cues as indicators of quality. They are more likely to use price if they know there is an actual price-quality relationship in the product-market, because price information is easier to interpret and process than intrinsic information.

Since highly familiar consumers are capable of using intrinsic and extrinsic cues to assess product quality, their use of intrinsic cues (or both extrinsic and intrinsic cues) will depend on the *diagnostic value of the extrinsic information*. Specifically, if a product is known to exhibit a positive price-quality association in the marketplace, then highly familiar consumers will be aware of such an association and will be confident that prices are reliable predictors (signals) of product quality. Hence, they will be more likely to rely on price as a signal of product quality. Conversely, if a product's price-quality association is weak, then highly familiar consumers, aware of this association, will not be confident that prices are reliable predictors (signals) of product quality. Therefore, they will be more likely to use cues other than price to assess product quality. Based on this conceptual argument, specific operational hypotheses to predict when buyers are expected to perceive price as an indicator of product quality are developed next.

HYPOTHESES

In quality assessments, highly familiar consumers will exercise their discriminating ability and use information they are confident is diagnostic about product quality, but moderately familiar consumers will primarily use intrinisic information and low-familiar consumers, extrinsic information. Therefore:

H1: For a product exhibiting a positive price-quality association in the marketplace, the positive effect of price on perceptions of

product quality is greater for highly familiar subjects than for moderately familiar subjects.

Further, since low-familiar consumers are more likely to rely on price information than moderately familiar consumers:

> **H2:** Regardless of whether a product exhibits a positive price-quality association in the marketplace, the positive effect of price on perceptions of product quality is greater for low-familiar subjects than for moderately familiar subjects.

As a consequence of their better developed schemata, more knowledgeable consumers are likely to be better able to comprehend and thus evaluate intrinsic cues. Therefore, the following hypotheses were developed.

> **H3:** Given the greater ability of increasingly familiar consumers to assess the quality connotations of intrinsic cues, the positive effect of intrinsic cues on perceptions of product quality is greater for moderately familiar subjects than for low-familiar subjects.

> **H4:** Given the greater ability of increasingly familiar consumers to assess the quality connotations of intrinsic cues, the positive effect of intrinsic cues on perceptions of product quality is greater for highly familiar subjects than for low-familiar subjects.

Note that no hypothesis is proposed for intrinsic cue-perceived quality effects being different for highly familiar and moderately familiar subjects. As argued earlier, these groups are conceptualized to differ not on intrinsic cue knowledge or usage, but on the degree and accuracy of market-based (extrinsic) information. Hence, the qualitative dimension of the difference between the two groups allows for hypotheses of differential extrinsic cue usage, and not of differential intrinsic cue usage.

Finally, highly familiar consumers are likely to be aware of an absence of an actual quality-price association in the marketplace and thus would not be likely to perceive price as an indicator (signal) of quality. Because this prediction was not specifically examined in this study, it is stated as a proposition:

> **P1:** *For a product that displays little or no association between price and quality in the marketplace,* the positive effect of price on perceptions of product quality will be weaker for highly familiar consumers than for low-familiar consumers.

METHOD

Product Selection

Two principle considerations guided the selection of a product to be used in the study: (1) the product should exhibit a strong positive price-quality association in the marketplace; and (2) the product should be appropriate for use as a stimulus on a population of available subjects such that three differentially familiar groups of subjects could be identified for the product. Trade representatives were contacted to provide an initial list of products that did and did not exhibit price-quality associations in the marketplace. Comparing this initial set to Gerstner's (1985) list of products manifesting positive price-quality associations produced three potential product categories: women's clothing, electronic products, and bicycles. Finally, given the possibility of identifying three differentially familiar groups of subjects (men, women, and experts in clothing and textiles). The category of women's blazers was selected as the test product.

Knowledge Measure

Previous studies investigating the impact of differential knowledge or information on the price-perceived quality relationship have used either previous purchase/use experience or a manipulation of available information to explain differential results. However, individual subject's actual prior product knowledge held in memory was neither measured nor controlled. Additionally, previous purchase/use experience influences behavior only to the extent that such experiences result in different information held in memory by different consumers. Thus, since previous price-quality research has neither measured nor manipulated the actual amount of subjects' prior product knowledge, developing a measure of this construct was critical for this research.

