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The Quality of Price as a Quality Cue

Reality is merely an illusion, albeit a very persistent one.

—Albert Einstein

In the lead article in this issue of the *Journal of Marketing Research (JMR)*, Shiv, Carmon, and Ariely (2005; hereinafter SCA) report on a series of studies that suggest the following:

- Price can exert a nonconscious influence on expectancies about product quality;
- Such expectancies can have an impact on actual product performance; and
- Such expectancies can also be induced through nonprice information, such as advertising claims about product quality.

As I discuss in this commentary, these findings are noteworthy for three reasons. First, they are *novel* because extant perspectives on how price–quality relationships operate do not envision the process that SCA posit. Second, they are *provocative* because, consistent with the opening quote attributed to Einstein, the findings suggest that perceptions can occasionally influence reality. Third, the findings are potentially *controversial* because they raise the specter of “hidden persuaders” that operate in a stealthy and manipulative fashion to prey on consumers’ psychological vulnerabilities (Packard 1957). But, first, some contextual background is necessary.

PRICE–QUALITY REDUX

In a 1949 article in the *Journal of Marketing*, Knauth documented a hosiery retailer’s “enormous” positive sales response following a price increase from \$1.00 to \$1.14, apparently because the higher price “suggested higher value” (p. 8). Such anecdotal evidence of violations of downward-sloping demand curves had been observed previously (e.g., Giffen goods, inferior goods, and “conspicuous consumption”; see also Scitovszky 1945) but were dismissed as anomalous (Marshall 1948). Yet evidence continued to mount that price might have both attractive and aversive properties. In the economics-oriented literature (Gabor and Granger 1966; Leavitt 1954; Tull, Boring, and Gonsoir 1964) and in the emerging empirical tradition in marketing and consumer behavior (Enis and Stafford 1969; Gardner 1971; McConnell 1968; Monroe 1973), it was becoming increasingly apparent that consumers frequently used price as a proxy for product quality. By the end of the 1980s,

based on an integrative review of more than 40 empirical studies, the evidence for a robust (though moderate) price–perceived quality effect appeared to be incontrovertible (Rao and Monroe 1989).

However, the theoretical basis for the perception that higher prices were associated with higher quality was less clear because the correlation between price and “objective” or actual product quality apparently is relatively low ($r = .27$; Tellis and Wernerfelt 1987) and mixed; occasionally, higher-priced options have been found to be of lower objective quality than low-priced alternatives in the same category (e.g., hot-air corn poppers; Gerstner 1985). The prevailing wisdom at that time regarding positive price–perceived quality correlations relied on a cognitive miser argument. Evaluating more direct (intrinsic) information about quality across a bewildering array of products, each with its own unique set of quality connoting attributes, was cognitively daunting, so most consumers adopted a price–quality heuristic because it had worked reasonably well in the past (Rao and Monroe 1988; Rao and Sieben 1992). That is, consumers consciously chose to rely on the price cue to make quality judgments because such a process was cognitively efficient.

In a parallel research stream that examined the problem of “information asymmetry” (Akerlof 1970), the argument was developed that when product quality was unobservable, sellers of high-quality products needed to develop market-based mechanisms to communicate their unobservable high quality credibly to buyers desiring high quality. Signals, which are costly (or potentially costly) expenditures, can credibly communicate unobservable high quality because (1) the cost associated with the signal will be recovered in the future only after the product’s true high quality is revealed, and therefore (2) a seller of low-quality products would not signal because it would not recover the cost associated with the signal after its low quality was revealed. One such signal of unobservable quality is a high price. Charging an irrationally high price is costly because it restricts demand to only those consumers who are already informed about quality (i.e., experts); in the long run, these costs of signaling would be recouped through future sales after information about the high quality spread in the marketplace (Bagwell and Riordan 1991; Kirmani and Rao 2000; Tirole 1989). That is, it is assumed that consumers rationally infer that under certain conditions, it is in the firm’s economic self-interest to offer only high-quality products at a high price. In this approach, there is a premise of substantial conscious calculation on the part of the consumer.¹ It is

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¹Similarly, the conspicuous consumption perspective (Veblen 1953) invokes a consumer who consumes high-priced options to convey exclusiv-

in the context of this history that the novelty of SCA's finding becomes apparent.

