

# Stating Preference for the Ethereal but Choosing the Concrete: How the Tangibility of Attributes Affects Attribute Weighting in Value Elicitation and Choice

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Marketers routinely make use of stated consumer preferences and the relative attribute-importance weights implied by these preferences when making decisions on issues such as advertising messages and product design. Using this information as a basis for managerial decision making is risky, though, if stated preferences diverge from actual choices. Practical evidence that such a divergence is of concern is provided by the current trend toward the use of stated choice-based conjoint analysis. This article examines differences between the attribute-importance weights consumers use during value elicitation and the attribute weights revealed to influence actual choice. The results of an empirical analysis of automobile stated preference and purchase decisions, and an experiment and subsequent qualitative analysis of wine choice, converge to suggest that consumers' attribute weightings differ in value elicitation versus choice in a reliable manner. Specifically, we demonstrate a *tangibility effect*—the tendency for tangible attributes to be weighted relatively more heavily than intangible attributes in choice as compared to in value elicitation. The process underlying the tangibility effect is discussed, as are the implications for researchers and managers.

Marketers routinely make use of attribute-importance weights derived from stated consumer preferences when deciding on how to configure new products, to whom to target brands, and what should be emphasized in advertising. Unfortunately, discrepancies between consumers' responses to value-elicitation surveys and their actual choices have long vexed marketing practitioners as well as academics. Ostensibly, the measurement of constructs such as attitude, choice intention, and attribute importance has value because these constructs can predict consumer decision making and explain the preference formation process. Unfortunately, the conclusion of decades of research is that although stated preferences are often related to actual choice, there are many instances in which the predictive ability of stated preferences is far from perfect (e.g., Kraus, 1995). This poses a risk to the practitioner. Indeed, strategic decisions based on the elicitation of preferences may be errant if the attributes estimated to impact choice the most play a lesser role in consumers' actual decisions, whereas other attributes believed to be relatively unimportant do, in fact, strongly impact choice. Similarly, this is a concern for the academic because incorrectly estimated attribute importances

based on stated preferences may result in erroneous explanations and predictions of consumer behavior.

Our research explores the consistency between the importances of attributes as estimated in value-elicitation surveys (i.e., stated preferences) and those implied by actual decisions (i.e., revealed preferences). To explore this issue, we use each of the major marketing epistemologies. Specifically, we conduct an empirical analysis of automobile purchase and survey data, and an experiment and qualitative analysis of stated and revealed wine preferences. We show that the importance of attributes may differ in stated preference versus choice. More important, we also delineate *which* attributes are likely to appear differentially important in stated preference versus choice. In particular, we identify the *tangibility* of an attribute as a determinant of the relative importance of the attribute in stated versus revealed preference, and we show that consumers' proclivity to engage in reason-based decision making contributes to this tendency.

## ON THE CONSISTENCY BETWEEN STATED PREFERENCES AND BEHAVIORAL DECISIONS

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Researchers have cataloged an impressive set of personal, attitudinal, and contextual determinants of the consistency be-

tween individuals' stated preferences and behaviors (e.g., Petty & Krosnick, 1995; Posavac, Sanbonmatsu, & Fazio, 1997; Ratner & Miller, 2001). An important contributor to the imperfect relation between stated preferences and decisions is the incomplete and poorly articulated nature of consumers' knowledge of their preferences (Alba & Hutchinson, 2000). In addition, preferences are typically constructed as needed in the decision context (Bettman, Luce, & Payne, 1998; Payne, Bettman, & Johnson, 1993), as well as during preference measurement. The process of constructing preferences can influence consumers' prior evaluations of the available options and can produce preference reversals (e.g., Hsee, Loewenstein, Blount, & Bazerman, 1999; Huber, Ariely, & Fischer, 2002). Research on the accuracy of consumers' predictions of their own future behaviors also is indicative of the disconnect between the preferences held during value elicitation and those at subsequent decision making. For example, Kahneman and Snell (1990, 1992) demonstrated that consumers have difficulty predicting the utility they will experience as the result of a future decision.

Nowlis and Simonson (1997) investigated how different methods of value elicitation suggest differences in the importance of attributes when direct comparisons between brands (e.g., a choice intention task) are compared to individual ratings of brands (e.g., ratings of purchase intention). Nowlis and Simonson demonstrated that "comparable" attributes are relatively more important than "enriched" attributes when comparisons versus individual judgments are made. Our research asks a related but different question, specifically, how do attribute importances revealed by actual choice relate to attribute importances associated with stated preferences?