As argued earlier, objective and subjective knowledge, although conceptually distinct, empirically are highly correlated, and are thus difficult to separate operationally. Clearly, subjective knowledge depends on the level of objective knowledge. Therefore, as the conceptualization did not predict any differences based on subjective or objective knowledge, a composite multiitem scale combining an assessment of information in memory with self-assessed perceptions of familiarity was used to measure prior knowledge.

Brucks (1986) suggests that a measure for prior knowledge or familiarity should include eight dimensions that help in discriminating among people's knowledge structures. Using the taxonomy suggested by her as well as advice from experts in clothing and textiles, a scale was developed to measure subjects' familiarity with women's blazers. This scale com-

prised 13 objective knowledge-based questions that assessed subjects' knowledge of brand names, store names, technical terms, and appropriate usage situations. Further, a five-point scale for self-assessed familiarity was included. Questions were weighted according to expert opinion on degree of difficulty, resulting in a maximum achievable score of 45. (The Appendix, which contains the familiarity scale, and Exhibit 3, which contains the grading scheme, are located at the end of the article.)

Thirty-five college students participated in a pretest to determine the cutoff points for the three familiarity conditions on the knowledge scale and to select levels of independent variables. Of these 35 subjects, a priori, 10 males were considered low-familiar, 13 females (who were not clothing and textiles majors) were considered moderately familiar, and 12 clothing and textile majors were considered highly familiar. (This procedure is similar to that used by Sujan 1985 in her categorization of novices and experts for cameras.)

On the knowledge scale, low-familiar subjects (males) scored an average of 10.8 (with a standard deviation of 4.5), moderately familiar subjects (females who were not clothing and textiles majors) scored 21.8 (with a standard deviation of 4.5), and highly familiar subjects (clothing and textile majors) scored 29 (with a standard deviation of 8.2). Based on this evidence and an inspection of the frequency distribution of familiarity scores, 15 and 26 were chosen as cutoff points for the three familiarity conditions.

Design

Based on pretest results, two intrinsic cue levels (Harris Tweed for the high quality and virgin wool for the low quality) were crossed with four levels of price information ($49, $99, $149, and $199) in a 4 × 2 factorial between subjects experiment. The label Harris Tweed represented the high intrinsic cue level and included information on collars and shoulders. Similarly, the low intrinsic cue level, labeled virgin wool, included a description of the lining. Thus, the two experimental descriptions comprised several elements that *collectively* represented either a high or low level of quality for the intrinsic cue manipulation (see Exhibits 1 and 2).

Analytically, there were three separate but identical experiments for the low-, moderate-, and high-familiarity subjects. As the assignment of subjects to the three familiarity conditions was not random, this design is not viewed as a 3 × 4 × 2 design but rather as a comparison of results from three 4 × 2 designs.

Sample and Experimental Procedures

Responses were collected from 196 subjects randomly selected from a pool of students enrolled in marketing principles classes and junior- and senior-level clothing and textile classes at a state univeristy in the Southeastern United States. In each experiment, subjects were assigned randomly to one of the eight treatment conditions and were requested to rate on the dimensions of workmanship, quality, and durability on seven-point scales descriptions of a woman's blazer in comparison with a standard Shetland wool blazer priced at $124. (Subjects performed a comparison task, because otherwise, low-familiar subjects would have had little basis on which to make evaluations.) Multiple indicators of quality were used to permit an assessment of the reliability of the perceived quality measure. The specific dimensions were selected from a list of items used in past research that were considered appropriate for blazers. Product descriptions were based on standard catalog descriptions and experts on clothing and textiles examined them to validate their authenticity.

The knowledge scale preceded the stimulus in the questionnaire to ensure that subjects were not exposed to the stimulus before the knowledge scale was administered, thus guarding against potential contamination.