THE PLACEBO FINDING

A placebo (or pharmacologically inert substance) often yields therapeutic benefits because patients expect the inert medication to work. Using similar logic, SCA demonstrate that a lower-priced option yields lower objective performance than a higher-priced but physically identical option because consumers expect the lower-priced option to be of poorer quality. The effect is observed for favorable versus unfavorable advertising copy as well. Specifically, participants who consumed a product designed to enhance mental acuity performed worse at a puzzle-solving task than did participants who consumed the identical product purchased at a higher price or were exposed to less favorable advertising copy.

Two aspects of SCA's results are notable. First, because price is not integral to product performance,² prior price-quality studies have relied on self-reports of quality judgments and occasionally on choice data (McConnell 1968) to assess whether price and perceived quality might be correlated, little expecting that these perceptions might influence the manner in which the product actually performs. In the marketing literature, therefore, the finding that price can influence objective quality and performance is a novel insight. Second, and perhaps more noteworthy, is the finding that the price-quality expectation that drives differential performance is nonconscious. In light of the existing behavioral and information economics perspectives that are premised on a conscious information processor (whether a cognitive miser or one who uses an economically rational calculus), the observation that participants' tendency to perform poorly after they consumed a low-priced option disappeared when they were subtly alerted to the possibility that a nonconscious price-quality bias was operating (see Experiment 2) adds to the novelty of SCA's principal finding.³ This finding, when juxtaposed with the finding in Experiment 3 that simple advertising copy can also yield differences in product performance due to the placebo effect, raises several issues that I discuss next.

IMPLICATIONS AND APPLICATIONS

The issues that are of particular interest from the standpoint of theory development and practice are (1) why and how expectancies lead to enhanced performance, (2) the origin of the price-quality heuristic, (3) the existence and relevance of objective quality, and (4) the policy implications of the observed placebo effects.

The Missing Link

This perception → expectancy → performance pattern is consistent with research in a related domain, which exam-

ity, a process that implies some cogitation on the part of the consumer of high-priced options.

²In general, extrinsic cues, such as price, brand name, and store name, have been distinguished from intrinsic attributes, such as horse power for automobiles or fabric in a jacket, that directly affect product performance.

³That price recall was relatively high in all the studies does not damage SCA's claim, because participants who nonconsciously used a price-quality heuristic could nevertheless have recalled price correctly following the experimental task if they exerted sufficient cognitive effort. However, had their price recall been poor, SCA's claim would have been further strengthened.

ines the mental representation of stimuli that are (mis)perceived. For example, Brochet (2001) demonstrates that wine experts tasting a white wine infused with a red food dye used terminology that was appropriate to red wine to describe the white wine (e.g., laudatory terms such as "plum" and "spicy" and pejorative terms such as "thin" and "hollow"), and they used elaborate and flattering terminology (e.g., "complex," "balanced") to describe a middle-of-the-road wine labeled *grand-cru classe* and pedestrian terms (e.g., "simple," "flat") to describe the same wine labeled *vin de table* (Trillin 2002). Using functional magnetic resonance imaging (fMRI), Brochet also examines cerebral activation while participants who were blind to color and label tasted wine to isolate areas of the brain associated with wine tasting.

In a similar vein, McClure and colleagues (2004) use fMRI to examine blind and brand-cued delivery of Coke and Pepsi. When participants were blind to the brand, they displayed heightened activity in the ventromedial prefrontal cortex when tasting the product, but when tasting it after they were exposed to a Coke image, participants displayed heightened activation in the hippocampus, midbrain, and dorsolateral prefrontal cortex. It is clear that different parts of the brain that are associated with different functions (emotion, cognition, memory) are activated when brand information is available rather than when it is not. Finally, Shih, Pittinsky, and Ambady (1999) demonstrate that Asian women whose Asian selves were primed performed better at a mathematical task than Asian women whose female selves were primed.

It is in this area that further research can build on SCA's finding. Although SCA show the link among perceptions, expectancies, and performance and rule out several plausible rival explanations for their results, it remains unclear precisely how expectancies influence performance. Do changes in expectancies result in spontaneous enhanced (or depressed) activation of cognitive (or emotional) systems that, in turn, enhance or impair performance? The neurophysiological investigative paradigm has the potential to address this issue through fMRI or positron emission tomography-based investigations, which should provide greater insight into underlying processes than paper-and-pencil approaches.⁴

The Origin of the Price-Quality Heuristic

What is the source of the price-quality belief that drives expectancies that, in turn, yield the self-fulfilling prophecy that lower-priced products will perform poorly? In light of the poor correlations between objective quality (based on *Consumer Reports* data) and market prices, consumer beliefs about price-quality relationships should not be positive, based on direct or vicarious experience (Tellis and Wernerfelt 1987). Yet the price-quality belief persists and has real consequences.