### ATTRIBUTE TANGIBILITY AS A DETERMINANT OF ATTRIBUTE IMPORTANCE

Marketers make heavy use of marketing research studies that estimate attribute-importance weights based on stated preferences. Because managerial decisions are aimed at influencing actual purchase behavior, it is important to understand the factors that lead to low correspondence between stated and revealed preferences. In this study, we focus on how differences in the *tangibility* of attributes that define a product may contribute to stated attribute-importance weightings differing from weights implied by actual choices.

We define *tangibility* such that a tangible attribute is concrete, real, easy to define and describe, and easy to quantify (see Hsee et al., 1999 for discussion of the role of the "evaluability" of attributes in joint vs. separate judgments). For example, the price of a product is a highly tangible attribute, as is the performance of a product with respect to the delivery of a readily discernable benefit. In contrast, an intangible attribute is one that lacks the properties of a tangible attribute. For example the prestige of a product is much more

ethereal than are its price and performance and is, thus, of low tangibility.

The central thesis of our article is that attributes may be differentially weighted in stated preference versus actual choice as a function of their tangibility. An important contributor to this differential weighting may be consumers' tendency to engage in reason-based decision making, that is, choice is often guided by reasons that are easily justified and defended (Shafir, Simonson, and Tversky, 1993; Simonson, 1989).

We suggest that a compelling reason for choosing a particular brand is the relative superiority of the chosen brand versus the other brands in the choice set on the most tangible attributes. For example, it may be easier to justify purchasing a brand because it delivers greater readily discernable benefits than competing brands. In contrast to choice, in a value-elicitation study where consumers are either asked to rate the importance of attributes or provide stated preferences for brands, there may be little pressure to produce easily justified responses because no real decisions have to be made and, hence, potentially justified. Accordingly, we suspect that there will be a greater tendency to favor brands with high values on tangible attributes in actual choice versus when preferences are stated. In other words, we expect the relative weightings of attributes to be different in stated versus revealed preference such that tangible attributes will be weighted relatively more heavily in choice. This reasoning is consistent with Liberman and Trope (1998) who found that decisions in the distant future were influenced more by the desirability of the outcome than the feasibility of attaining it, but the reverse pattern emerged for decisions in the near future.

### OVERVIEW OF OUR RESEARCH

We employed multiple methods to explore these notions. First, we showed how the importance weights of tangible and intangible attributes differ when measured in value elicitation versus revealed in choice. Specifically, we modeled the multiattribute decision process of consumers with respect to actual automobile purchases and stated preferences. We examined a survey of consumers whose auto purchases were known and who were asked to indicate their perceptions of the attribute levels of a number of auto brands, as well as to provide an overall brand preference ranking. We estimated attribute weights based on the stated preferences and examined if these importance weights differ in actual choice.

Next, both to explore the process underlying the tangibility effect and to address concerns with alternate explanations inherent in a field study, we conducted an experiment in which the relative importances of a tangible and an intangible attribute of wine were initially measured in a value-elicitation task. A ranking task was used to classify each participant as either having weighted the intangible attribute more

heavily than the tangible attribute, or vice versa. After measuring stated preference, participants made an actual wine purchase decision, which served to reveal the relative importance with respect to choice that they placed on each attribute. The comparison of the relative importances of the attributes in stated versus revealed preference provides a strong test of our tangibility hypothesis. When the experiment was completed, some participants were asked to return so that we could collect qualitative data to gain insight into the motivations and considerations underlying their stated preferences and choices.

### ATTRIBUTE IMPORTANCES AND TANGIBILITY IN VALUE ELICITATION AND CHOICE: AN EMPIRICAL ANALYSIS

Utilizing automobile survey data, we estimate a multi-attribute expected-utility function through a two-stage procedure. First, attribute-importance weights are estimated based on stated preferences. Then, these weights are revised to reflect actual purchase behavior. Finally, we evaluate how these attribute-weight revisions are associated with attribute tangibility.