ANALYSIS

Sixty-eight low-familiar subjects scored an average of 10.4 (with a standard deviation of 3.4), 70 moderately familiar subjects scored an average of 20.5 (with a standard deviation of 2.7), and 58 highly familiar subjects scored an average of 32 (with a standard deviation of 3.6) on the familiarity scale. The standardized item alpha for this scale was 0.78. Based on scores on the knowledge scale, responses were analyzed in one of the three 4 × 2 experimental designs. Cell sample sizes ranged from a low of six to a high of 13 across all three experiments. This unbalanced design necessitated the use of the General Linear Models procedure available on *SAS* as prescribed by Perreault and Darden (1975).

Plan of Analysis

First, the reliability of the three dependent measure indicators was computed ($\alpha = 0.81$). The interitem correlations ranged from 0.49 to 0.72. Therefore, the arithmetic mean of the responses was computed as a composite measure of perceived quality.

Effect Sizes. An effect size provides an index of association between variables, and in its simplest form is the difference between treatment and control group means weighted by the inverse of an estimate of error variance. This study pitted similar experimental scenarios against each other, and since systematic error was the same in all three conditions, support for

EXHIBIT 1

SAMPLE STIMULUS MATERIAL

Instructions

PLEASE READ THE INFORMATION PROVIDED BELOW VERY CAREFULLY. You are being requested to respond to certain questions and statements about Product B, a woman's blazer. Please assume that you are genuinely interested in purchasing a woman's blazer, if not for yourself, for a friend.

Product A: Classic feminine wool blazer constructed of 100% Shetland wool. Finely tailored with a distinctive texture. Lined with a 60% polyester and 40% cotton fabric. Dry cleaning is recommended. Styled with 3″ lapels, and two convertible flapped waist pockets.
Price: $124

Product B: Classic English blazer in authentic handwoven Harris Tweed. Precisely tailored with handsewn collars and hand-pressed shoulders. Fully nylon lined with two besom pockets and one inside shell pocket. Dry cleaning is recommended.
Price: $49

For the products described above, please respond to the following statements by circling the number corresponding to the scales below the statements that best express your feelings.

1. In comparison to Product A, the workmanship of Product B appears to be:

1	:	2	:	3	:	4	:	5	:	6	:	7
very high		moderately high		slightly high		neither high nor low		slightly low		moderately low		very low

2. In comparison to Product A, Product B appears to be of:

1	:	2	:	3	:	4	:	5	:	6	:	7
very good quality		moderately good quality		slightly good quality		neither good nor poor quality		slightly poor quality		moderately poor quality		very poor quality

3. Product B appears more durable than Product A.

1	:	2	:	3	:	4	:	5	:	6	:	7
strongly agree		moderately agree		slightly agree		neither agree nor disagree		slightly disagree		moderately disagree		strongly disagree

the hypotheses was assessed by examining the relative magnitude of effects. When systematic error is equivalent across different experiments, comparing standardized indices of response variation to identical independent variable variations is reasonable. Specifically, the empirical issue is whether the degree to which effects differ from the null hypothesis across familiarity conditions reflects the relationships predicted by the hypotheses.

Examining Contrasts. The hypotheses proposed specific trends in the response variable for each level of familiarity. For instance, for the low-familiar and highly familiar subjects, perceptions of quality were expected to increase with increasing levels of price; such a trend was not expected for the moderately familiar group. Focused contrast analyses, more powerful than omnibus tests (Rosenthal and Rosnow 1984), were performed to examine such trends.

As the price factor had three degrees of freedom, three sets of orthogonal contrast coefficients were determined to assess the degree of linearity, quadracity,

and cubicity in the trend described by the response variable means. The hypotheses for price effects did not predict quadratic or cubic trends, but did predict the presence or absence of linear trends; therefore, only the linear contrast results were compared. This procedure allowed for greater power as the numerator in the F-test had only one degree of freedom. More specifically, when the contribution of nonlinear contrast components to the overall sums of squares is marginal relative to the accompanying degrees of freedom, the overall F-test is less powerful. Consequently, focused tests are appropriate when specific hypotheses can be predicted by theory.