A possible source of price-quality beliefs is advertising that fosters and reinforces these beliefs. In SCA's third experiment, they confirm that favorable advertising copy can induce expectancies about quality and can reinforce

⁴On a more prosaic, methodological note, to minimize the effect of extrinsic cues (including color) in taste testing, it may be appropriate to use black glasses for liquids and/or use other methods to ensure that respondents are unable to use visual cues for evaluative purposes.

price–quality perceptions. Furthermore, because prior usage is observed to strengthen placebo effects, favorable product experiences based on perceptions of quality are likely to reinforce and sustain expectancies in future product experiences.

This discussion suggests at least two implications. First, beliefs about the nexus between an extrinsic cue and quality are formed and sustained through some marketing activity, such as advertising, and it would be valuable to learn how and, particularly, when such beliefs are formed. For example, are children particularly susceptible to such messages, and are they reinforced by peer pressure (see Bachman, John, and Rao 1992)? Second, the formation of such stimulus → expectancy → performance linkages occurs for stimuli other than the price stimulus. Brand names, store names, and a host of other extrinsic cues ranging from product color to shape to sound probably yield expectancies that are then fulfilled during the person–product interaction. As I noted previously, neurophysiological approaches could yield important insight into the effect of these “irrelevant” cues on product performance.

The Nature of Objective Quality

If perceptions can influence the performance of objectively identical products, is there such a thing as objective quality? Even if objective quality exists, does it matter?⁵ Einstein’s suggestion that reality is an illusion (or Lily Tomlin’s more colorful observation that “reality is nothing but a collective hunch”) implies that objective quality may at best be elusive and at worst be irrelevant. This is provocative because it implies that at least in product design, psychology may be more important than engineering. Within some range of performance, objectively inferior close substitutes might actually perform better because the consumer’s perception of quality and associated expectation of performance will yield enhanced actual performance. This range within which perceptions trump reality is probably product specific, and an attempt to establish the range in which placebo effects can occur would be important. For example, in medical studies, the placebo effect is observed for therapies that have zero pharmacological efficacy, but for other product categories, performance enhancement may not occur for products that are physically “inert.” That is, a lawn mower with no mowing capability (much like an inert substance with no curative powers) is unlikely to mow lawns well, regardless of how much consumers’ expectancies are enhanced nonconsciously through the provision of extrinsic information. Nevertheless, even for lawn mowers, price and brand name may play a role in forming expectancies and, thus, in improving performance, as long as the focal lawn mower is a reasonably close substitute for a high-quality alternative.

⁵An extreme form of relativistic philosophy (occasionally termed nihilistic by its detractors) holds that reality does not exist independent of human perception (e.g., Lincoln and Guba 1985). For example, Collins (1981, p. 54) suggests that “the natural world in no way constrains what is believed to be.” This position is vigorously and often furiously fulminated against by adherents of more “realist” philosophies of science, such as Polkinghorne (1984, p. 66), who argues that it is “astonishingly anthropocentric ... to suppose that ... quantum mechanics as we know it is a biologically induced phenomenon.” Although this line of thought is interesting and possibly germane to the general issue of the nexus between reality and perception, I do not pursue it any further here.

Just as it is important to determine the degree to which objective quality can be manipulated (i.e., the degree to which a product can be objectively inferior than a substitute and still yield equivalent performance because of extrinsic, cue-driven expectancies), it would be important to determine the limits to which price can be manipulated to influence performance and demand. Beyond some point, price increases designed to suggest high quality might be perceived as incredible, or the improvements in performance relative to price increases may diminish. Similarly, reductions in price may yield reductions in performance up to a point, beyond which the performance reductions may be arrested.

Although the existing literature on placebo effects has largely focused on the differential efficacy of products that are ingested by consumers (therapeutic drugs, wine, performance-enhancing substances), SCA suggest that expectations of performance can influence the performance of other kinds of products as well. For example, they suggest that automobiles purchased at a discount could yield expectancies of lower performance, and because such buyers will drive “differently,” they will be more accident prone. Such a speculation may be premature. Unlike the purchase of other consumer durables, automobile purchasing is notorious for the negotiation that accompanies the process. Thus, a good deal (a low price) may enhance utility. The degree to which expectancies of product performance would be nonconsciously reduced would depend on whether the consumer attributed the low-price transaction to a poor-quality product or to his or her negotiation ability.