#### Consumer Expected-utility Model

Automobiles are a high-priced, infrequently purchased, durable good. Consequently, a utility framework similar to Rosen (1974) is appealing. This framework incorporates the consumption of all other goods ( $Y - P$ ) as an additional attribute in the multiattribute model, where  $Y$  is the consumer's income and  $P$  is the brand's price.

Typically a consumer does not have perfect information about the brands in his or her consideration set. The consumer incorporates this uncertainty and its related risk by maximizing expected utility rather than utility (Ajzen, 1996; Meyer, 1981; Roberts & Urban, 1988). Following Roberts and Urban, the expected utility consumer  $i$  has for brand  $m$  depends on its expected (perceived) attribute levels and a risk premium that adjusts expected utility downward to account for the risk-averse consumer's distaste for uncertainty. This premium increases as the consumer's uncertainty or familiarity with the brand increases. Under the typical assumption that the utility function is a separable function in the attributes, the expected utility consumer  $i$  has for a particular brand  $m$  is represented by:

$$E[U_{im}] = \sum_{j=1}^J w_{ij} f(z_{ijm}) - \frac{r_i}{2} s_{im}^2, \quad (1)$$

where  $w_{ij}$  is the relative importance weight for attribute  $j$  to consumer  $i$ . The last term,  $\frac{r_i}{2} s_{im}^2$ , denotes the risk premium,

where  $r_i > 0$  is a measure of absolute risk aversion and  $s_{im}^2$  is a measure of the consumer's uncertainty about brand  $m$ 's value.

The first estimation stage mimics the procedures used in many multiattribute studies (Green & Srinivasan, 1990). Stated preferences, a measure of the expected utility model  $E[U_{im}]$ , along with the perceived attribute levels of the brands ( $z_{ijm}$ ) and uncertainty ( $s_{im}^2$ ) with the various brands are used to estimate the individual-specific parameters ( $w_{ij}$  and  $r_i$ ) of Equation 1.

Given Equation 1, three potential explanations for differences in stated preferences and actual choices arise: (a) the perceptions of the consumer regarding the levels of the brands on the attributes differ; (b) the relative importance weights of the attributes differ; and (c) unmodeled random events such as stock outs. Stage 2 of the estimation addresses each discrepancy driver. Discrepancies concerning attribute perceptions are minimized through timely measurement, or price differences are directly modeled. Modeling potential differences in attribute weights results in a revised choice-based expected-utility model:

$$E[U_{im}^{choice}] = \delta E[\hat{U}_{im}] + \sum_{j=1}^J \gamma_j f(z_{ijm}) + \epsilon_{im}. \quad (2)$$

Following Equation 2, the actual choice weight of attribute  $j$  for consumer  $i$  is  $w_{ij}^* = \delta \hat{w}_{ij} + \gamma_j$ . The  $\gamma_j$  and  $\delta$  coefficients correspond to the altered relative weights in the actual choice context and the relevancy of the stated preference information (i.e., the attribute weights estimated from the stated preference data) in the description of choice behavior, respectively.  $\epsilon_{im}$  is a random error term that represents unmodeled events.

If no differences in the attribute weights based on stated preferences and actual choice exist, and the only differences between these two contexts are random, then we should find that  $\delta$  is greater than zero, and all of the  $\gamma_j$  equal zero. A finding that any of the  $\gamma_j$  do not equal zero implies that differences do exist in the attribute weights across the stated preference and actual choice contexts. The relative magnitudes of the  $\gamma_j$  parameters indicate the extent of any such weight differences.

#### Data

The data used are from a survey of automobile buyers collected by Horsky and Nelson (1992). These data are augmented by additional information related to the tangibility of automobile attributes. The survey data pertain to a representative sample of 283 consumers who purchased any one of 12 mid-sized and mid-priced sporty sedans in November 1984. This survey collected in February 1985 elicited the consumers' attribute ratings of all 12 cars on each of five attributes using a scale ranging from 1 (*very low*) to 7 (*very high*). The five attributes are performance, dependability, comfort,

prestige, and exterior styling. A 7-point scale also was used for familiarity or uncertainty with each car, with 1 defined as having *never heard of it* and 7 as having *owned the car in the past*. In addition, a preference ranking (more precisely, a purchase intention ranking) of the cars given a specified list price was obtained. Consumers' income, the car purchased, and the price paid also were elicited. Note that the simultaneous collection of self-reported past choices and stated preferences is standard (Louviere, Hensher, & Swait, 2000).