The intrinsic cue factor had only one degree of freedom. Therefore, only the one linear contrast is possible and is equivalent to a computation of the main effect.

Although this study is not viewed as a familiarity × price × intrinsic cue design, the mean square error term from the larger three factor design was used in the computation of the F statistic for each effect (MSE

Instructions

PLEASE READ THE INFORMATION PROVIDED BELOW VERY CAREFULLY. You are being requested to respond to certain questions and statements about Product B, a woman's blazer. Please assume that you are genuinely interested in purchasing a woman's blazer, if not for yourself, for a friend.

Product A: Classic feminine wool blazer constructed of 100% Shetland wool. Finely tailored with a distinctive texture. Lined with a 60% polyester and 40% cotton fabric. Dry cleaning is recommended. Styled with 3″ lapels, and two convertible flapped waist pockets. Price: $124

Product B: Classic blazer in 100% virgin wool. Expertly constructed with clean lines and a slim silhouette. Lined with a synthetic acetate fabric and styled with 3″ lapels and two patch pockets. Dry cleaning is recommended. Price: $49

For the products described above, please respond to the following statements by circling the number corresponding to the scales below the statements that best express your feelings.

1. In comparison to Product A, the workmanship of Product B appears to be:

1	:	2	:	3	:	4	:	5	:	6	:	7
very high		moderately high		slightly high		neither high nor low		slightly low		moderately low		very low

2. In comparison to Product A, Product B appears to be of:

1	:	2	:	3	:	4	:	5	:	6	:	7
very good quality		moderately good quality		slightly good quality		neither good nor poor quality		slightly poor quality		moderately poor quality		very poor quality

3. Product B appears more durable than Product A.

1	:	2	:	3	:	4	:	5	:	6	:	7
strongly agree		moderately agree		slightly agree		neither agree nor disagree		slightly disagree		moderately disagree		strongly disagree

= 1.10). This is the more conservative approach, as the mean square error term from the larger design is a better estimate of σ^2.

RESULTS

The results of the study are presented in two parts: an examination of the hypothesized relationships and a discussion of some interesting findings from analyzing the interactions between price and intrinsic cue across familiarity conditions.

Hypothesized Relationships

Table 1 shows mean responses for each cell. The hypotheses predicted specific patterns of effects for the three groups for price and intrinsic cue. The following sections assess support for the hypotheses.

Price Effects. Hypothesis 1 states that highly familiar consumers display stronger positive price-perceived quality effects than do moderately familiar consumers. Hypothesis 2 states that low-familiar consumers display stronger positive price-perceived quality effects than do moderately familiar consumers. The results support both hypotheses. As Table 2 indicates, highly familiar subjects displayed a moderate effect (0.08), low-familiar subjects displayed a large effect (0.20), and moderately familiar subjects displayed a nonsignificant small effect (0.03).[1] These results suggest different price-perceived quality slopes for each of the groups.

Intrinsic Cue Effects. Hypotheses 3 and 4 state that moderately and highly familiar consumers display stronger positive intrinsic cue-perceived quality effects than do low-familiar consumers. Both hypoth-

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[1] Cohen (1977, pp. 284–288) provides guidelines for the interpretation of the magnitude of association between variables. In general, $0.059 < \eta^2 < 0.14$ indicates a moderate effect. Values lower than 0.059 indicate small effects and those greater than 0.14 indicate large effects.

TABLE 1

CELL MEANS

Intrinsic cue level	Price level			
	$49	$99	$149	$199
Low-familiar group				
Harris Tweed	4.28 (1.05)	4.61 (1.41)	4.91 (1.08)	5.38 (0.91)
virgin wool	3.17 (0.80)	4.78 (0.83)	4.56 (0.97)	4.85 (0.79)
Moderately familiar group				
Harris Tweed	4.54 (1.51)	4.91 (1.05)	5.05 (0.93)	5.37 (0.54)
virgin wool	4.04 (1.21)	3.70 (1.14)	4.44 (0.96)	3.93 (1.10)
Highly familiar group				
Harris Tweed	4.94 (0.57)	5.05 (1.21)	5.52 (0.88)	5.00 (1.19)
virgin wool	3.67 (1.13)	3.38 (1.27)	4.52 (1.16)	4.93 (1.04)