However, when a person purchases a used car from the original owner, the problem of asymmetric information and the apprehension that the car may be a “lemon” might arise (Akerlof 1970). In such a case, a low price might indeed translate into lower expectancies of product quality. Whether this lower expectancy of quality will lead to expectancies of poorer road performance or higher maintenance costs (or reduced performance on some other dimension of quality) is an open question. In addition, to the extent that the buyer develops the expectancy that the car will perform poorly on the road, he or she might also exert additional, compensatory effort in a nonconscious manner because the consequences of poor performance on the road may be fatal.⁶ Thus, he or she might drive slower or more carefully, whereas a buyer with an expectancy of higher quality and performance may drive more recklessly. That improved quality on the safety dimension might lead to reckless driving is consistent with Peltzman’s (1975) hypothesis and Peterson and Hoffer’s (1994) empirical observation that drivers of cars with air bags report higher personal injury–related insurance claims than drivers of belt-only equipped cars. This result could be due to either consumer “moral hazard” (i.e., consumers drive more carelessly when they believe they are well protected by superior technology) or “adverse selection” (i.e., high-risk consumers who drive longer distances or know they are bad drivers might select cars that offer additional safety features). Essentially, this analysis suggests that whether and

⁶In other words, motivation to succeed may lead people with lower expectations to generate better outcomes. Perhaps participants in SCA’s low-price condition would have out-performed the others if there had been a monetary reward for number of puzzles solved.

how consumers' expectancies of product performance will influence how those products actually perform will depend in important ways on (1) which type of consumer selects the product that is likely to yield low expectancy of performance, (2) which dimension of quality is expected to be adversely affected, and (3) whether and how much that consumer compensates for the expected low performance.

Consumer Exploitation

There are many ways that consumers can be exploited by the actions of firms. For example, price discrimination often results in the poor, the uninformed, the elderly, children, or the uneducated paying more for equivalent products and services that range from sneakers to bank loans.⁷ However, SCA's finding that the persuasive process is nonconscious raises the specter of the puppeteer manipulating the marionette consumer, resulting in consumer choices that are not necessarily in their best interest.⁸

In addition to the standard concerns about consumer free will and the scope for manipulation by unscrupulous marketers, a macrolevel implication of SCA's result is that product innovation (e.g., engineering improvements, technical research and development) can be less pertinent to product performance than elevation of consumer expectancies of performance through the provision of appropriate extrinsic information. If this is true for certain product classes such as pharmaceuticals, the impetus to develop more efficacious therapies may decline.⁹ This is a knotty problem because though product innovation and development are clearly important and worthwhile economic activities, if placebo effects enhance performance in important areas such as disease prevention and cure, the role of psychologically sound but "inert" information in assuring positive product performance can be a positive one. A contingency framework that specifies when product innovation is more important for performance enhancement than placebo-induced and expectancy-driven performance enhancements would be a fruitful first step in addressing this aspect of the consumer welfare issue.

CONCLUSION

In their article, SCA offer a new, provocative, and potentially controversial perspective on the role of price and similar extrinsic information on actual product performance. They should be commended for conducting an imaginative and rigorous set of studies to establish the phenomenon and eliminate plausible rival explanations. Their conclusion that nonconscious expectancies about price-quality relationships drive actual product performance is both compelling and rife with implications for research and practice. In this commentary, I have attempted to highlight issues and opportunities for further examination, including development of the following:

- A deeper understanding of the process that links expectancy with performance,
- A broader perspective on the cues that can be used to change expectancies and the limits (perhaps depending on product classes and consumer types) beyond which expectancies can not change objective performance, and
- A framework for the firm-level and public policy implications of these findings.

Renewed research interest on the broader issue of the formation of consumer beliefs and how they affect consumer behavior as it relates to product performance is fundamental to consumer behavior and marketing strategy. Shiv, Carmon, and Ariely provide an important first step in addressing one particular facet of a substantially larger research agenda that could provide answers to a series of compelling questions about human behavior.

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⁷For example, Packard (1957, p. 17) relates the experience of a department store that changed the price of a slow-moving item from \$.14 each to two for \$.29 and enjoyed a 30% increase in sales; it seems that numerically challenged consumers were being gouged.

⁸Their finding should not be confused with the notion of subliminal persuasion. Their stimuli were clearly above the threshold level of conscious perception, as confirmed by the price recall data.

⁹Perversely, the pressure to raise prices and advertising expenditures may increase.

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