The close proximity of the purchase and survey dates dictates that attribute-level perceptions differ little across the choice and stated preference context. Prior to purchase, consumers (especially of a high-priced durable) are likely to sharpen their knowledge of the brands' attribute levels by talking to friends, perusing *Consumer Reports*, visiting dealers, and so on. Consequently, attribute perceptions elicited when preferences are stated should differ little from those when a choice is made if the questionnaire is administered shortly before or after the time of the choice event. Similarly, utilizing the list prices in the stated-preference estimation stage and the price paid in the choice estimation accounts for price differences across contexts. (In particular, for each consumer, the price paid for the chosen car is used for its price. For each car not purchased by the consumer, its price is taken as the average price paid by those respondents who did purchase that particular car.) Thus, our empirical analysis can focus on estimating potential attribute-weight differences in stated preference and choice.

With respect to attribute tangibility, we posit that consumers perceive price and performance as highly tangible attributes, whereas prestige is perceived as intangible. To verify this assumption, 23 MBA students at a northeastern univer-

sity were recently surveyed. Specifically, these students were asked to rate the tangibility of price, prestige, and performance with respect to automobiles on a 7-point scale anchored by 1 (*not at all tangible*) and 7 (*extremely tangible*) using the definition presented earlier. Results confirm our expectations. price and performance are perceived as highly tangible ( $M = 5.9$  and  $5.3$ , respectively). Further, the mean perceived tangibility of these attributes is equivalent,  $t(22) = 1.31, p > .2$ . In contrast, prestige is perceived as intangible ( $M = 3.1$ ), and both price and performance are rated as significantly more tangible than prestige,  $t(22) = 6.21, p < .001$ , and  $t(22) = 4.96, p < .001$ , respectively.

### Stated Preference-Based Estimation

LINMAP (Srinivasan & Shocker, 1973) was used to estimate the individual-specific multiattribute  $E[U_{im}]$  expressed by Equation 1. The averages over all respondents of the attribute weights,  $w_j$ , are provided in the second column of Table 1. These values indicate that, on average, dependability and exterior styling have the most impact in forming consumers' stated preference ranks. The next most important attributes are prestige and price. Performance and comfort are the least important attributes. Consumer uncertainty about the brands is found to be a significant factor, as important on average as style.

### Actual Choice-Based Estimation: Hypothesis Testing and Discussion

Logit analysis is used to perform the revision of the stated preference-based attribute weights to reflect actual choice

TABLE 1  
Average Estimated Attribute Importance Weights

Attribute	Stated Preferences Only Average Weights	$E[U^{stated}]$ Multiplier	Utility Revision Parameters	Stated Preferences and Actual Choice Average Revised Weights <sup>a</sup>
	$\bar{w}_j$	$\delta$	$\gamma_j$	$\bar{w}_j^*$
Performance	0.13	4.41 (9.42) <sup>b</sup>	0.93 (4.23)	0.24
Dependability	0.22		0.46 (2.58)	0.21
Comfort	0.13		0.24 (1.65)	0.13
Prestige	0.16		-0.66 (4.93)	0.00
Exterior Styling	0.20		0.45 (3.44)	0.19
All Other Goods (Y-P)	0.16		0.76 (5.19)	0.23

Note. <sup>a</sup>The average revised weights are computed so their absolute values sum to one. That is,

$$w_j^* = \delta w_{ij} + \gamma_j \text{ and } \bar{w}_j^* = \frac{1}{283} \sum_{i=1}^{283} \left| \frac{w_{ij}^*}{\sum_{k=1}^6 |w_{ik}^*|} \right|$$

The stated preference individual-level weights also sum to one.

<sup>b</sup>Values in parentheses are t-values.

behavior. The estimated  $\delta$  and  $\gamma_j$  parameters for Equation 2 are presented in the third and fourth columns of Table 1. All of the estimated terms are statistically significantly different from zero. Consequently, the attribute weights do differ across the actual choice and stated preference contexts.