NOTE: Figures in parentheses are standard deviations. Means are on a seven-point scale, with one being low and seven being high.

eses were supported.[2] Low-familiar subjects displayed a small effect (0.05), but moderately familiar (0.18) and highly familiar subjects (0.20) displayed large and significant effects (Table 2). This result is not surprising, as increased knowledge should provide a greater ability to interpret intrinsic information.

Interactions

Apart from the hypothesized main effects, the interaction between price and intrinsic cue for each level of familiarity was examined. Specifically, the differential use of price when combined with differentially informative intrinsic cues was assessed for each level of familiarity. Linear contrasts within the simple effects (simple contrasts) were compared across familiarity levels in this analysis.

Overall, none of the interaction terms was statistically significant. However, as Table 3 indicates, the linear contrasts reveal a pattern of relatively large price effects for the virgin wool level of intrinsic cue for highly familiar and low-familiar subjects and for the Harris Tweed level of intrinsic cue for the low-familiar subject.

Just as certain products exhibit strong price-quality associations in the marketplace and others do not, different intrinsic attributes are also likely to exhibit differential price-quality associations. For instance, if we assume that durability is one indicator of quality and find that high speed silicon chips exhibit high durability-price associations in the marketplace and

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[2]Unfortunately, given the current state of statistical test theory, it is not possible to test for significance of differences between effect sizes, as their distributions are unknown. For our purposes, support for our hypotheses is provided by the significance (or lack of significance) associated with each effect size as well as the associated magnitude of the effect size.

TABLE 2

EFFECT SIZES (η^2) FOR LINEAR CONTRASTS

Independent variable	Familiarity level		
	Low	Moderate	High
Price	.20[a] (60)	.03[d] (62)	.08[b] (50)
Intrinsic cue	.05[c] (60)	.18[a] (62)	.20[a] (50)

[a] $p < 0.001$.
[b] $p < 0.05$.
[c] $p < 0.10$.
[d] Not significant.
NOTE: $\eta^2 = (F \times df_b)/[F \times df_b) + df_e]$. Figures in parentheses are df_e.

low speed chips exhibit low durability-price associations, experts in electronics are likely to be aware of this fact. As a consequence, highly familiar consumers would exhibit different price main effects on perceived durability for each level of chip speed (intrinsic cue) when evaluating differentially priced computers that use high- or low-speed chips. In essence, if the levels of the intrinsic cue exhibit different price-quality associations in the marketplace, given highly familiar consumers' ability to evaluate both types of information successfully, they are likely to display the strongest interaction of the three groups. The results support this contention. Specifically, in the virgin wool condition, a U-shaped relationship between familiarity and use of price as an indicator of quality is apparent, because the quality of blazers constructed from virgin wool varies with price. However, for Harris Tweed, the knowledge about tight quality standards in Scotland for this fabric seems to result in highly familiar buyers in the study not using price as an indicator of quality.

Table 3 also reports the simple linear effects of intrinsic cue across different price levels for each famil-

TABLE 3

EFFECT SIZES (η^2) FOR SIMPLE LINEAR CONTRASTS

Source	Familiarity level		
	Low	Moderate	High
Price in Harris Tweed	.15[c] (30)	.09[d] (27)	.01[d] (25)
Price in virgin wool	.24[a] (30)	.00[d] (35)	.22[b] (25)
Intrinsic cue in $49	.23[c] (19)	.06[d] (15)	.30[b] (12)
Intrinsic cue in $99	−.01[d] (10)	.26[c] (16)	.42[b] (12)
Intrinsic cue in $149	.03[d] (14)	.09[d] (14)	.20[c] (16)
Intrinsic cue in $199	.06[d] (17)	.34[a] (17)	.00[d] (10)

[a] $p < 0.025$.
[b] $p < 0.01$.
[c] $p < 0.06$.
[d] Not significant.
NOTE: $\eta^2 = (F \times df_b)/[(F \times df_b) + df_e]$. Figures in parentheses are df_e.

iarity condition. Only the one simple effect was significant for low-familiar subjects, but two were significant for moderately familiar subjects, and three were significant for the highly familiar subjects.