It is important to note that the use of different estimation techniques and levels of aggregation in the stated preference and actual choice analyses do not explain the observed differences in attribute weights across the two contexts. Similar results arise if a homogenous logit model based only on the first preferences is used in the first stage to estimate  $E[U_{im}]$ . Techniques that "individualize" the second-stage choice estimation also provide similar findings. Componential segmentation, which incorporates demographic variables that interact with the attribute weights (Green & DeSarbo, 1978), heterogeneous or mixed logit formulations that allow for distributions rather than point estimates for the  $\delta$  and  $\gamma_j$  terms (Revelt & Train, 1998), and constrained logit models that restrict analysis to only those brands within each respondent's individual-specific consideration set all provide similar results.

The fifth column of Table 1 presents the average attribute-importance weights when revised to incorporate the actual choice data. In comparison to the stated preference results in the second column of Table 1, a rather dramatic change in the ordering of the average weights occurs, and this change is consistent with our expectations. Specifically, the tangible attribute performance, previously one of the least important attributes on average, is now the most important to sporty sedan buyers. Moreover, price also records a large weight increase, on average. In contrast, the weight of prestige, an intangible attribute, falls dramatically and becomes the least important attribute. The remaining attributes change little.

Taken together, these empirical results are very supportive of our hypothesis. The tangible attributes price and performance are more important to consumers in revealed relative to stated preference. Alternatively, the intangible attribute, prestige, plays little part, on average, in revealed preference even although stated preferences imply it is a key factor. Accordingly, the data show a clear tangibility effect; tangible attributes are weighted more heavily in choice than in stated preference, whereas intangible attributes are weighted more heavily when preferences are stated than when choices are made.

Our results lend some credence to the recent trend toward stated choice-based conjoint analysis and away from conjoint utilizing stated preference rankings or ratings. In fact, a rather large literature has developed comparing the predictive power and/or the estimated attribute weights of multi-attribute models based on various stated preference and stated choice measures (Louviere et al., 2000; Vriens, Oppewal, & Wedel, 1998). To explore this we revised the stated preference-based attribute weights in a manner similar to Equation 2 using stated choices (the brand ranked most

likely to be purchased) rather than actual choices. The average revised weights exhibited clear differences from the average weights based on stated preferences only. However, these stated choice results only partially reflect the increased importance of the tangible attributes in actual choice.

## AN EXPERIMENT AND QUALITATIVE ANALYSIS

Although the previously reported empirical analysis provides direct evidence of the tangibility effect, the data are not informative about the process underlying the effect. To deepen our understanding of the tangibility effect, we conducted an experiment and qualitative analysis with the primary aim of delineating the process that leads to the weighting pattern we observed. A second aim of the experiment was to broaden the generality of the findings by using a second product category.

In addition, the experiment addresses one potential limitation of the empirical analysis. Because preferences were measured after choices were made, choice may have influenced consumers' preference ratings (although, if anything, this would lead to convergence of choice and preferences, thus minimizing context effects and working against our hypothesis). To address this concern, preferences were measured before choices were made in the experiment.

### Method

#### Participants

Forty-one MBA students enrolled in an Internet marketing class participated in the experiment in exchange for compensation totaling \$20.

#### Procedure

Students were asked to respond to an online survey as part of an optional class assignment. Each respondent was given an Internet address via e-mail and asked to access the site and complete the survey within 2 days. The presentation of stimuli was counterbalanced by giving students different randomly determined addresses. On accessing the site, respondents were informed that the survey would cover a wide variety of consumer topics, and they would receive a total of \$20 compensation, but they would be required to purchase a good with some of the \$20. When the survey was completed respondents received the good they chose and the cash that they did not spend.

Initial questionnaire instructions informed respondents that the first part of the study would involve measuring their perceptions of the importance of different attributes in decisions among brands within a product class. Respondents

were asked to rank order the importance they ascribed to several attributes (e.g., vintage, price, taste/quality, and brand prestige) when making a medium-priced white wine purchase (defined as \$9–\$19), and then complete two lengthy questionnaires unrelated to this research. After completing these questionnaires, respondents were reminded that they would be required to purchase a product, that they would be able to review information about two brands of medium-priced white wine, and that they would be asked to choose one.

Two brands of wine were chosen as stimuli in an attempt to offer options that naturally varied on a tangible attribute (price) and an intangible attribute (prestige). We selected Columbia Crest (Washington State) as a relatively low-price, low-prestige alternative, and Macon-Villages (France) as a relatively high-price, high-prestige alternative. We expected that the Macon-Villages wine would be perceived to be more prestigious than the Columbia Crest because of the prevailing notion that French wines are generally more prestigious than are wines produced in Washington. A pretest with 40 participants confirmed this expectation by demonstrating that (a) price was perceived to be much more tangible than prestige ( $M_s = 6.1$  and  $4.4$ , respectively, on a 7-point scale anchored by 1 = *not at all tangible* and 7 = *extremely tangible*,  $t(39) = 5.12$ ,  $p < .001$ ), and (b) Macon-Villages was perceived to be significantly more prestigious than Columbia Crest,  $M_s = 5.2$  and  $4.0$ , respectively, on a 7-point scale anchored by 1 = *not at all prestigious* and 7 = *extremely prestigious*,  $t(39) = 3.62$ ,  $p = .001$ . We priced the wines at our cost: \$10 for Columbia Crest and \$16 for Macon-Villages.

The labels of these brands, a description of each taken verbatim from the wine.com Web site (a distributor of a wide variety of types and brands of wine), and prices were presented in the survey. The order of brand presentation was counterbalanced. After reviewing the information about the two wines, respondents clicked on the brand they wanted to purchase. The order of the choice options was also counterbalanced. There were no untoward effects of order on the dependent variables.

After making the purchase decision, respondents were asked to rate their expectations of the taste/quality of each brand on a 7-point scale (1 = *very bad*, 7 = *very good*), and how prestigious they considered each (1 = *not at all prestigious*, 7 = *very prestigious*). Following these questions the survey ended with a message thanking the respondent. After all of the surveys were completed, respondents were given their chosen bottle of wine, as well as the difference between \$20 and the price of the wine.

Several weeks after the study was completed, some of the participants were asked to return and engage in one-on-one depth interviews. These interviews were conducted to shed light on the process underlying the tangibility effect by delineating participants' motivations and the issues they considered while making their preference rankings and choices. We used nonreactive terminology so that participants would not

be led to give overly cognitive responses. For example, they first were asked to "describe your experience" when making the attribute-importance rankings, and then to share "what was on your mind" while deciding which brand to choose. The interviews were recorded and analyzed for content. Participants received \$20 for completing the interview.

## Results

**Quantitative analysis.** To check the efficacy of the manipulation, we compared the average prestige rating of the Macon-Villages wine to that of Columbia Crest. Consistent with the intent of the manipulation (and the pretest), a dependent samples  $t$  test revealed that Macon-Villages was rated as being significantly more prestigious than Columbia Crest,  $M_s = 4.76$  and  $4.05$ , respectively,  $t(40) = 3.36$ ,  $p = .002$ .

We also expected that Macon-Villages would be expected to be of better taste/quality than Columbia Crest because (a) perceived prestige and expected taste are likely to be at least partially correlated, and (b) most consumers overestimate the strength of price-quality correlations (Broniarczyk & Alba, 1994). However, our participants indicated no expectation that the taste/quality of these brands would differ,  $M_s = 4.90$  and  $4.63$ , respectively,  $t(40) = 1.13$ ,  $ns$ . Although surprising, this result increases confidence in the choice data that follows because participants clearly differentiated between the attributes of prestige and taste/quality. Moreover, this result provides further evidence that our manipulation of prestige operated as intended—given that there was no difference in perceived taste/quality, the place of production appears to have been the primary driver of the difference in perceived prestige.

To determine if the relative importance of prestige and price varied in attribute-importance rankings versus actual choice, we classified each respondent into one of four subsamples as a function of whether prestige or price was more important in his or her stated attribute-importance ranking, and whether prestige or price was more important in choice (we assumed that a choice of Columbia Crest implied that price was more important than prestige, and vice versa for a choice of Macon-Villages). Data of this sort are most appropriately analyzed with the McNemar  $\chi^2$  test (McNemar, 1962; Rosner, 1995; Siegel, 1956). Twelve respondents ranked price as more important than prestige and chose Columbia Crest (the low-price, low-prestige option), 14 ranked the importance of prestige higher and chose Macon-Villages (the high-price, high-prestige option), 12 respondents ranked the importance of prestige higher but chose the low-price, low-prestige option, and 3 respondents ranked the importance of price higher but chose the high-price, high-prestige option. Consistent with expectations, a McNemar  $\chi^2$  demonstrates a tangibility effect—as in the empirical analysis of the automobile data, price is weighted relatively higher than

prestige in choice as compared to attribute-importance rankings,  $\chi^2(1, N = 41) = 4.27, p = .039$ .