In general, the perception of superiority of Harris Tweed blazers over virgin wool blazers seems to increase as familiarity increases for a specific level of price. An exception occurs in the $199, high-familiarity condition where quality perceptions were not substantively different. One interpretation for this result is that the $199 price cue for virgin wool substantially affected quality perceptions.

The results of the post hoc analysis are interesting and in consonance with the theoretical rationale that motivated this study. That is, when product cues are informative, they will be used to make product evaluations, not otherwise. This result does lead to another prediction that is integral to the theory and is related to Proposition 1. Essentially, the proposition suggests the absence of a price and intrinsic cue interaction on perceived quality for all three differentially familiar groups, if the different intrinsic cues do not display objective quality-price associations in the marketplace.

> **P2:** *For a product that displays little or no difference in the association between price and quality in the marketplace for different levels of intrinsic cue,* the positive effects of price on perceptions of product quality will be the same for the different levels of intrinsic cue. This similarity will be manifested by low-familiar, moderately familiar, and highly familiar consumers.

CONCLUSIONS
Summary of Results

This study provides additional understanding of factors that may influence information utilization by consumers in product quality assessments. In particular, an attempt has been made to reconcile opposing perspectives on the use of price information in product quality assessments. This article argues that familiarity with the product is likely to mediate the price-perceived quality effect. It was hypothesized that for a product that displays a positive price-quality relationship in the marketplace, low-familiar and highly familiar buyers display a stronger positive price-perceived quality effect than do moderately familiar buyers. Moderately familiar and highly familiar buyers were expected to rely more on intrinsic cues to assess product quality than were low-familiar buyers.

Overall, the evidence suggests that, for a product category that exhibits a general price-quality association in the marketplace, the tendency to use price as

an indicator of product quality decreases and then increases with familiarity (a U-shaped curve). However, the post hoc analyses clearly indicate that this phenomenon occurred only for the product (virgin wool blazers) known to have relatively wider quality variations in the marketplace. For a product known not to have significant quality variations due to industry standards (Harris Tweed blazers), the use of price in product quality assessments tends to decrease with familiarity. This provides some support for the proposition that, for a product that does not exhibit quality variations in the marketplace, the use of price as an indicator of product quality decreases monotonically as buyers' familiarity with the product increases (Proposition 1). These findings are consistent with Scitovsky's (1945) argument that using price as an indicator of quality is rational behavior and reflects a learned belief about price-quality associations in the marketplace.

Limitations

Consistent with recent studies involving prior knowledge or familiarity (Brucks 1985; Sujan 1985), subjects' expertise was not experimentally manipulated. Thus, potential confounds such as involvement and motivation cannot be ruled out as rival hypotheses. However, a motivational explanation would predict a reduction in extrinsic cue usage as familiarity increased. Therefore, if motivation covaried with familiarity, it would be reasonable to expect a reduction in price-perceived quality effect sizes as familiarity increased for both intrinsic cue levels. However, this relationship was not observed. Hence, the results are more consistent with the conceptual argument presented in this article.

A second potential criticism is that statistically nonsignificant results could have been the consequence of low power. However, the notion of power is a moot point since sample sizes were equivalent across the three experiments. Therefore, if power to detect an effect was sufficient in one experiment, then power to detect an effect of the same magnitude or larger was sufficient in all three. Because power is directly related to sample size, the experiment with the lowest sample size should have generated the statistically nonsignificant results. However, the high-familiar group ($n = 58$) exhibited a statistically significant price main effect ($p < 0.05$), and the moderately familiar group ($n = 70$) exhibited a statistically nonsignificant effect ($p > 0.25$).

Significance and Future Research

That three differentially familiar groups of consumers exhibit different information use strategies for different reasons is a new and important finding.