*Qualitative analysis.* To gain insight into the process that drives the tangibility effect, we invited some of our participants to participate in one-on-one depth interviews with the aim of uncovering the themes underlying their decision behavior. We interviewed 5 participants from each of the subsamples described in the preceding paragraph, except for the subsample that ranked price as more important than prestige but chose the high-price, high-prestige option (we spoke with 2 of the 3 such individuals).

Analysis of the interviews of individuals who ranked prestige as being more important than price, but chose the low-prestige, low-price alternative, supports our hypothesis that the tangibility effect is driven by consumers' tendency to engage in reason-based decision making. The general theme that emerged was that attribute importances were ranked according to what preferences would be ideally—typically a high-prestige brand. However, participants expressed that because choices were constrained by an actual outcome, they were based on the more easily justified tangible attribute of price. For example, one representative participant, discussing his attribute-importance rankings, said "Price is not a big thing to me, you know, especially anything between 9 and 19 bucks is not a large amount of money to spend." He went on to describe price as an "unimportant factor" and claimed that "spending money ... is not a big deal" when purchasing wine. When discussing what was on his mind while considering the choice options, he changed his tune, saying that he was "aware that whatever we didn't spend on wine ... we would get a check. ..." Moreover, he expressed the motivation that "if I can get another buck, why not maximize that?" This focus on the tangible attribute price in choice was evident even though the participant stated that a French wine likely had "more history behind the winery" and that the higher priced wine was indeed more prestigious than the lower priced wine. It seemed that this participant came to recognize that his responses in the value-elicitation portion of the study were inconsistent with his choice. He summarized his experience in the following manner:

In the end if you ask people, "What would you like?" this is what I would like ideally [participant points to the label of high-price, high-prestige option], but when it comes down to when it's coming out of their pocket they're going to do what makes most sense for their wallet.

This participant described the low-price, low-prestige option as being less prestigious, but more "practical" than the high-price, high-prestige option. Consistent with other participants within the subsample, he appears to have chosen the low-price, low-prestige option despite ranking prestige as be-

ing relatively more important than price because he simply could not justify (to himself) spending extra money to receive a more prestigious bottle of wine. Other participants from the subsample echoed this theme. One flatly said, "Price doesn't matter ..." when discussing his attribute rankings. Instead, he said that he would choose wine based on "taste and then, of course, prestige of the company." However, when discussing choice, this participant described how he chose to "maximize my own personal utility ..." by considering, "how much [money] I was getting at the end." In sum, consistent with our theorizing, when ranking attribute importances, participants seemed to focus on "ideally" what they would want—the intangible attribute of prestige. In contrast, when an actual choice is made, the focus often turns to the "practical" and to "utility functions," that is, to tangible attributes. This tendency seems to stem from the relative ease of justifying trading away prestige to retain more cash versus spending more money on a higher prestige brand.

In contrast to the previous subsample, other participants behaved consistently in that the same attribute was weighted higher in both value elicitation and choice. These participants seemed to have strong preferences for either price or prestige, which were evidenced in both value elicitation and choice. When queried about attribute-importance rankings, one individual who rated price as more important than prestige and chose the low-price, low-prestige alternative said, "Price is probably pretty important when I shop for wine because there is such a wide range of price ...", and "You can buy a \$9 bottle or you can buy a \$30 bottle, but I'm not sure I get three times the satisfaction out of a \$30 bottle. ..." When discussing choice this participant said, "The snob appeal doesn't count for very much" and that he knew he was choosing the "low-priced, common product." Another individual said, "I would consider price, because ... I probably wouldn't spend a lot on a beverage. ... It doesn't really matter to me how prestigious it is" with regard to attribute rankings, and "I just looked at the price" with respect to choice.

Participants who ranked prestige as being more important than price and chose the high-price, high-prestige alternative also revealed a strong attribute preference that consistently guided behavior. For example, one participant said that she would be "inclined to focus on more exotic ..." wines, when discussing her attribute rankings, and that she chose the high-price, high-prestige option because it had "exotic appeal," and was "artsy" and "sophisticated." Another said, "a good bottle of wine is in my opinion so much better than a bad bottle of wine that price really doesn't come into it, and I tend to be attracted more to prestigious vineyards. ..." when discussing attribute rankings, and "the price didn't have a big effect on my decision. ..." when discussing choice.