EXHIBIT 3

GRADING SCHEME FOR FAMILIARITY SCALE

Question	Acceptable answers	Points awarded
1.	Accurate store names	One point per name up to a maximum of four
2.	Accurate situations	One point per situation up to a maximum of three
3.	"Yes"	Four
4.	"Yes"	One
5.	Accurate brand names	One point per brand name up to a maximum of four
6.	"India" or "Pakistan"	Two
	"Orient" or "Asia"	One
	Any of the British Isles or "Europe"	Two
	Any of the British Isles, "Europe" or "Australia"	Two
	"Anywhere" or equivalent	Two
7.	Three reasonable attributes	One
8.	"Sometimes"	One
9.	"Yes"	One
10.	"Button," "Flap," "Patch,"	Two
	"Besom," "Welt," "Slash," "Slit,"	Two
	"Fake," "In-Seams," "Mock,"	Two
	"Hidden," "Set-In," "Applied,"	Two
	"Breast"	One
11.	"Nylon"	Three
12.	"Dry Clean"	One
13.	"Dry Clean" or "Machine Wash"	Two
	"Handwash" or "Woolite"	Two
14.	Depending on category checked	Zero through four
	Total achievable points	45

NOTE: In Question 2 and Question 7, the accuracy/reasonableness of responses was evaluated based on expert opinion. See the Appendix for the familiarity scale items.

Low-familiar consumers are more likely to use extrinsic information based on their *belief* that a quality-extrinsic cue relationship exists in the marketplace. However, highly familiar consumers use extrinsic information based on their *knowledge* that a quality-extrinsic cue association exists in the marketplace.

The results of this study support an assertion made by Johnson and Russo (1984) that familiarity provides a useful segmentation technique. For instance, it may be inappropriate to attempt to use a high price to enhance quality perceptions if a majority of potential consumers are moderately familiar with the product. Further, if the product category exhibits a weak quality-price association, only low-familiar consumers are likely to respond favorably to a price-quality marketing strategy. This last issue was not unequivocally answered in this study; additional research comparing the effect of price on quality perceptions for differentially familiar groups using a product that does not manifest a quality-price association in the marketplace will further clarify highly familiar consumers' information use strategies.

Another potentially interesting question for future research is whether objective or subjective knowledge is the construct of interest that mediates consumer information search and use strategies. Although addressing that question was not the purpose of this arti-

cle, ascertaining whether self-confidence (a personality trait) or objective knowledge determines the information sought seems important.

APPENDIX

1. In the (name of town) area, please name all the stores that you can think of that carry women's blazers.

2. Please list all of the social situations in which you think it would be appropriate for a woman to wear a blazer.

3. Have you ever purchased a women's blazer?
   Please circle one: Yes   /   No

4. Do you presently own a blazer (men's or women's)?
   Please circle one: Yes   /   No

5. Please list all the brands of women's blazers that you know.

6. Women's blazers are traditionally constructed from wool of a mixture of wool and other fabrics. Below are listed some types of wool—please fill in the country of their origin in the space provided. If you do not know the answer, please fill in

"Don't Know"—please do not guess.

_____ Cashmere
_____ Harris Tweed
_____ Shetland
_____ virgin wool

7. Please list, in their order of importance, the attributes you think are important when evaluating women's blazers.

8. Are American-made women's blazers better than those made abroad?
Please circle one:
Yes / Sometimes / No / Don't Know

9. Are higher priced women's blazers better than lower priced ones?
Please circle one:
Yes / Sometimes / No / Don't Know

10. List four kinds of pockets women's blazers may have.

11. Qiana is a brand name for what fiber?

12. What is the most inexpensive procedure for cleaning a silk-lined gaberdine blazer that will not spoil the garment?

13. What is the most inexpensive procedure for cleaning a nylon-lined corduroy blazer that will not spoil the garment?

14. Regarding women's blazers, would you consider yourself (Please check one):
_____ completely unfamiliar,
_____ unfamiliar,
_____ neither familiar nor unfamiliar,
_____ familiar,
_____ extremely familiar.

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