Finally, interviews with participants who ranked price as more important than prestige but chose the high-price, high-prestige alternative confirmed our expectations that their motivations may be idiosyncratic and not commonly themed. When asked to discuss his attribute rankings, one

participant indicated that prestige of the brand and quality were unrelated, so a low-priced wine would be acceptable. However, when describing his choice he said, "For no good reason I'd look at a French brand first." Another participant discussing his attribute rankings said, "Price is the most important because I'm not just going to go out and buy a \$20 bottle of wine." However, he chose the more expensive wine because he viewed the compensation he would receive for the study as bonus money (i.e., the wine was "free"), and thus his typical priorities did not apply.

## Discussion

The experiment clearly shows that stated and revealed attribute-importance weights are not always highly related. More important, consistent with our empirical analysis, the results show that in some situations the consistency between stated and revealed preference may be imperfect because consumers overstate the relative importance of intangible attributes (prestige) when preferences are measured and understate the importance of tangible attributes (price). Our qualitative analysis confirms our belief about an important process underlying the tangibility effect; the tangibility effect occurs because consumers often base their choices, but not their responses, to value-elicitation surveys on easily justified reasons.

## GENERAL DISCUSSION

Taken together, the empirical analysis of the automobile survey and choice data, and the quantitative and qualitative results of the wine experiment clearly support our tangibility hypothesis. In each, consumers overweigh intangible attributes relative to tangible attributes when preferences are measured as compared to actual choice. In the empirical analysis of auto data, the weight of the intangible attribute, prestige, was lower when estimates were based on actual choice versus when only stated preference data were used. Moreover, the weights of the tangible attributes, performance and price, were higher when estimated based on choice versus when based on measured preferences. In the experiment, forecasts of choice based on stated attribute importances would have been erroneous because, on the whole, the intangible attribute, prestige, was weighted relatively more heavily than price in value elicitation as compared to actual choice. Accordingly, consistent with our theory, the importance of attributes differs in stated versus revealed preference such that tangible attributes are weighted relatively higher compared to intangible attributes in choice versus value elicitation.

Although consumers at times purchase goods for their image and prestige, our data suggest that this tendency may be overestimated when stated preferences are used. Our qualitative data indicate that this effect occurs because consumers are

under pressure to make easily justified reason-based decisions when making actual choices, but that this pressure is absent in value-elicitation tasks such as marketing surveys. During value elicitation, consumers are not constrained to justify any decision to either themselves or others, and accordingly they may state that "sexy" but intangible attributes are quite important to them. However, our empirical, experimental, and qualitative data all suggest that when consumers are faced with actually making a decision, and the commensurate trading of resources that accompanies making a choice, much more emphasis is placed on tangible, more easily justified attributes. That is, rather than evaluating brands based on potentially exciting intangible attributes, when consumers make actual choices they may be more likely to ask, "Objectively, what can the product do for me?"

The implication of our findings is that stated preferences may not be highly predictive of actual consumer decisions because the relative importance of attributes differs in value elicitation and choice. This finding is troubling because of the reliance of marketing practitioners on research data pertaining to attitudes, purchase intentions, and attribute-importance rankings. If predictions based on stated preferences are markedly different from reality, marketers' decisions (e.g., product positioning, advertising emphasis) made based on the stated preference data may be suboptimal.

In addition to the previous note of caution directed at practitioners, we also suggest that the tangibility effect should give pause to academics. Consumer behavior researchers often assume that purchase intent and choice are highly related, in large part due to the logistical difficulties of running experiments in which actual purchase decisions are made. Our research suggests that this assumption may be questionable, particularly when the attributes of the choice options vary substantially with respect to tangibility. From the point of view of the analytic modeler, it seems that knowledge of stated preferences alone is insufficient to accurately uncover the consumer's decision process; understanding of the consumer is facilitated if stated preference data are augmented with real choice data.

A final point worth making is that our study benefited from the utilization of each of the three primary epistemologies in marketing research—analytical modeling, experiments, and qualitative analysis. It seems that all too often researchers choose one of these methods to investigate a phenomenon of interest and rarely stray into other domains. It is our position that the validity, generality, and, hence, value of marketing research is enhanced when investigators use multiple methods to know the consumer.

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